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Editorial

The Problem of Human Resources in The Health Care System

According to the National Health Profile 2015 released recently by Ministry of Health, Government of India, the total number of Allopathic doctors registered in the country through various State Medical Registration Councils and Medical Council of India is about 9.4 Lakhs. The total number of Ayush (Ayurveda, Yoga, Unani, Siddha and Homeopathy) doctors in the country is about 7.37 Lakhs, majority of them being Ayurvedic doctors. If one assumes that all these doctors are serving in India, then the population served per registered doctor in the country should be 1 in 1319.57, which is a very encouraging figure, although somewhat misleading. There is no reliable data available as to how many of these doctors registered under the various State Medical Councils had since migrated to other countries, and how many are now dead, disabled or not practicing Medicine due to age or any other reasons. However, out of these 9.4 Lakhs Allopathic doctors registered in the country, there are only 106415 doctors serving in the Government sector (average population served per government doctor is 11528). On an average, every government hospital serves an estimated 61000 people in India, with one bed for every 1833 people.

In India, the per capita health expenditure in 2014-15 was Rs.1280. Although it was more than double of what it was in 2009-10 (Rs.621), India spends less of its GDP on Health than some of the world's poorest countries. The total public expenditure on Health sector as a percentage of GDP was 1.26% in 2014-15, and there had been only a marginal increase in it since 2009-10.

In the state of Assam total public expenditure on Health sector as a percentage of GDP is 1.09%, while in other North-eastern states it is 2.16%. The total number of Allopathic doctors registered in Assam Council of Medical Registration till 2014 is 20,886. Since there is no Live Register, we do not actually have the knowledge about how many of them are available at present in the State for active service in the Health sector, and how many of them have migrated from Assam to other states of India. The statistics available in the Ministry of Health portal for the year 2014 shows that there were 4401 government doctors in Assam. Since the population of Assam projected for 01/01/2014 was 31693000, the average population served per allopathic doctor in government sector in the year 2014 was 7201, the number being far better than the National average

(11528).

In contrast to this, data in National Health Profile 2015, published by Government of India, Ministry of Health & Family Welfare shows that in Assam there are 1088 rural hospitals with 7504 beds, and 39 urban hospitals with 5877 beds. Thus the total number of hospital beds in the state is 13381, with one bed for every 2369 population. In the rural health sector, there are 4621 sub-centers, 1014 PHCs, 151 CHCs, 55 Model Hospitals, 50 mobile medical units and 15 boat clinics in the State. Total number of MBBS doctors in all PHCs is reported to be 1355, while the total number of specialist doctors in all CHCs is a mere 121 (reference date 31/03/2014). Against the requirement of 604 numbers of specialists (surgeons, Physicians, Obstetricians and Pediatricians) as per minimum requirement according to guidelines of IPHS, this leaves a shortfall of 483 specialist doctors. There are 25 District Hospitals and 13 Sub-divisional Hospitals and one central hospital in Guwahati (MMC), which is annexed to Gauhati Medical College Hospital and which is now served mostly by the doctors from GMCH. The total number of allopathic doctors in position in all the 25 District hospitals is 683, the number in 13 Sub-divisional hospitals being 155. According to Guidelines for District Hospital, IPHS 2012, the total requirement of doctors in all the District hospitals including MMCH and all Sub-divisional hospitals is 1277. But there are only 838 doctors in total, leaving a shortfall of 439. Majority of the specialist doctors are concentrated in the six Medical College Hospitals, where there are about 1550 faculty members, and about 1200 post graduate students belonging to various specialty and super-specialty departments in 4 Medical College Hospitals (the other two medical colleges are yet to start post graduate courses). However there are conflicting data published in other sources like NHM portal, according to which the total number of MBBS doctors in all rural hospitals is 992, and total number of specialist doctors in CHCs is 142 (reference year 2014). If one takes into account all urban and rural hospitals in the State as mentioned in the National Health Profile 2015 report, including the Medical College Hospitals, perhaps the figure 5065 as the total number of government doctors in position in the State is closer to reality, and hence the most probable figure for average population served per allopathic doctor in government sector in Assam is likely to be around 6250.

The above statistical data published in various sources may slightly differ from each other, but there is no reliable data regarding the large number of doctors engaged in the organized sector, corporate hospitals, industrial hospitals, plantation hospitals and in the numerous private clinics and small Nursing homes. Thus it appears that the total number of doctors serving in the Health sector of the State (both government and private sector taken together) is not exactly known. What is known for sure is that there is a huge deficiency of doctors serving in the government sector in the State, the problem being more acute in the specialist grade. Ample evidence of this may be observed in the number of vacancies in the entry level posts in Medical Colleges, especially in departments like Anesthesiology, Orthopedics, Radio-diagnosis etc. There is more acute shortage of specialist doctors in various District and Sub-divisional

hospitals, CHCs and the newly established Model Hospitals. The situation in the three newly established Medical Colleges in the State is even worse in the sense that almost all the posts created for Junior Residents (58 in number in each of the three Medical Colleges) are lying vacant for years together for the dearth of applicants. According to a press release by Assam Medical Service Association, a total of 418 posts in the categories of Joint Director (13), Additional CM&HO (35), SDM&HO (210) and Senior M&HO (160) are lying vacant.

In most of the European countries and the USA, the doctor to population ratio varies from 1: 300 to 1: 500. In Cuba it is lowest with 1:170, and in China it is reported to be 1:950. Even if we tentatively wish to bring down the present ratio of 1: 6250 in Assam by about 50%, we will need nearly 10,000 government doctors in service in the State. There are presently 726 MBBS seats in six Medical Colleges in Assam (two of them have not yet started producing MBBS doctors). In the neighboring State of West Bengal, there are 17 Medical Colleges with total MBBS seat capacity of 2350. Some States like Karnataka (with 50 Medical Colleges), Andhra Pradesh (46) and Kerala (30) have surplus number of MBBS doctors produced annually. According to MCI data base, there are 406 recognized Medical Colleges in India with a total of 48905 MBBS seats. While the population of Assam is about 2.5% of the total population of India, the proportion of MBBS seat is only about 1.48% of the total seats.

It may be assumed that to keep about 10,000 government doctors in position, we will need nearly 1000 doctors to be appointed in the State annually, considering the attrition rates to be about 10% due to retirement, death, disability and migration to other states of India and abroad. To fulfill this goal there is urgent need to increase the MBBS seat capacity in the State to 1200, since 15% of the MBBS seats are filled up on the basis of All India Quota by students of other states, who are under no obligation to serve our state permanently. This can be achieved either by increasing the seat capacity in the existing medical colleges of the State to almost double, or by establishment of five more colleges, each with 100 seat capacity. The later one is a better option in terms of employment generation and public benefit, but this will need a huge amount of government fund for infrastructure development (about Rs.2500 crores to establish five new medical colleges, considering the rise in the construction cost and increase in the price of medical equipment). Whether the Government will come forward with a bold decision to invest such a huge amount of fund in Health infrastructure development in the State is another question. Perhaps it may be worthwhile to give some thought to the possibility of allowing private sector involvement in establishment of new Medical Colleges in the State, at least to some extent.

But the most disturbing problem is how to find the adequate number of qualified and MCI compliant faculty members for starting the new Medical Colleges. We are already facing a lot of difficulty in fulfilling the requirement of faculty and residents in the newly established Medical Colleges of the State, even with the relaxation of the norms by MCI in

recent times (July 2015). The probable alternative options may be:

1. Introduction of Senior Residency scheme in all the existing Medical Colleges of the State, and making it compulsory for all post-graduate doctors to serve in the State for a minimum of three years. A raise in the stipend to the level at par with the Central Institutes and good residential accommodation in all medical colleges will be enough incentives for the post graduate doctors. After three years of introduction of this scheme, it may be possible to harness the strength of about 600 to 700 specialist doctors in the entire state. These specialist doctors, after completion of three years as Senior Residents may either be absorbed as permanent faculty in the Medical Colleges of the State, or they may seek alternative options like joining the state health services as specialists or go for employment elsewhere. In addition to this, the period of compulsory service for MBBS doctors may be increased from one to two years, out of which the second year posting may be done as Junior Resident in Medical College Hospitals, with provision of a reasonably good level of stipend and accommodation inside the college campus. In this way, the services of more than 500 junior doctors will be available for the newly established Medical College Hospitals. All these will involve additional fund for stipend and construction of hostel type accommodation for senior and junior residents in all new medical colleges, but in the long run it is going to yield good dividends for the government.

2. The second option is to get faculty and resident doctors, nursing and technical staff from other states where they are in surplus, which may be possible with higher level of incentives like hike in the salary, free family accommodation, educational facility for children and other perquisite.

Perhaps at present only with the private sector involvement we may be able to face this challenge, as in the government sector it is not easy to provide these additional facilities only to the Health care professionals of the State. For the huge requirement of fund for establishment of five new Medical Colleges in the State, a helping hand from the Government of India will perhaps be the only other alternative.

Source:

1. National Health Profile 2015 in www.cbhidghs.nic.in
2. Assam online portal in http://online.assam.gov.in
3. National Health Mission Assam in http://www.nrhmassam.in
4. Medical Council of India in http://www.mciindia.org
5. Rural Health Statistics 2014-15, Government of India, Ministry of Health & Family Welfare, Statistics Division.
6. Guidelines for District Hospital, Indian Public Health Standards (IPHS), revised 2012. DGHS, Ministry of Health & FW, GOI.

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Review Article

FASTHUG is all that is required for scientific all-inclusive protocolised postoperative care

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ABSTRACT

Introduction: postoperative management in general has been managed by a conventional routine system. Antibiotics and NBM have been given a scientifically incorrect place as routine postoperative care. GUT has been neglected and patient was allowed to starve for reasons of conventional practice rather than scientific background. Hence the following review article highlights a protocolised current practice good practices based universally practicable simplified protocol

Main text: This is a review article all-inclusive format for a universally uniified use. FASTHUG-BID is an acronym standing for

F: Feeding
A: Analgesics, antibiotics
S: Sedation
T: Thromboprophylaxis
H: Head end elevation
U: Ulcer prophylaxis
G: Glycemic control
B: Attention to Bowel
I: Indwelling catheter, interactions with nurse, colleagues, Nutritionists, physiotherapists & administrators
D: Detailed counselling of patients, attenders & support care takers

Each aspect of FASTHUG-BID is described with basis and good practice guidelines.

Conclusion: A review article on an unified universally practicable scientific protocol described as "FASTHUG-BID".

Key Words : *Postoperative protocols; Early enteral feeding; DVT prophylaxis; pain scores; head end elevation; sedation policy; ulcer prophylaxis; glycemic control; bowel management; indwelling catheter management; counselling.*

Introduction :

Modern surgical practice still rife with whims and fancies. The postoperative care is often not protocolised. The age old concept of prolonged post-operative use of NBM, the myth and fear of post-operative aspiration, routine use of H2 blockers and unnecessary prolonged use of antibiotics continue to be a part of post-operative treatment in most instances. Development of science in general, response to stress and trauma ,principle of wound healing , recovery of organs ,prevention of complications and the importance of intact gut mucosal barrier although understood very well is not seen to be implemented on ground. Hence this attempt to standardize post-operative treatment and to develop a uniform infallible post-operative treatment frame or schedule called FASTHUGBID.

"FASTHUGBID " is an acronym

F: Feeding

A: Analgesics, antibiotics

S: Sedation

T: Thromboprophylaxis

H: Head end elevation

U: Ulcer prophylaxis

G: Glycemic control

B: Attention to Bowel

I: Indwelling catheter, interactions with nurse, colleagues,

Nutritionists, physiotherapists & administrators

D: Detailed counselling of patients, attenders & support care takers

F : Feeding

Nutrition as an important background systemic factor had been realized long ago but the postoperative instructions rarely contain specific instructions regarding nutrition . The common myths among many practicing surgeons is that intravenous fluids are enough for first few days and Nil per oral [NPO / NBM] is essential [1-4]

Background concept of feeding:

Elective, inadverant , routine preoperative starving of 12 hrs initiates atrophy of intestinal epithelium, shortening of villi compromising integrity of gut. This loss of integrity of gut is responsible for endogenous endotoxemia endogenous bacteremia in at risk patients leading to sepsis , activation of innate immunity, modulation of adaptive immunity , release of cytokines leading to global endothelial failure and multi system organ dysfunction.

Gut liver axis is the main engine behind septic shock and this engine is not activated if the epithelial integrity of gut is maintained. Integrity of the gut is maintained by constant supply of nutrients like glutamine a non-essential amino acid an enterocyte friend which is found in abundance in normal food. IVF(Intravenous fluids) do not take care of this element.

Hence feeding is suggested as top priority along with hemodynamic parameters like blood volume, Plasma oncotic pressure, serum pH, serum electrolytes and volume. Hence the need for incorporating feeding as an essential component of standard postoperative instructions

Feeding can be enteral or parenteral. Era of Dudric, Era of parenteral nutrition, Era of hyper alimentation are a matter of past. Gut is best, when available, when dependable, desirable, adequate, and reliable. Gut is often available at least for partial nutrition in most patients. The persistent myth of routine NPO/NBM is unscientific and is harmful to the patient. Most surgeons today believe abdominal surgery NPO nutrition for few days and many of them depends on bowel sounds, while bowel sounds need not be present for bowel motility. It is constantly observed fact gut is constantly moving on table. Immediate post-operative NPO has proven to lead to transient villus atrophy and breakdown of gut barrier. Hence early enteral feeding should be standard in all patients.

How early is early:

Although earliest is on table at least after complete recovery from anesthesia, small calorie rich Normo-Osmolar frequent feeds can be started. Fear of aspiration is again a constant myth amongst many surgeons and critical care specialist. Small frequent feeds mitigate the fear of large volume induced emesis. Therefore author strongly recommends early enteral feed atleast for small feeds for gut priming.

In case of gangrene or massive infarctions like superior mesenteric artery or superior mesenteric vein thrombosis gut may not be dependable. such circumstances low calorie , short duration , supplemental parenteral nutrition is in order. Conventional concept of hyper-alimentation in critically ill major surgeries is again misplaced myth.

More calories are more dangerous. More calories lead to increased body metabolism increased carbondioxide , increased utilization of all resources for act of respiration. Hence hypocaloric diet amount 15 - 20 calories per kg should be enough to maintain lean body mass. Lean body mass integrity is the crux to prevent Sepsis , Septic shock, Multi Organ Dysfunction Syndrome , Immune activation. Hypercaloric formula also exaggerate Systemic Immune Response Syndrome, SIRS leading to Counter Autoregulatory Response Syndrome CARS that might lead to supplementation of innate immunity unbalance release of Cytokines leading to sick cell causing Multi Organ dysfunction. Hence hypocaloric diet is recommended.

Another myth is postoperative caloric chase. Caloric chase is again product of with excessive calorie induced body metabolism and increased ventilation and futile consumption of body resources for efforts of breathing that might even lead to prolonged periods of ventilation

Next misplaced myth is postoperative feeding is the ratio of routine carbohydrates and fats . Current

concept is to use proteins for proteins i.e., maintaining lean body mass is highly scientific. Instead of using protein as

calories use protein 1g of nitrogen per day. Author strongly recommends low calorie diet, calories divided between Carbohydrates and Fats.

Another long held myth is fear of starting fats in early nutrition. Fats can be started on day one as medium chain Glycerides orally , Omega fatty acids intravenously. Therefore general recommendation of post operative instructions is as follows:

a. Gut as often as possible
b. Total calories 20 cal/kg/ day
c. Protein for protein 1gN/kg/day
d. Calories to be divided between carbohydrates and fats
e. Total volume as per maintainence needs of patients
f. Micronutrients particularly vitamin, Zinc , Glutamic acid and Purines

Therefore first component of post-operative instructions is feeding.

A stands for analgesics and antibiotics

Analgesics:

Although entire medical profession can only do pain relief in all and to all, but unfortunate reality is analgesia is misused , abused or not used at all. Neonatologist often ignore analgesia and adult analgesia is often prescribed as a routine. This routine use of narcotic analgesics have resulted in many post-operative addicts and has led to misuse of FORTWIN (pentazocaine) and others

Acute pain is part of surgery and it needs to be taken care of proactively. Patient should never complain of pain. Pain results in tachycardia, anxiety irritability. Acute pain of any type if not suppressed adequately will lead to chronic pain. Acute pain have more of a somatic component, while chronic pain has psychological component. Therefore it is mandatory and becomes the whole responsibility of surgeon to treat acute pain adequately.

Hence author suggest quantifying pain, analgesic therapy as directed by patients. Meaning patient demanded pain severity score directed analgesic therapy.

In children and small infants WONGS FLACC SCORE is reliable. FLACC is an acronym again it stands for

F: FACE

L: LEGS

A: ACTIVITY

C: CRY

C: CONSOLABILIY

"Each with a maximum score of 2, total 10".

No child should have a score of more than 5.

In older children and adults two most popular pain scoring systems are VAS visual analogue score and pain facies score PFS. These both score vary from grimace to smile and each is given a scoring system. Again no patient should be allowed to score more than 5. Author therefore pleads that, analgesia should be scientifically appropriate, quantified, as far as possible and score directed patient demanded analgesia is most ideal method to taking care of acute post-operative pain.

Various nerve blocks, surgical site sensacaine infiltration and sometimes even post-operative epidural analgesia alL have their place

Analgesia takes care of good chest physiotherapy and makes the patient cooperative with in bed and off bed ambulation. The analgesia dose and duration also need to be strictly protocolled. Narcotics should be avoided as long-term analgesics. More severe the pain more shorter acting drugs should be the policy.

Dual analgesia 1. At surface level 2. At systemic level alternated with each other seems to avoid unnecessary drugs and to maintain 24x7 pain free status.

A: Antimicrobials/Antibiotics

Antimicrobials have become the most abused & misused drugs in the surgical practice. Surgical site wound infection requires only prophylactic Antibiotics. Existing customary myths and so called routine practice of antibiotics have led to a situation where antibiotics have become panacea of or post-operative instructions .This have also led to unscientific arbitrary are use of antibiotics. Hence author recommends to classify wounds into clean, contaminated and dirty cases. Clean surgical case like inguinal herniotomy, umbilical herniotomy, hydrocele, orchidopexy, soft tissue tumor excision do not require antibiotics at all while clean contaminated cases require prophylactic antibiotics. Clean contaminated cases cholecystectomy appendectomy intestinal diverticula resection elective resection of small bowel. These require higher concentration of antibiotics at site of wound that is making incision. Hence most ideal time is 60minutes

before making incision. Furthermore it is best to give first does at the time of induction of anesthesia. This assure peak dose of antibiotic at the time of incision. Dirty cases as exemplified by peptic perforation, ruptured infected appendix, gangrenous gall bladder, and gangrenous bowel, require therapeutic antibiotics. Only this group require antibiotics for 5-7 days. Prophylactic antibiotic does may be repeated if surgery is longer than 3 hours.

Choice of antibiotics:

Many reviews and guidelines recommend aminoglycosides with or without first generation cephalosporin is enough. But higher level of antibiotics fourth generation cephalosporin. Imipenem group of drugs are rarely indicated in emergency surgeries. In elective surgeries they may form initial choice till the patient gets stable or laboratory course confirm or otherwise of established sepsis.

Myth that antibiotics are the most important part of treatment needs to be wiped off from surgical mindset. Even in septic shock removal of septic focus should be a priority component of treatment.

Blind and unscientific combination antibiotic usage needs to be curbed as it increases development of resistant bacteria and also increases the cost of medical care. The author recommends guarded use of antibiotics. Minimal inhibitory concentration, pharmacokinetics, pharmacodynamics are going to be basis of future standard care with regards to selection and use of antibiotics.

Intra-cavitary antibiotic use has no scientific basis. Simple saline lavages of cavities, removal of dead tissues and clots and obliteration of dead space are the important components of collapsible cavities that are infected.

Antibiotics for bladder wash:

Again seems to be a myth rather than a scientific fact. Role of typical antibiotics have less space in scientific practice. Raw areas, burns, pen wounds might be some areas where typical antibiotics may be of some use. Hence authors recommend, the A component of acronym for antibiotic to be filled with caution, need of the patient, expected local epidemiology and existing local sensitivity pattern.

S: SEDATION

Sedation again is approached in the post-operative setting with a casual mind. Patients are either sedated routinely or are not sedated at all. Every hospital needs to develop its own sedation policy for

a. Procedures
b. Invasive investigations
c. Sedation on ventilator
d. Post-operative aggressive behavior

Routine use of sedatives particularly narcotics have led to drug abuse and misuse. Hence H group of sedatives should be cautiously prescribed with a regular register maintained according to every milligram consumed.

Often one finds a patient on ventilator with a endotracheal tube in-situ opening eyes and moving hands. This scenario is inhuman. All patients with endotracheal tube need to be sedated at least to the extent of suppressing tracheal irritation.(5,6)

Gone are those days where every post-operative patient were prescribed narcotic analgesics at the end of the day. Author stresses that use of narcotics as analgesic should be highly selective and narcotics should not be used as sedative for post-operative aggressive behavior. Similarly narcotics should not be used for sedation for investigations MRI, angiogram and other procedures. Therefore S standing for sedation needs to be selective, need specific, one dose prescription and narcotic free.

Routine post-operative sedations should be curbed. Post-operative insomnia, post-operative restlessness and stress require a psychiatric counseling and guarded use of supplementary anti depressants.

Routine sedation instruction in postoperative care in aggressive, agitated patients:

In case of excessively irritated patient, agitated patients hospitals should have a policy of restraining and sedation. This restraining technique should be in accordance with human rights association no restraining technique should lead to injury to any part of patient. Commonly seen restraining injuries are wrist erosions and sometimes even fracture ribs. When patient is biting teeth excessively, a rubber protector has to be kept so that teeth are not broken and aspirated.

T: Thromboprophylaxis

Deep Vein thrombosis, DVT was recognized as a postoperative complication many decades ago. Although WHO and other associations have declared guidelines of DVT, surgeons' mindset continues to be a stumbling block for routine use of thromboprophylaxis in most parts of the world. DVT prophylaxis is indicated in following conditions:

a. All patients above 35 years of age

b. Pelvic surgeries
c. Abdominal surgeries for more than 3 hours
d. Orthopedic surgeries
e. Gynecological surgeries
f. surgery on malignant condition
g. Surgery on septic condition

Polytrauma, sepsis, major tissue injury are all procoagulation states. As many as 80-90% postoperative deaths are found to have pulmonary emboli at autopsy. Therefore DVT prophylaxis should be a standard care. Low molecular heparin derivatives like FLAXIPARIN are to be started before surgery. It may be for 3 or5 days depending on indication. Longer the bed ridden patient longer should be the duration of DVT prophylaxis.

DVT prophylaxis & coagulation profile:

DVT prophylaxis does not require any coagulation profile like PT, APTT test to be done. Single dose of low molecular weight heparin prevents thrombosis, but also does not alter coagulation profile. Hence the fear and myth that DVT prophylaxis would increase the intraoperative or postoperative bleeding seems to be a conventional myth rather than scientific fact. The fear of neurosurgeon and orthopedic surgeons have been adequately addressed by World Society for DVT as follows:-

Both orthopedic and neurosurgical procedures can be classified as bleed prone or not-bleed prone. All those operations, all those procedures who are not bleed prone should have DVT prophylaxis as any other patients. The Other DVT prophylaxis measures are physical

a. Progressive compression venous stocking
b. Pulsatile venous pumps during surgeries
c. Compression and massage of calf muscles after surgery
d. Early mobilization
e. Free leg movements in bed

The most common source of deep vein thrombus are pelvic veins. Therefore routine dependence on Homan sign, rigid calf, tender dorsiflexion as indications for prophylaxis are obsolete. Hence the standard care modern surgery should include Thromboprophylaxis in all major operations.(7,8)

H: HEAD END ELEVATION

Head End Elevation is not considered even by many critical care specialist. The old concept of Trendelenburg position in Hypotension and shock has led surgeons and critical care specialists to forget the basic concept that head and neck veins do not have valves. This no valve venous system of head and neck is solely depended on gravity drainage. hence all seriously ill patients , all major operations, all patients who are hemodynamically unstable, all patients with abdominal distensions and subsequent diaphragmatic splinting and all patients on ventilator , all patients with stroke, all patients of neuro-trauma, all patients of head and neck injury and basically all patients without exception should have their head elevated during post-operative period. The elevation should be around 30 degrees. This simple elevation of head has the following physiological advantages:

a. Reduces venous hypertension in head and neck veins, thereby reducing intracerebral hypertension
b. Improves cerebral function
c. Improves pulmonary function
d. Does not not stimulate Hypothalamo- Pituitary-Axis, HPO axis in stressfull conditions.

The concept that Trendelenburg position increases venous return in hypotension is only true for legs but a disadvantageous and probably dangerous position. Therefore the physiological position of shock is both head end up and both legs up- head end up increase venous return from brain and neck, legs up increase venous return to heart from lower limb. It is therefore recommended to elevate head as a routine and should be included in standard care in all postoperative instructions and critically ill patients.(2)

U: ULCER PROPHYLAXIS

Ulcer prophylaxis is again surrounded by false scientific claims and myths and dominated by pharma companies' aggressive push of H2 blockers. This has led to an enormous use of H2 blockers as routine in postoperative care. The stress ulcers are shown as reason for routine use of H2 blockers.(1)

The basic fact is that gastric acid is the first body barrier for invasive infections . Routine suppression of acid leads to bacterial growth and ascent of bacteria along endotracheal tube leading to increased Ventilation Associated Pneumonia, VAP , and also increases endogenous endotoxemia and bacteremia. Therefore routine use of H2 blockers is unscientific and should not be used. Instead if the surgeons are worried about gastric erosion, locally acting sucralfate will promote healing , wil preserve gastric epithelial barrier and will not decrease gastric acid secretion. Hence ulcer

prophylaxis needs to be limited to locally acting sucralfate. Two Exceptions were H2 blockers are recommended are:

1. Neurosurgical operations
2. Head injury
3. Severe Burns [cushing's and curling's ulcer]

G: GLYCEMIC CONTROL

Although the word glycemic control suggest glycemic control in in diabetics but in most critically ill, massively traumatized severely septic patients stress hypoglycemia or hyperglycemia are often seen in postoperative period. Hypoglycemia if persistent is neurotoxic. Hyperglycemia in presence of hypoxia is also neurotoxic. Therefore the need for maintaining the normal glycaemia.(9)

The pendulum has been swinging from tight glycemic control to moderate glycemic control. Literature supports both tight glycemic control of 100% to moderate glycemic control of 120 %. The current trends seems to be tight glycemic control may be harmful. Therefore prevention of severe hypoglycemia and severe hyperglycemia should be targets rather than actual blood glucose level. Author strongly suggest to measure 6th hourly blood glucose in all diabetics and 12th hourly blood glucose in all seriously ill non diabetic patients. Temporary use of insulin is extremely useful in hyperglycemia and steroids and somatostatin are extremely useful adjuncts to treatment of hypoglycemia along with incremental intravenous glucose.

Note: Hypertonic 25% and 10% has no place in modern practice. This completes the acronym FASTHUG. It stands for FASTHUG twice a day

B : ATTENTION TO BOWEL

Many surgeons keep patient NPO/NBM on unexplainable reasons till the bowel sounds appear. This concept is not scientific. Promotion of early bowel movements helps in reducing the duration of ileus decrease intra-abdominal pressure facilitates the surgeon for "So called bowel sounds"

Gut - Liver - Axis is the engine of sepsis and hence maintaining Gut motility, gut integrity helps to retain the gut liver axis intactness. Enhancing bowel movements also reverses normal colonic in micro environment at the earliest.

Hence the author supports routine use of prokinetics like MOSAPRIDE at least for few days. Dulcolax suppository and enemata helps to initiate colonic peristalsis . Mass colonic peristalsis also helps to prevent formation of adhesions between the loops of intestines present in the center of abdomen. (10)

Mass movements of colon induced by enemata disturbs the formation of seropurulent fibrinous adhesions between small bowels leading to decrease in adhesions.

Author therefore supports regular use of prokinetics and enemata. This also boost the confidence of patient that his bowel is moving and he will become more cooperative with ambulation physiotherapy and early nutrition.

I: Stands for care of indwelling catheter like IV Line, Central lines, Urethral catheter, drainage tube external stents etc., by noting the status of indwelling catheter in the case sheet twice a day avoids escape of clinicians clinical examinations/diagnosis. Dislodged catheters can be picked up early.(11)

I also stands for intensive interaction with nurses physiotherapists, nutritionists, other specialists involved and administration and when required. These interactions will lead to a decrease confusion between player of health care delivery. Also interaction leads to standardize health care which in turn leads to better patient doctor confidence.

D : DETAILED COUNSELLING

Detailed counselling of relatives on a twelve hourly basis is extremely useful a.To gain the confidence of relatives

b.To promote an open clear patient centric health care delivery.

c.To annal the missing doctor patient faith.

Therefore FASTHUGBID is a standard scientific all in one all-inclusive post-operative patient care. This documentation system helps not to overlook nutrition not to overlook integrated health delivery and it also helps as a legal aid in cases of litigation.(12)

Abbreviations used:

FASTHUGBID is an acronym for

F: feeding, A: analgesia, antibiotics; S: sedation, T: thromboprophylaxis

H: head end elevation U:ulcer prophylaxis, G:glycemic control, B: attention to bowel , I: indwelling catheter, interactions with nurse, colleagues, Nutritionists, physiotherapists & administrators

D: detailed counselling of patients, attenders & support Care takers

MODS: Multi organ dysfunction syndrome

SIRS : Systemic inflammatory response syndrome

CARS : Counter auto regulatory response syndrome

DVT : Deep vein thrombosi, PT : Prothrombin time, APTT : activated partial thromboplastin time, WHO : World Health Organization

FLACC score: face, legs, activity, cry, consolability

Key Words:

- Postoperative protocols
- Early enteral feeding
- DVT prophylaxis
- Pain scores
- Head end elevation
- Sedation policy
- Ulcer prophylaxis
- Glycemic control
- Bowel management
- Indwelling catheter management
- counselling

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Original Article

Paediatric trauma in Northern India: An early experience from paediatric trauma centre

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ABSTRACT

Introduction: Trauma is most common cause of mortality in children. The aim of this study was to outline the etiological spectrum, injury characteristics and outcome of paediatric injuries and to identify the predictors of the outcome of these patients in our setting.

Methods : A retrospective study involving paediatric trauma patients admitted to BHU, Trauma centre over a nine-month period from February 2015 to October 2015. Data collected from the case records included; demographic characteristics (e.g. age, sex), circumstances of injury, characteristics of injury, treatment modalities and mortality.

Results : During the period under review, a total of 110 paediatric injury patients were admitted to the trauma centre. 40 patients were included in the study. The male to female ratio was 1.8: 1. Most of injuries occurred at home (57.3%). Most common mode of injury was fall from height Most patients 36 (90%) in this study sustained blunt injuries. The vast majority of patients 24 (60%) reported after 24 hours of injury. In this study, only 11 (27.5%) patients received pre- hospital care. The majority of 35 (87.5%) were brought in by relatives/friends and three were brought by relatives. According to Paediatric Trauma Score (KTS), the majority of patients sustained Moderate injuries (PTS = 6-8) 27(67.5%).

Conclusion : Paediatric trauma is a major cause of morbidity and mortality in developing countries with special subgroup of patient needing a dedicated paediatric trauma centre.

Key Words : *Paediatric trauma; blunt trauma; sexual assault; trauma score.*

Introduction :

Background

Trauma is most common cause of mortality in children [1]. It is responsible for approximately 600 000 hospitalizations and 15 000-20 000 paediatric deaths each year in United States alone [2]. In Asia and other developing countries the true incidence is not known and trauma constitutes a major but neglected public health problem. The causes and pattern of paediatric injuries have been reported to vary according to geographic area, socio- economic status and environment factors [3]. With upcoming trauma care facilities in different parts of India, now a better care of such patients is possible. It has been shown that improved hospital care results in lower mortality and that care is best delivered at a paediatric trauma centre [4]. Therefore the identification of high-risk injury patterns may lead to improved care and ultimately further improvements in outcome in children admitted to hospital with trauma [5]. The aim of this study was to outline the etiological

spectrum, injury characteristics and outcome of paediatric injuries and to identify the predictors of the outcome of these patients in our setting. The study results will provide basis for planning of prevention strategies and establishment of treatment protocols.

Methods

Study design and setting

This was a retrospective study involving paediatric injury patients admitted to BHU, Trauma centre over a nine-month period from February 2015 to October 2015. BHU trauma centre is largest functional trauma centre in India with 350 beds. The study included all pediatric injury patients aged 12 years and below presenting to the trauma centre. Patients with isolated head injuries, burn injuries, without consent for the study and those who died before complete assessment were excluded from the study. The severity of injury was determined using the Paediatric trauma score (PTS) [6]. Severe injury consisted of a PTS 0-5, moderate injury 6-8, and mild injury 9-12. Depending on the type of injury, the patients were treated either conservatively or by surgery. Data collected from the case records included; demographic characteristics (e.g. age, sex), circumstances of injury, characteristics of injury, treatment modalities and mortality.

Results

During the period under review, a total of 110 paediatric injury patients were admitted to the trauma centre. Of these, 70 patients were excluded from the study due to failure to meet the inclusion criteria. Thus, 40 patients were studied. The age of patients ranged from 20 days to 12 years with a median of 4 years. 26 (65%) patients were males and 14 (35%) were females. the male to female ratio of 1.8: 1 with a male predominance in each age group. In this study, no patient had premorbid illness. Regarding the time of injury, 29 (72.5%) patients sustained injury during the day, 11 (27.5%) at night. Most of injuries occurred at home (57.3%). Three cases were of sexual assault, rest had sustained unintentional injuries. Most common mode of injury was fall from height (22) followed by road traffic accident (15) [Table 1]. Accidental fall from bicycle 7 (%) was responsible for the majority of road traffic accidents, followed by motorcycle injury (28.8%) patients. Most patients 36 (90%) in this study sustained blunt injuries. The vast majority of patients 24 (60%) reported after 24 hours of injury. In this study, only 11 (27.5%) patients received pre- hospital care. The majority of 35 (87.5%) were brought in by relatives/ friends and three were brought by relatives. The means of transport from the site of injury to hospital in the majority of patients was private transport in 30 (75%), public transport in 6 (15%) and motor- cycle in 4 (10%) patients. 33 (82.5%) patients had multiple injuries while isolated injuries occurred in 7 (17.5%) patients. Abdominal injuries were most common followed by, musculoskeletal (extremities). According to Paediatric Trauma Score (KTS), the majority of patients sustained Moderate injuries (PTS = 6-8) 27(67.5%), severe injuries (PTS = 0-5) in 7 (17.5%) patients and mild injuries (PTS = 9-12) were recorded in 6 (15.0%) patients respectively. The PTS ranged from 5 to12 with a median of 9.0. A total of 26 (65%) patients were admitted in the paediatric surgical wards and the remaining 14 (35%) patients were admitted to the intensive care unit (ICU). 27 (67.5%) patients were managed surgically while 13 patents had conservative management Table 2. 15 (37.5 %) patients had different complications. Wound sepsis was the most common complications in 11 (27.5%) patients followed by pneumonia in 6 (15%) patients [Table 3].

Table 1 Distribution of patients according to the circumstances and characteristic of injury

Variables	Number of patients	Percentage
Gender Distribution		
Male	26	65%
Female	14	35%
Cause of injury		
RTA	22	55%
Falls	15	37.5%
Assaults	3	7.5%
Mechanism of injury		
Blunt	36	90%
Penetrating	4	10%
Arrival time		
?24 hrs	16	40%
>24 hrs	24	60%
Body region affected		
Isolated		
Chest	3	7.5%
Abdomen/pelvic	4	10%
Multiple body part	33	82.5%
PTS		
Mild	6	15%
Mode	27	67.5%
Severe	7	17.5%

Table 2. Distribution of patients according to surgical procedure performed

Variables	Number of patients	Percentage
Laparotomy	20	74%
Tube Thracocentesis	3	7.5%
Thoracotomy	1	2.5%
Perineal repair	3	7.5%

Table 3. Complications

Variables	Number of patients	Percentage
Wound Sepsis	11	45.8%
Pneumonia	6	25%
Burst abdomen	5	20%
Anastomotic leak	2	5%

Discussion

High incidence of injuries in paediatric age group reflects lack of coordination and unawareness of dangerous substances among children. Further Children have a unique profile of risks for injuries because they are unable to recognize and avoid many potential risks on their own [7, 8].

Studies have shown that male children are more prone for trauma than their female counterparts [9]. The reasons for the male preponderance may be attributed to the overactive nature of male children as compared to the females. In our study also, males were more affected than females with a male to female ratio of 1.8:1 which is in agreement with other studies.

In our study most children sustained injuries in day time. Children of school going age group usually involved in road traffic accidents. These school-age group children are usually very active and are often less supervised than pre-school age children. Further lack of strict traffic norms in developing areas of our country are making them more susceptible to such events. In this study, the peak age incidence was 6-8 years which is in agreement with other studies done elsewhere [9,10].

Fig 1

Case of sexual assault with grade 4 perineal tear

Fig 2

Fig 2: Motor machine belt entrapment injury

Fig 3

Fig 3: Traumatic jejunal perforation

Special group of patients with sexual assault ranged from age 4-5 years. We have seen 3 such cases in our study period. In all cases patients were female child belonging to very poor family, living in shared common houses with culprits being known to parents

and child. All cases had grade 4 perineal tear [Fig 1]. Most studies have not reported incidence of such injuries in children. The studies may actually have underestimated the magnitude of such problem because many cases are not reported for fear of legal involvement. Therefore, paediatric forensic examination should be performed if a child is likely to suffer from abuse, neglect or intentional injury.

Other special subgroup of children sustained injuries form entrapment into belt of open motor engines used in fields. All cases were observed during local harvesting season. Three children (2 boys, 1 girl) sustained belt entrapment injuries. The mean age was 4.2 years (range: 4-5 years). All injuries occurred outside home. In 2 cases children were trapped by their clothes and in one case by her hair when adults were in field for farming purposes. One case had scalp avulsion. One case had upper torso injury with hemopneumothorax with dorsal spinal fracture with paraplegia. One case had bilateral foot involvement with vascular injury. One patient had fatal outcome, one had to undergo below knee amputation [Fig 2]. The majority of paediatric injury in this study occurred at home, which is in agreement with other studies done elsewhere [11, 12].

Most studies have reported road traffic accidents as the commonest cause of blunt paediatric injuries in most studies [13]. In our study most common mode of injury was fall from height. Few other studies from developing countries have also reported fall from height as the most common cause of paediatric injuries [13]. This may be explained from the environmental exposure to children in developing countries compared to developed countries. Most houses are without any barricading on roof precipitating fall. There is less traffic and motor vehicle movement in the vicinity of the houses of accident victims as compared to developed countries.

With improving road conditions, overloading of commuter vehicles, lower maintenance of vehicles and weak traffic laws we may see road traffic accidents as major cause of injuries in future. Waiting time for treatment in emergency departments may be attributable to many factors and may stretch up to three hours before completion of all necessary procedures, even in developed countries [14]. The specialized setup of trauma centre enabled us to attend most of the patient within first few minutes of patient reaching to trauma centre under strict ATLS protocol. This is one of the most important advantages of having a dedicated trauma facility.

A number of scoring systems have been developed to facilitate consistent trauma triage, severity evaluation, management and prognostication [15]. Paediatric Trauma Score (PTS) is one of trauma scores designed to accurately assess injury severity and extent of injury, aid with the prediction of survival and subsequent morbidity [15]. We have been using PTS to assess all patients at time of presentation to trauma centre. The PTS is calculated as the sum of individual scores from six clinical variables including weight, airway, systolic blood pressure (SBP), central nervous system (CNS) status (level of consciousness), presence of an open wound, and skeletal injuries [16, 17]. According to Paediatric Trauma Score (PTS), the majority of patients in this study sustained moderate injuries. Long term studies are required to assess the impact of such scoring systems in our setup.

Most patients in our study sustained blunt trauma in agreement to other studies. Most patients with blunt trauma were successfully managed conservatively. Most common surgical procedure performed was laparotomy followed by tube thracocentesis. Most common indication for laparotomy was intestinal perforation [Fig 3]. In present study chest injury was most common associated injury with abdominal injuries which was comparable with other studies [2]. It is known that associated injuries can mask abdominal injuries and therefore it is very essential to have a high of index of suspicion in such cases. Careful Clinical examination is less reliable for some injuries, but routinely done as part of the initial assessment. Studies have reported 60-80 of the BAT cases are managed non-operatively [2]. In our study 27 (67.5%) patients were managed surgically while 13 patents had conservative management and were successful in all these cases. High percentage of cases with operative intervention may be explained as no trauma care facility for children in nearby region with all referrals to our centre.

Conclusion

Paediatric trauma is a major cause of morbidity and mortality in developing countries. Sexual assault and injuries in farm to unattended children are important increasing mode of trauma in children. Legislation regarding safe housing, traffic rules and use of farming machines with proper safety precautions are important for preventing such trauma. Dedicated paediatric trauma centre are need of hour for managing these children.

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Original Article

Efficacy Of In Situ Shock Wave Lithoripsy In Supine Position With Dornier Compact Sigma For Treatment Of Mid Ureteric Calculus

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ABSTRACT
Ever since its introduction into clinical practice, extra corporeal shock wave lithotripsy (SWL) has become one of the primary treatment modality for urinary tract stone disease. Its efficiency has been further enhanced with its technological advancement and design. Mid ureter is the portion of the ureter that extends from the proximal to distal portion of the sacroiliac joint. Special anatomic configuration of mid-ureter has made endourological intervention for stone disease a challenge. For successful outcome of intervention for stone in mid-ureter ureteroscopic lithotripsy and shock wave lithotripsy in prone position is advocated. We report here our experience with Dornier compact sigma for in-situ shock wave lithotripsy for single previously untreated mid-ureteric stone in supine position. Between May 2013 & February 2014 a total of 32 consecutive patients with mid-ureteric calculus were subjected to in-situ shock wave lithotripsy in supine position using the Dornier Lithotripter Compact Sigma on an outpatient basis. The patients were evaluated with urine culture, coagulation profiles, renal function test, ultrasonography and intravenous urography. Stones more than 15 mm, gross hydronephrosis and those with poor excretion of contrast in IVU and renal function impairment were excluded from the study. The success was defined as complete stone clearance at 3 months after the initiation of shock wave therapy. The stone clearance rate, number of shockwave lithotripsy sessions and procedure related adverse events were recorded. It is observed that SWL in supine position is a feasible option for select cases of mid-ureteric stone with a success rate of 96.87%.

Key Words : *Shock Wave Lithoripsy; mid ureteric calculus; Dornier Lithotripter; ureteroscopic lithotripsy; electromagnetic shock wave.*

Introduction :

Ever since its introduction into clinical practice, extra corporeal shock wave lithotripsy (SWL) has become one of the primary treatment modality for urinary tract stone disease. Its efficiency has been further enhanced with its technological advancement and design, thereby making it a feasible option for anatomically difficult stone location, like mid ureter.

Mid ureter is the portion of the ureter that extends from the proximal to distal portion of the sacroiliac joint.

Special anatomic configuration of this portion of the ureter has made endourological intervention for stone disease a challenging one. For successful outcome of intervention for stone in mid ureter ureteroscopic lithotripsy and shock wave lithotripsy in prone position is advocated. We report here our experience with Dornier compact sigma for in situ shock

wave lithotripsy for single previously untreated mid ureteric stone in supine position.

Dornier compact sigma is a highly unique shock wave system, which is fitted with many advanced features. Sleek, ergonomic design, a flexible over and under table therapy head, proven 140 mm electromagnetic shock wave source, motorized, multifunctional relax patient table and dual imaging system makes it the best state of the art shock wave system. Isicentric design allows both shockwaves and imaging system to revolve around the focal point. The multifunctional patient table together with the dual imaging system facilitates stone treatment at any location, in the supine position.

Materials and methods :

Between May 2013 & February 2014 a total of 32 consecutive patients with mid ureteric calculus were subjected for in situ shock wave lithotripsy in supine position using the Dornier Lithotriptor Compact Sigma on an outpatient basis. The patients were evaluated with urine culture, coagulation profiles, renal function test, ultrasonography and intravenous urography. Stones more than 15 mm, gross hydronephrosis and those with poor excretion of contrast on IVU and renal function impairment were not considered for shock wave lithotripsy. The stone size was determined by the widest diameters on plain X-ray KUB. Both fluoroscopy and ultrasound was used to locate the stones during the procedure. No medical expulsive therapy or prior ureteral stenting was used in our study. The success was defined as complete stone clearance at 3 months after the initiation of therapy. The clearance was ascertained by X-Ray KUB at 1 month and NCCT KUB at 3 months. The stone clearance rate, number of shockwave lithotripsy sessions and procedure related adverse events were recorded.

Results and observation :

The age ranged from 18 to 51 years with a mean age of 34.2 years. There were 19 males and 13 female patients. 20 stones were located on the right side while 12 stones were on the left side. There was no problem in localizing the stones in supine position. 9 stones were located at S1, 10 at S2, 9 at S3 and 4 at S4 level. The size of the stones ranged from 6mm to 15 mm (Mean size 10.6mm).

In 17 cases stones were less than or equal to 10 mm and in 15 stones were more than 10mm.

Of 32 patients subjected to shock wave lithotripsy, the number of shock waves given at initial session varies between 1500- 3000 shock waves at 60shocks / min. All tolerated the procedure well, except 1 patient who had episodic colic within 12 hours of the procedure. There was no macroscopic hematuria or fever. Complete stone clearance at one month (after first session) was achieved in 26 cases (81.25%), at two months (after second session) in another 4 patients and at 3 months(following third session) in the another 1 case and one case required ureteroscopic intervention for clearance of residual lower ureteric fragment after three sessions of SWL (Table 1).

The number of shock waves in the first session was 1500-3000 and in subsequent sessions ranged from 2000 to 2500 at 60 shocks / min. The stone fragments retrieved by the patients were routinely sent for analysis. The stone composition of our series is depicted in Table 2.

In our study, we have a clearance rate of 81.25% following the first session and 96.87% clearance after three sessions.

Table 1: Clearance rate Versus Treatment session

TOTAL NO. OF CASES - 32	
SWL Session	No. of Cases (%)
After 1st session	26 (81.25%)
After 2nd session	4 (12.5%)
After 3nd session	1 (3.125%)

*1 patient required ureteroscopic intervention for clearance of residual lower ureteric stone fragment on left side after three sessions.

Table 2: Composition of stones

Calcium Oxalate Monohydrate	3
Calcium oxalate dehydrate	21
Calcium phosphate	7
Uric acid	1

Discussion :

In situ ESWL has been shown to be effective for ureteric stones at all levels [1 & 2] .Stone clearance after SWL can vary and is influenced by stone size, location, chemical composition and type of lithotripter. Stones located in the bony pelvis were not originally amenable to shock wave lithotripsy. However, some modifications in patient positioning, such as placement in the prone position, allowed for successful fragmentation [3]. Successful shockwave lithotripsy is usually defined as being stone free, three months after initiation of therapy.

Residual fragments larger than 5 mm in diameter are generally considered as a failure of the shock wave lithotripsy.

Supine shock wave lithotripsy is effective in the treatment of stones in mid ureter as well as those in upper and lower ureter. Supine positioning is cost effective [4], and has low morbidity [5], while prone position carries the risk of small intestinal perforation [6]. Some author's still favor prone position [3, 7, 8]; while some are of the view that shockwave lithotripsy in the prone position should be considered for patients with calculi in the middle third of the ureter before invasive techniques are advocated [9].

Ruckdeschel et al. in a study of 60 patients observed that shockwave lithotripsy for mid ureteric stones has comparable efficacy as in upper and lower ureter [10] . Shockwave lithotripsy is considered as a noninvasive, simple and safe option for the management of mid- ureteric calculi with a success rate of 90%[11]. In a study of thirteen patients with mid-ureteric stones treated with SWL overall clearance rate was 92.3% [12]. However, Rauchenwald in a study in 83 patients has reported that of 4 patients with mid ureteral calculi only 2 could be rendered stone free by shockwave lithotripsy alone[13].

A multicentre study in 981 patients with renal and ureteral stones with Dornier MFL-5000 has found that the overall stone-free rate at follow up of approximately 90 days was greater in the middle and lower ureter group (83%) than in the kidney and upper ureter group (67%). However, a larger proportion (18%) of the middle and lower ureter group required 2 or more treatment sessions to the targeted stone than the kidney and upper ureter group (13%). The results of this clinical evaluation highlighted greater effectiveness of shock wave lithotripsy for the specified situation for stones in the ureter below the upper rim of the bony pelvis, as opposed to those in the kidney and upper ureter, with a low incidence of complications and side effects [14].

Although, it is difficult to localize the mid ureteral stone by fluoroscopy, ultrasound often helps in such difficult situations. Lee Gil Ho and Kim Hong-Kook reported successful localization of mid ureteric stones in 95.2 % patients by ultrasound [15].

In a study conducted to evaluate the efficacy of in situ extracorporeal shock wave lithotripsy for ureteric stones using the Dornier MFL 5000 lithotripter, the authors reported an overall success rate of 77% (77% for upper, 69% for middle, and 81% for lower ureteric stones) and the size of the stones affected the final outcome significantly [16].

In another study from Japan, the stone-free rate of middle ureteral stones was 86.2%. The authors concluded that shock wave lithotripsy is equally useful for middle and lower ureteral stones [17].

For large size ureteric stones a boosted, stentless, ventral shockwave lithotripsy using Siemens lithostar for in situ middle and lower ureteric stones gave good results with short time clearance of 98% by six weeks and without unusual side effects. The authors recommended shock wave lithotripsy as the initial modality for middle and lower ureteric stones especially when they are larger than average size [18].

In a Korean study, out of 70 patients with stones in the middle third of the ureter, shockwave lithotripsy provided satisfactory success rate with overall stone free rate of 88.7% [19].

Another Korean study highlighted a clearance rate of 97.9% for mid ureteral stones amongst 96 patients (stone size 10-23mm) at 3 months after initiation of therapy and advocated in-situ shockwave lithotripsy, using an ultrasonographic localization system, as a non- invasive and effective modality [20]. Halchami and colleague reported a success rate of 93.6% for shock wave lithotripsy in mid ureteral stones [21].

Coz et al. described 82.4% success rate of SWL for mid ureteric stone using Modulith SL-20 (Storz Medical) among 2016 patients evaluating success and failure based on size and location of the stone [22].

In a comparative study to ascertain the role of diuretics in facilitating stone passage after SWL, with Simons Lithostar plus machine in prone position , Zomorrodi et al. has reported 68.2 % and 88.4 % clearance rate among those without and with diuretic therapy respectively. They further observed that fragmentation was 18.8% more amongst patients with mid ureteric stone treated with diuretics [23].

In a study among 28 patients with mid ureteric stone, Ghalayini et al. has observed 75% success rate for treatment of mid ureteric stone using Dornier Lithotripter S in emergency setting in prone position. Only 6 (21.4%) of their patients failed SWL. Of the patients with desirable fragmentation, 2 needed Ureteroscopic intervention for removal of residual fragments [24].

Singh et al has observed that clearance of smaller (5-10mm) and larger (10mm) calculi at mid ureter following SWL are not statistically different. However, majority of mid ureteric stone clearance achieved after 3 sittings. The clearance rate for 5-10mm stone was 73%, and for 10-20mm was 77% respectively. They reported

an overall clearance rate of 77% for mid ureteric stone (5-20mm) among 48 patients using Dornier lithotripter [25].

In a meta-analysis of 570 patients with ureteral stone undergoing immediate SWL, Picozzi et al. has reported 78% (69 - 88 %) stone free rate of Shock wave lithotripsy for mid ureteric stone. They further opined that immediate SWL for stone induced acute colic is reasonably safe with high success rate.[26]

Using Dornier S II lithotripter to treat 47 patients with mid ureteric stone, either in prone or supine position, Elkholy et al. reported 95.7% success rate. Ureteric colic was the most common complication observed in their study [27].

Our clearance rate of 96.87 % for shockwave lithotripsy in mid ureteral stone is comparable to other studies reported in the literature (Table 3).

Some authors tried lithotripsy with prior stenting without any beneficial effect in comparison to non-stented procedures.

Table 3: Comparative study of outcome of SWL in mid ureter.

SERIES	LITHOTRIPTOR	NO. OF PATIENTS	SUCCESS RATE (%)
(13)Rauchenwald M. et al, 1992	Dornier MPL-900X	60	95%
(16) KH Yip et al. 1995	Dormier MFL	16	69%
(12) Ghafoor M. et al. 2002	Siemens Lithostar II PLUS	13	92.3%
(19) Young SJ et al 2003	Storz Modulith	62	88.7%
(20) Jung IH et al. 2003	Sonoline SL-1	94	95.8%
(35) Khalek AM et al.1998	Dornier MFL-5000	268	82.7%
(21) Halachmi S et al. 2005	Dornier HM-3	112	93.5%
(36) Salman M et al. 2007	Storz SL-20	40	70%
(37) Kawano A M et al.2008	Dornier compact delta	157	97.5%
(24)Ibrahin F Ghalayini et al	Dornier Lithotripter S	28	75%
(25)Onkar Singh et al. (2010)	Dornier lithotripter	48	77%
(27)Mohamed M. Elkholy et al (2014)	Dornier S II lithotripter	47	95.7%
PRESENT SERIES	Dornier compact sigma	32	96.87%

In the present series pre shockwave lithotripsy stenting was not considered as it does not provide any additional advantage over in situ shock wave lithotripsy nor does it affect the stone free rate even in the presence of moderate to severe hydro-ureteronephrosis [28,29].

In order to ascertain whether insertion of a stent improves the outcome of middle ureteral stones clearance following SWL in thirty-three patients, Nakada and colleagues observed that the overall stone-free rate for shockwave lithotripsy alone was 73% and the efficiency quotient was 69. The stone free rates after a single treatment for the stented, non-stented and PCN groups were 71%, 63%, and 75%, respectively. Overall, 4% of patients required re-treatment; 19% patients required an auxiliary procedure, and 8% required re-admissions for colic. For stones 10 mm or greater, clearance rate after single session in stented, non-stented, and PCN groups were 33%, 33%, and 67%, respectively; for stones less than 10 mm, success rates were 82%, 80%, and 100%, respectively. The authors concluded that pre-treatment stenting provided no additional advantage over non-stented shockwave lithotripsy for middle ureteral calculi [30].

However, Hofbauer et al. were in favor of ureteroscopic management for mid ureteral calculus considering the difficulty in focusing the stone during shockwave lithotripsy [31].

The best available treatment modality for ureteral stones, particularly mid and distal ureteral stones, is still a matter of great controversy among the urologists. The possibility of performing treatment without anesthesia, the absence of major complications and the high proportion of success make SWL, particularly the in situ procedure, the treatment of choice for ureteral stones. Some authors have proposed Ureterorenoscopy as the first treatment modality for mid and lower ureteral stones, which are difficult to localize during lithotripsy. Although this method is very efficacious the percentage of complications is higher and patient compliance is less [32].

Shockwave lithotripsy should be considered the first-line treatment for ureteric stones because of its non-invasiveness, no requirement for general anesthesia and low complication rate [33]. Extracorporeal shockwave lithotripsy remains the first-line treatment for ureteric stones regardless of their site with better results for radio opaque stones less than 1 cm in diameter [34].

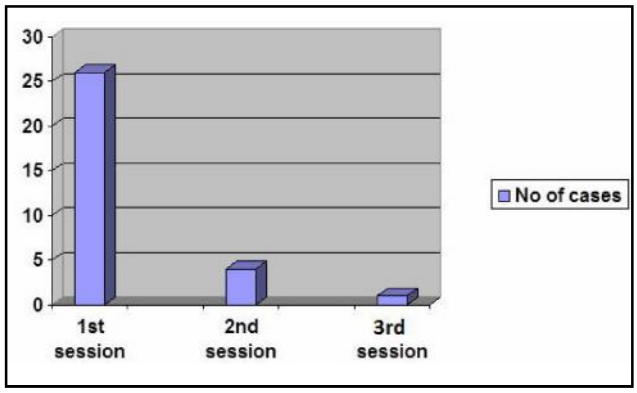

Figure 1: Stone clearance rate after SWL sessions

It was observed that the site and transverse diameter of the stone and the presence of a ureteral stent are the only significant predictors of success of shockwave lithotripsy therapy for ureteric stones [35] [36]. Recent studies have shown that only the stone length maintained a statistically significant impact in multivariate analysis. However, in mid and distal ureteral stones, the stone free rate was higher than that of proximal stones (97.5% vs. 92.6 %,) and not affected by stone length [37].

The safety of SWL is demonstrated by a low overall rate of complications during and after treatment. A study had observed 2.5% ureteral obstruction and 4% incidence of rise in diastolic blood pressure after shock wave lithotripsy [14].

Complete clearance can be achieved in mid ureteral stones without any complications [10]. Transient gross hematuria, colicky pain, nausea and vomiting, and steinstrasse, may develop and usually recover spontaneously without any specific management [15]. Only one patient in our study suffered post treatment ureteric colic, which was relieved with antispasmodic analgesic. Recent studies have reported 2.4% and 3% complication rate respectively with shockwave lithotripsy [33, 36] while 6% complications were encountered during ureteroscopic interventions [31].

Rate of major auxiliary interventions ranged from 15-20% in earlier studies [15, 30] following shockwave lithotripsy, which is much higher in comparison with the modern modified shockwave generators with dual focusing system. Only one patient in the present study required auxiliary intervention for clearing a residual fragment.

The present study evaluated the effect of stone composition in the outcome of treatment. It revealed that stone composition does not have any bearing on the outcome of SWL in mid ureteric stones.

Conclusion :

Supine SWL for mid ureteric calculi with Dornier compact sigma is a feasible and effective option with a stone clearance rate of 81.25% after single session and 96.87% after three sessions. Easy maneuverability of the focusing object and simultaneous availability of dual imaging with ultrasound and fluoroscopy has made shockwave lithotripsy an effective modality for mid ureteric stones with satisfactory fragmentation and clearance. Extracorporeal shock wave lithotripsy with the third generation machine achieved an excellent stone free rate with a relatively small number of treatment sessions.

Conflict of Interest :

No financial interest or any conflict of interest exists.

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Original Article

SHORT-TERM RESULTS OF A NOVEL MODIFICATION OF WEAVER DUNN PROCEDURE IN CHRONIC SYMPTOMATIC ACROMIO-CLAVICULAR DISLOCATION - A PROSPECTIVE STUDY OF ELEVEN CASES.

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ABSTRACT

Background: acromio-clavicular joint dislocations are mostly seen in young active individuals. A common attribute of these cases is the lingering disability and pain that often follows. Management of these chronic symptomatic cases are surrounded by controversies owing to availability of multitude of treatment options and inability of a single technique to consistently give superior results over others. We carried out a prospective study involving a novel technique for addressing such cases.

Materials & methods: Eleven consecutive patients suffering from significant pain and disability from chronic acromio-clavicular dislocation (Rockwood types III-V) were included in the study. All of them underwent the operation, namely the Weaver Dunn technique with the new modification , which consisted of passing the coraco-acromial ligament through a bony tunnel across the clavicle, besides traditional lateral clavicular resection and coraco-clavicular loop reinforcement. Patients were followed up for an average of 8 months.

Results: Mean ASES score improved from 60 6 points preoperatively to 86 7 postoperatively. Mean Constant score improved from 62 5 to 88 6. Both were statistically significant ($p<0.001$). Return to work was possible after an average of 15.5 weeks. Radiologically, the mean coraco-clavicular distance without loading improved significantly ($p<0.001$) from 18 9mm pre-operatively to 11.2 3.8mm post-operatively. With stress loading the corresponding preoperative and post-operative figures were 23 7mm and 12 7mm.

Conclusion: This novel modification of Weaver-Dunn surgery holds good promise for chronic symptomatic acromio-clavicular dislocations with good short term results.

Key Words : *Acromio-clavicular joint; Constant Score; Modified Weaver Dunn Procedure; American Shoulder & Elbow Surgeons (ASES) Score.*

Introduction :

Acromio-clavicular joint disruption has always been a subject of attention and controversy since the earliest days of medical science. Hippocrates himself stated that no impediment, small or large would result from such an injury [1]. At the same time he also said that there would be a "tumefication" or deformity in "the bone which cannot be restored to its normal anatomy". While lower grades of injury, viz. Types I and II as described by Rockwood, heal with conservative treatment [2], the higher ones i.e. from III to VI often at best heal only partially, with frequent long term disability.

Operative intervention is often the only resort, especially in upper limb dominant individuals. The deformity can be addressed by repair of the torn ligments, their replacement by adjoining ones or by tendon transfers. While in acute set up, repair of the torn ligaments is relatively feasible, in long standing symptomatic cases with history of trauma, the torn ligaments are not easy to find and repair because of resorption, atrophy and fibrosis [1,3]. The resection of the distal end of the clavicle along with transposition of the coraco-acromial ligament which survives the trauma, to the lateral end of the clavicle provides satisfactory solution to the dual problem of pain and instability. This is the Weaver Dunn Procedure which has been used extensively with good results for last four decades. However, failure of the transposed ligament resulting in recurrence of the deformity is one of the common compilations. Various modifications have been described for overcoming its drawbacks. We devised a novel modification of passing the coraco-acromial ligament through the clavicle instead of introducing it into the clavicle to ensure its greater stability and survival. The new modification so invented was analysed for its early outcomes in the present prospective study.

Materials and Methods :

We took a cohort of eleven consecutive patients (mean age 29 10.2 years) with painful, chronic Rockwood type III through V acromio-clavicular joint dislocations who presented to us between May, 2014 to January, 2015. Each of those who were included suffered from a painful acromio-clavicular joint of traumatic etiology at least three months prior to presentation which resulted in significant upper limb disability. The patients who had only pain and no deformity were excluded. Also the patients with persistent subluxation but without symptoms were not included in the study. Pain or shoulder stiffness from any etiology other than acromio-clavicular dislocation also did not qualify for the study. For radiological evaluation, normal as well as stress radiographs were taken and compared with the contralateral normal side. After preoperative check-up and informed written consent, the patients were taken for surgery .The Weaver Dunn procedure with the novel modification was performed under general anaesthesia. The patient was placed supine. The skin incision, the so-called "Strap incision" was made from the posterior border of the acromio-clavicular joint toward the coracoid process. The deltoid was detached from the outer third of the clavicle. After the exposure of acromio-clavicular joint, the articular cartilage, meniscus, joint capsule along with a conservative resection of the lateral end of the clavicle was done. The coraco-acromial ligament was detached from the acromial end and the girth of the ligament was measured. A bony tunnel was made by drilling across the clavicle from superior to inferior, approximately 35 mm from the lateral end of the clavicle to correspond to the attachment of coraco-clavicular ligament as anatomically as possible. The circumference of the tunnel was essentially of approximate girth of the coraco-acromial ligament. Next, modified Krackow's suture was passed along the ligament with size 2 Ethibond sutures. The ligament was passed through the tunnel using the Ethibond sutures for pulling through. After reducing the displaced clavicle, the two ends of the Krackow's sutures were passed around the clavicle one from the anterior and the other from the posterior side, encircled once again to make two loops and tied together to ensure a secure hold with the clavicle (Fig. 1).

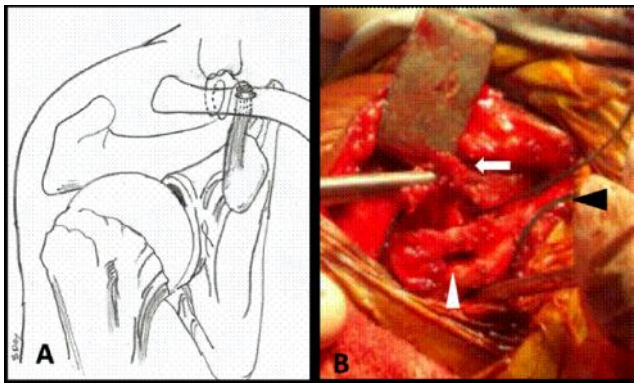

Fig 1

Schematic representation of the procedure. The Coraco-acromial ligament is seen inside the bony tunnel created through the clavicle. The ethibond sutures fixed to the free end of the ligament is tied together after making two loops around the clavicle. B) Intra-operative Photograph. A bony tunnel has been drilled in the cavicle (white arrowhead) corresponding to the corac-acromial ligament (white arrow). Loop of Ethibond is seen to encircle the clavicle and the coracoids (black arrowhead).

To protect the reconstruction from disruptive stresses till sufficient healing had occurred, one or two loops of no. 5 Ethibond sutures were passed underneath the coracoid process and looped around the clavicle and intra-operative stability was checked. To have uniformity, the same approach with similar incisions and steps were followed in each of the cases.

Post-operatively, pendulum exercises three times a day were started immediately. The patients were informed that their limb would be in an arm pouch

support for 6 weeks. Between six to twelve weeks, supervised therapy consisting of assisted range of movement in all planes was started and sling was progressively discontinued. Between 12-24 weeks isometric exercises were initiated. Contact sports and heavy activity was allowed six months after the surgery.

Clinical evaluation was performed using the American Shoulder and Elbow Surgeons shoulder score and the Constant score after a mean follow-up of two years. Pain was assessed using Visual Analogue Scale. Preoperative and postoperative radiographs in both resting state and also in stress-loaded state were compared (Fig 2).

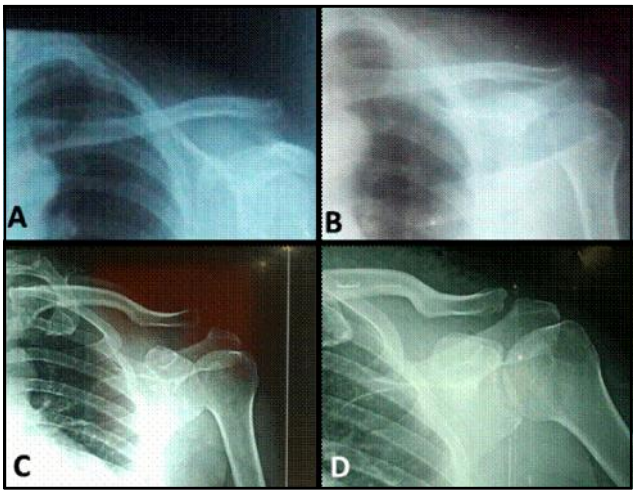

Fig: 2.

A & B : Pre- and Post-operative radiographs of a 34 year old male showing reduction of the dislocation. C & D: Pre- and Post-operative radiographs of a 27 year old male.

For statistical analysis, Paired T-tests, Student T-test and Chi-square tests were performed. The statistical significance was set at 99% confidence level (p value=0.01 or less).

Table:1

Characteristics of the Total Patient Group (n = 11)

Characteristic	Value
Age (in years)	29±10.2
Sex (M : F)	9:2
Time since trauma (in weeks)	17.45±5.05
Rockwood Type	
III	7
IV	2
V	2
Occupation	
Recreational Athlete	7
Manual Labourer	2
Sedentary	2

Results :

The mean age in the study cohort was 29 10.2 years (Table 1). Males out-numbered females (9 to 2). The mean follow-up period was 8 2.1 months.

Mean American Shoulder and Elbow Surgeons shoulder score improved from 60 6 points preoperatively to 86 7 postoperatively (Table 2). Mean Constant score improved from 62 5 to 88 6. Before surgery the radiologic measurements showed a mean coraco-clavicular distance18 9mm pre-operatively to 11.2 3.8mm post-operatively. With stress loading the corresponding preoperative and post-operative figures were 23 7mm and 12 7mm. The differences before and after the operation both with and without stress-loading were statistically significant (P<0.001 in each case). The pain scores in terms of Visual analogue scale improved significantly (p<0.0001) from 3.1 ± 1.5cm before the procedure to 1.0±0.9cm at 6 months.

Table 2

Mean improvement of Radiological & Clinical Outcomes

Data	Mean ± SD	
	Preoperative	Postoperative at 6 months
Pain –VAS (cm)	3.1 ± 1.5	1.0±0.9
ASES Score (points)	60±6	86±7
Constant Score (points)	62±5	88±6
Acromio-clavicular distance (mm) Resting	18±9	11.2±3.8
Acromio-clavicular distance (mm) Stress view	23±7	12±7

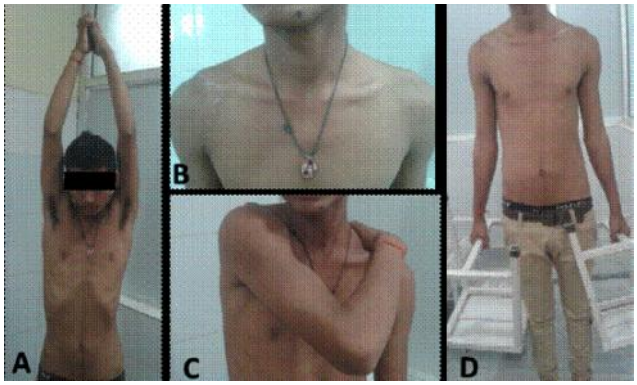

Fig: 3.

Post-operative clinical photographs A) range of abduction B) without loading C) adduction and internal rotation D) appearance on lifting weight 6 months after the surgery.

There were no failures or re-dislocations in the series. There was no failure of the fixation or the suture loops or cut-through of the sutures across the clavicle. All the patients went back to their normal activities including recreational sports (Fig. 3). The average period from surgery to return to work was 15.5 9 weeks.

DISCUSSION:

There has been a great controversy in the literature regarding management of the acromio-clavicular joint dislocations [4,5]. Despite a multitude of treatment options, many patients suffer from chronic pain and disability resulting from acromio-clavicular joint instability resulting from trauma. In a few cases even impingement and rotator cuff tear can occur due to an improperly managed acromio-clavicular joint injury. Weaver and Dunn [6] described a procedure for the treatment of unstable acromio-clavicular joints which involved the excision of the painful acromio-clavicular joint by resecting the lateral end of the clavicle and the stabilization of the clavicle by transposing the coraco-acromial ligament to the lateral part of the clavicle to substitute for the torn coraco-clavicular ligaments. Soon, Bircher et al came up with the modification of the procedure by reinforcing the ligamentous reconstruction by passing a non-absorbable sling around the coracoid process and the clavicle and transposing a flake of bone attached to the ligament so that better incorporation of the ligament on the clavicle is ensured [1]. This claimed better results because of reasons more than one [4,7-10]. Firstly it protected the transferred ligament until the graft take up and healing was complete. Secondly, being non-absorbable, it shared the load in cases of excessive strain, as it is found that the coraco-acromial ligament in a few cases is of thinner calibre compared to patients own coraco-clavicular ligaments. But as the length of the coraco-acromial ligament is more than the coraco-colavicular ligament, end to end attachment of the former to the clavicle is bound to leave some laxity. To prevent this, the ligament with the bony chip has to be inserted deep into the medullary canal of the clavicle to produce sufficient tension. But that modification is technically difficult as the clavicle is known to possess no well defined medullary cavity. Excessive effort to push the bony chip deep often ends up with its fragmentation [12]. This novel modification as described above has been devised to tide over this difficulty. The striking success rate in prevention of recurrence of the deformity and suture loop related complications lies in the placement and fixation of the coraco-acromial ligament in the clavicle without any residual laxity [13]. Even if the Ethibond loops are placed around the coracoid and the clavicle, and the reinforcement makes it appear acceptable; be it intra-operatively or in the clinico-radiological evaluation immediately after the surgery, in the long run it is liable to failure in the form of severance of the suture or cutting of the suture through the clavicle. This is obvious, as any mechanical reinforcement will fail unless the biological healing fails to support it in the long run. A taut coraco-acromial ligament attached to the clavicle facilitates healing of all structures around the surgical site, without any stress to the suture reinforcement thereby minimising the chances of failure. To the best of our knowledge, such modification has not been described before in the literature. This technique also has the potential to be used arthroscopically. Yet another advantage of such a technique is that, the donor site morbidity encountered in case of reconstruction procedures with semitendinosus graft can be avoided.

In our study, the majority of the population consisted of young active males, amongst whom 63.6%(n=7) were recreational athletes and 18.2% (n=2) manual labourers. Most of them had significant disability at presentation (mean ASES score of 60 6). Enabling all of them to return to full activity reflects the reproducible success of the procedure. Radiological improvement especially the stability in the stress radiographs substantiates the clinical success.

In the present study the major limitations were small number of patients and the short duration of mean follow up. A longer period is required as many of the functional results and complications like suture cut-through, and clavicular osteolysis, described as late complications remains to be assessed. However this can serve as a prototype for future studies involving larger cohort and longer duration of follow-up.

Though we did not encounter any complications in our series, some complications common to all surgeries involving the acromio-clavicular joint can occur. The pain and disability may persist despite surgical treatment, probably because of inadequate resection of the AC joint. The bones being subcutaneous in location, the surgical wound may show problems in healing, with resultant skin sloughing. Though there were no infections in the present study, it can be a complication in such surgeries and can be a potential reason for poor outcomes.

Conclusion :

It can thus be concluded that this new modification of Weaver Dunn procedure has demonstrated promising short term results with excellent clinical and radiological outcomes in cases of chronic symptomatic acromio-clavicular joint dislocations. The short-comings of traditional Weaver Dunn procedure have been optimally addressed by this innovative technique. The need for robust studies with larger sample size is imperative to explore this technique to its entirety.

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Original Article

Video assisted anal fistula treatment (VAAFT): Our experience

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ABSTRACT
Video-assisted anal fistula treatment (VAAFT) is a minimally invasive and sphinc-ter-saving technique for treating complex fistula. The aim of this study is to de-scribe the procedural steps and results of VAAFT at Swagat Endo-laparoscopic Sur-gical Research Institute.
Methods:
Karl Storz Video endovision system and VAAFT equipment is used. Key steps are visualization of the fistula tract using the fistuloscope, correct localization of the internal fistula opening under direct vision, endoscopic treatment of the fistula and closure of the internal opening using a stapler or cutaneous mucosal flap. Di-agnostic fistuloscopy under irrigation is followed by an operative phase of fulgura-tion of the fistula tract, closure of the internal opening and suture reinforcement with cyanoacrylate.
Results:
From September 2011 to September 2014, we operated on 105 patients using VAAFT. 84 patients were followed up for a minimum of 6 months. No major com-plications occurred. Post operative pain scoring using the visual analog scale (VAS) showed a mean value of 4.2 on the morning after surgery, which further reduced to a mean of 1.9 at the time of discharge after 48 hours. Primary healing was achieved in 73 patients (86.9%) within 3 months of the operation. The percentage of the patients healed after 1 year was 91.7%.
Conclusions:
The advantage of VAAFT technique is that the procedure is performed entirely un-der direct endoluminal vision. Fistuloscopy helps to identify secondary tracts or chronic abscesses. It is sphincter saving, and the surgical wounds are extremely small.

Key Words : *Anal fistula; Fistuloscopy; Video-assisted anal fistula treatment; Complex anal fistula; Sphincter-saving.*

Introduction :

Anal fistulas, especially complex fistulas, have always presented a diagnostic and therapeutic challenge for surgeons. Part of the difficulty in treatment has been due to inaccurate identification of fistula anatomy, including multiple tracts, and more importantly, the internal opening of the fistula, prior to fistula surgery. Tra-ditional methods of treatment such as fistulectomy, use of a cutting seton and fis-tulotomy often compromise internal anal sphincter function, leading to high in-continence rates of almost 12% in simple fistulas and more in complicated cases.1 Moreover, the resulting open wounds take a long time to heal causing pain and dis-comfort to the patients. Subsequent fistula healing rates have also been debat-able,

with some studies showing fistula recurrence rates of almost 25% by these traditional methods.2

As a result of this, there has been a perceptible change in the way surgeons around the world approach anal fistulas, both simple and complex, for treatment. From the once-recommended gold-standard techniques like fistulotomy and fistulec-tomy, attention has now shifted to sphincter saving procedures. Video-assisted anal fistula treatment (VAAFT) developed by Dr. Piercarlo Meinero and his team of proctologists in Genoa, Italy in 2006 is one such technique.[4]

Fig 1: Simple and complex anal fistula

The origins of VAAFT can be attributed to the association of video and surgery in the search of a minimally invasive procedure for fistula treatment. In his pioneer-ing work on VAAFT published in 2011, Dr Meinero has highlighted the principles and technique of his novel procedure, its relative advantages compared to other tradi-tional and modern methods of fistula repair, and at the same time, has also pre-sented the results of his treatment in 136 patients.

The use of metallic probe during the first visit or at the beginning of any operative procedure, along with the accurate identification of the internal opening and the location of possible chronic abscesses or secondary tracks are universally consid-ered the keys to successful anal fistula treatment.3 However, probing in itself is a blind procedure, and carries the risk of creating false tracts and complicating the treatment further. The VAAFT procedure is performed with the use of a fistulo-scope, which allows a search for the correct location of the internal fistula under direct visual guidance, as well as the study of the fistulous path in search of col-lections or accessory paths. Once fistula anatomy has been perfectly ascertained, fulguration of the entire tract is carried out. Like all fistula surgeries, VAAFT aims at a hermetic closure of the internal opening. As all these steps are carried out under visual control, it enables a higher degree of precision and efficacy. More-over, being a minimally invasive procedure, VAAFT does not affect faecal conti-nence.

The results of Dr Meinero's pilot study are very encouraging. Apart from being able to accurately identify fistula anatomy and classify individual anal fistulas, VAAFT resulted in a primary fistula healing rate of 87.1% after 12 months of follow up. During the course of their study, operative time got reduced from 2 hours to 30 minutes as the learning curve improved. There were hardly any post-operative complications, with only 2 patients having brief urinary retention, while there was no reported infection or excessive bleeding. Pain control was good, with the visual analog scale (VAS) showing a mean value of 4.5 after 48 hours of surgery. None of the study patients complained of worsening of faecal continence after surgery, and most were able to return to work within a day or two, with the longest time off work being 3 days.

Based on these encouraging results, we initiated VAAFT at our centre at Swagat Endo-Laparoscopic Surgical Research Institute, Guwahati, India. Here, we present a brief description of the procedural steps of VAAFT, and our initial results in 105 patients of complex anal fistulas.

Materials and methods:

From September 2011 to September 2014, 105 patients with complex anal fistula were managed with this technique at our centre. Our series consisted of 85 males and 20 females, with a median age of 39.5 years (range 2-71 years). Simple fistulas and co-existent pathological conditions like Crohn's disease were excluded from our study.

Fistula anatomy was ascertained based on clinical examination, gentle probing and dye sigmoidoscopy, based on which complex fistulas were identified and operative planning done. By a meticulous clinical examination alone, in most cases, the loca-tion of both the external and the internal openings, and their number, if multiple, could be identified. 21 patients in whom complex fistula was suspected were sub-jected to a confirmatory Magnetic resonance imaging (MRI), while 10 patients came to us with MR testing done prior to referral.

At our centre, dye sigmoidoscopy for identification of the internal opening was done routinely in all patients prior to initiating the procedural steps of VAAFT. This test is carried out by introducing a feeding tube through the external opening, fol-lowed by instillation of methylene blue dye. The spurting of dye through the inter-nal opening is identified by sigmoidoscopy.

For fistula classification, Parks' system was used.5 Routine pre-operative assess-ment was done including blood tests and a chest X-ray.

Steps of VAAFT


Fig

The Video-assisted anal fistula treatment is performed using a kit that includes a fistuloscope (Fig. 2) (Karl Storz, Tuttlingen, Germany), an obturator, a monopolar electrode, an endobrush and an endoscopic forceps. The fistuloscope has a diame-ter of 3.3 to 4.7 mm and length of 18 cm. It has an 8 degree angled eyepiece and is equipped with an optical channel and also a working and irrigation channel. The irrigation channel is connected to a 5,000 ml bag of glycine-mannitol 1% solution.[2]

The patient is placed in the lithotomy position after spinal anaesthesia. Video-assisted anal fistula treatment has two phases, a diagnostic one and an operative one.[2]


Fig 3

Diagnostic phase

At the beginning, the surgeon identifies the external opening of the fistulous tract, following which it is dilated using an artery forceps. Sometimes in difficult cases where there is extensive surrounding fibrosis, to enable better grip over the fistulous tract, cautery dissection around the external opening is done and the opening along with the tract is pulled out. The surgeon then introduces the fistuloscope through the opening under visual control (Fig. 3).

The infusion of glycine-mannitol solution is started, enabling easy dilatation of the channel to facilitate fistuloscope advancement. Better control over this process is attained through the use of a pathfinder, which is a reservoir of the rinsing solu-tion that can be manually compressed aiding delivery of the solution under pres-sure. The solution rinses the fistuloscope, enabling good visualization of the anal fistula lumen. As the fistuloscope is advanced, we can see the fistula pathway clearly on the screen. The entire fistula tract along with all possible branchings or secondary tracts and abscess cavities, if any, are identified. The fistuloscope usu-ally exits through the internal opening, facilitating its identification. Sometimes the internal opening is very narrow and the location of the orifice can only be identified by observing the fistuloscope light behind the rectal mucosa (Fig. 4). Af-ter identifying the internal opening, it is isolated with sutures, still leaving the ori-fice open.

Fig. 4: Localisation of the internal opening under fistuloscope

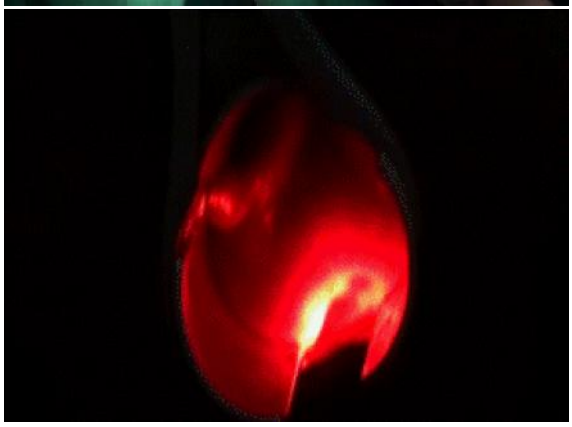
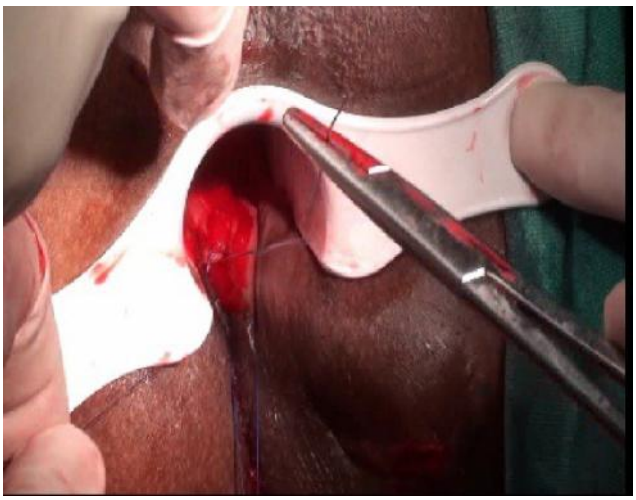



Fig 5

The next therapeutic phase involves destruction of the fistula from the inside by means of fulguration of the wall using the monopolar electrode introduced through the fistuloscope. The procedure starts near the internal orifice, retreating little by little, until achieving the external orifice, concluding the cauterization (Fig. 5). Simultaneous cleaning of the fistula tract and removal of necrotic debris is carried out using an endobrush, also introduced through the fistuloscope, and facilitated by continuous irrigation and flushing out through the still-open internal opening. Finally, the internal orifice is pulled to raise a volcano, and, inserting a stapler at its base, the internal orifice closure is achieved (Fig. 6); or a mucosal advance-ment flap is performed in certain cases with extensive fibrosis around the internal opening.

Fig 6: Closure of the inter-nal opening



At the end of the operation, Meinero proposed the application of 0.5 ml of syn-thetic cyanoacrylate, through a tiny catheter, immediately behind the sta-ple/suture line in order to reinforce the suture itself and ensure that the opening is completely closed. We followed this step in our initial study patients using a pe-diatric feeding tube for delivery of the glue. However, 14 of these patients devel-oped foreign body granuloma in reaction to the glue, hence we abandoned the use of glue in our last 50 cases.

At the end of the VAAFT procedure, we routinely sent tissue biopsy samples from the external opening for histo-pathological testing including TB PCR (Polymerase chain reaction). Considering the relatively high incidence of fistulous tuberculosis in our series (5 cases), towards the later half of the study period, gamma inter-feron test to rule out tuberculosis in cases of multiple fistulas was done in the pre-operative period in 20 patients.

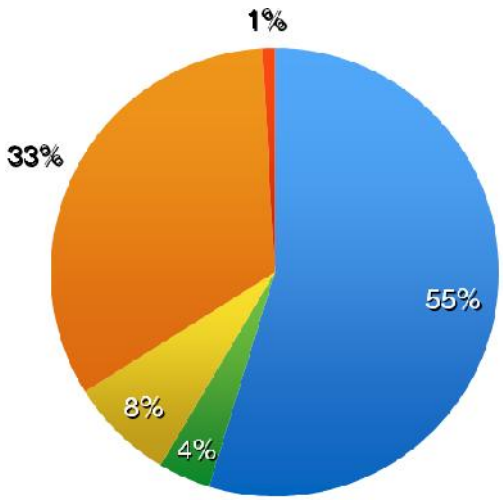
All our patients were discharged on the second post-operative day after a change of dressing. Follow up was conducted at 3, 6 and 12 months after initial surgery, and thereafter once per year. In 14 patients who could not appear for examina-tion, a phone interview was conducted. 84 patients were followed up for a mini-mum of 6 months, with a median duration of follow up of 14 months (range 6-42 months).

At each follow up visit, pain scoring was done using the visual analog scale (VAS). Patient acceptability was assessed by questioning them regarding post-operative perianal discomfort, discharge from the fistula wound and worsening of faecal con-tinence. On examination, fistula healing was ascertained based on lack of dis-charge from the external opening.

Results

Of the 105 patients operated on during the course of the study, 57 patients (54.3%) had a high trans-sphincteric fistula (with more than 1 cm of external sphincter in-volved), 8 patients (7.6%) had an extra-sphincteric fistula and 35 patients had an inter-sphincteric fistula (33.3%). In one patient (0.9%) the fistula was supra-sphincteric, while 4 patients (3.8%) had a horseshoe fistula. In 65 cases (61.9%), the internal fistula opening was located in the anal canal, while in the other 40 cases (38.1%) it was in the rectum.

Fig 7: Chart depicting frequency of occurrence of various fistula types in the study population, based on Parks' classification.



The mean operating time was 40 minutes (Range 30 to 95 minutes). Blood loss dur-ing the surgeries was minimal. All patients were discharged on the second post-operative day.

No major complications occurred in the peri-operative period, and no infection or bleeding was observed. Post-operative pain scoring was performed based on a vis-ual analog score (VAS). A mean value of 4.2 was obtained on the morning after surgery, which further reduced to a mean of 1.9 at the time of discharge after 48 hours. None of the patients reported pain at first follow up after 3 months.

21 patients out of our study population were lost to follow up. Among the remain-ing 84 patients who could be followed up, primary healing was achieved in 73 pa-tients (86.9%) within 6 months of surgery. In 4 cases with complex fistula, a staged VAAFT/re-operation was planned at the time of the first surgery itself. 5 of the remaining 7 patients (8.3%) having persistent discharge at the fistula site were re-operated with VAAFT at 6 months after the initial procedure, while the other 2 are under observation.

5 (4.8%) study patients who were diagnosed with fistulous tuberculosis by histopa-thology including TB-PCR, were started on anti-tubercular drug therapy. No fistula recurrence was noted among them. At 12 months' follow up, 77 patients had achieved complete healing at the fistula site (91.7%). Of the 9 patients for whom staged or repeat VAAFT was performed, healing of their fistulous tracts was achieved in 4. Remaining 4 are still under observation, while 1 patient was lost to follow up.

Although anal manometry wasn't carried out in the study population, all study pa-tients denied worsening of fecal continence after the surgery. None of the patients complained of flatulence or loose stools. Overall patient acceptability and satis-faction after VAAFT was good, with only 6 (7.1%) patients expressing some dissatis-faction due to recurrence/ persistent discharge at the fistula site.

Discussion :

Anorectal abscesses and resultant anal fistulas can happen in normal healthy individuals.The cryptoglandular theory of the etiology of fistula is generally accepted. An anal crypt may get obstructed by debris, which later leads to infection and abscess formation. The abscess then tracks to the external surface, either bursting out spontaneously or being surgically drained, leading to fistula formation. This forms the basis of Parks' classification of anal fistula in which the type of fistula is defined by the relationship of the track to the external sphincter and puborectalis muscles. Consistent with our study, literature states most anal fistula to be of the inter-sphincteric or trans-sphincteric variety. Other atypical causes of complicated anorectal abscess and fistula include inflammatory bowel disease, fungal infection, myco-bacterial infection, neoplasm and trauma.[6,7]

An anal fistula may also be simple or complex. Complex fistulas have been described differ-ently as those that transverse more than 30% of the external sphincter, those in patients with pre-existing continence issues or following irradiation and Crohn's disease, high trans-sphincteric, supra-sphincteric and extra-sphincteric fistulas, anterior fistulas in a female, fis-tulas having multiple tracks and happening recurrently.[8]

Most commonly, anal fistulas present with pain and swelling due to the underlying infection and abscess formation, and with discharge at the external fistula opening. Diagnosis is achieved by clinical digital examination and imaging. Digital examination alone can accu-rately identify the type of fistula and the site of the internal opening in about 80% of pa-tients.6 Other techniques include probing of the tract, endosonography and a variety of in-jection and radiologic techniques, including dye sigmoidoscopy as employed at our centre. MRI is accurate in demonstrating the fistula anatomy in over 95% patients, but being expen-sive, it has limited role as a routine investigation in anal fistulas.[6,7]

The aim of anal fistula treatment is to cure the condition, with drainage of the associated infected gland abscess and eradication of the fistula tract. All methods of fistula repair rely on the elimination of the fistula internal opening to the anal gland.7 Among these, fistu-lotomy/fistulectomy remain the gold standard in the treatment of anal fistulas with only minor involvement of the sphincters, with a success rate of over 90% in these cases with only minor disturbance in bowel continence. However, complex fistulas present a bigger challenge for the surgeon because of the high incidence of bowel control impairment after these traditional surgical approaches.[4]

The choice of surgical techniques has changed over the last several years, as shown by the analysis of results by Blumetti et al.9 The authors focussed on anal fistula treatment results on a group of 2267 patients operated during the period between 1975 and 2009. Their study has highlighted a shift in popularity of surgical procedures from fistulotomy and partial fistulotomy, that is the incision of the sphincters ("cutting procedures") in the seventies and eighties, to

more of "non-cutting" procedures in the modern era. Sphincter saving procedures are now considered the standard treatment of anal fistula. The search for effective treatment, without compromis-ing bowel continence has led to the development of the following techniques:

1) Anal fistula plug
2) Ligation of the intersphincteric fistula tract (LIFT)
3) Fibrin glue
4) VAAFT

However, this gradual adoption of less radical techniques has resulted in a documented in-crease in fistula recurrence rates. The index of procedures per one anal fistula patient has increased from 1:1 (1970-79) to 1:1.5 (2005- 2009).[7,9,10]

Current surgical techniques for treating anal fistulas are based on three main principles: identification of the tract and the internal opening, excision of the fistula tract and preserva-tion of anal sphincter function.4 There is great variation in both technical difficulty and effi-cacy among all the above mentioned options for complex cryptoglandular fistulas. The ra-tionale of the VAAFT technique is based on the concept of both detection and perfect clo-sure of the internal fistula opening, in addition to the destruction of the pathway and clean-ing which will allow complete and definitive healing.

Fibrin glue injection is a technically easy, low-risk technique but results have been disap-pointing, showing success rates as low as 16% long term.11-13 Fistula closure using different plugs (Surgisis) is also a minimally invasive procedure without the risk of sphincter damage. However, primary closure of the fistula is observed in 50% of patients with the relatively high material costs.[14]

The use of another, sphincter-saving method - LIFT15,16, which consists of the inter-sphincteric closure of the fistula canal near the internal ostium, gives promising results amounting to 90% of recovery. However, the method is technically difficult or impossible to perform in case of high anal or inter-sphincteric fistulas.

Recently, another novel technique for treating complex fistulas, fistula laser closure (FiLaC), has been proposed. Wilhelm et al. observed an 80% recovery rate using the laser technique in combination with mucosal advancement flap. However, this method does not allow to control the internal opening and the fistula tract, which may result in stool incontinence.[17]

The rationale of the VAAFT technique is based on the same principles as other procedures, as in that of closing the internal opening and obliterating the track, where the real innova-tion is the precise identification of the fistula anatomy and of the internal opening by fistu-loscopy, and fulguration of the tract walls under direct vision. None of these other newer methods enable to recognize the fistula tract, branching and blind canals, hence often re-sulting in incomplete treatment and fistula recurrence.

VAAFT can also be performed as a day-care surgery; it leaves no surgical wounds on the but-tocks or in the perianal region and gives complete certainty regarding the location of the internal fistula opening (a key point in all surgical treatment of fistulas).4 Although at first glance, the use of newer technology and modern devices may deem the procedure to be expensive, but in hindsight, the short hospital stay and the short absenteeism from work make VAAFT more cost-effective.

Our initial results with VAAFT are very encouraging. We have achieved results comparable or even slightly better than Dr Meinero and his team's pilot project, as evidenced by a fis-tula healing rate of 91.7% at 1 year following VAAFT in our study, compared to 87.1% in the earlier study. This may be attributed to a slightly smaller sample size and population for fol-low up in our study, and also for the fact that Dr Meinero and his pioneering team would have had a much steeper learning curve. In another study conducted by Kochhar G et al. comprising a relatively large study population of simple and complex anal fistula cases, the authors reported a primary fistula healing rate of 84.15% among 82 patients.18 Being a novel method of fistula treatment, very few published material on VAAFT is available till date, however, none of the published studies on VAAFT that we could find have mentioned facial incontinence as being encountered in any of the study patients in the post-operative pe-riod.[4,10,18]

As with any newer procedure, VAAFT also requires further validation with more randomized control studies involving even larger group of patients with longer follow up periods. Al-though in our study, we have encountered very few cases of fistula recurrence, it is still pos-sible to have fistula recurrence with VAAFT especially in unskilled hands. It also involves a learning curve period, which can be overcome only by constant practice. The instruments and equipment used are relatively expensive and not easily available in our country. More-over, there are instrument maintenance costs also involved. More awareness regarding the procedure and its rationale

needs to be generated among the modern surgeons, especially in the non-metro cities.

Summary :

Video Assisted Management of Complex Anal Fistula has emerged as a promising new minimally invasive sphincter saving treatment modality. It promises 100% cure when in able hands, and doesn't carry the shortcomings of other conventional and newer methods of fis-tula treatment. Although sub-mucous fistulas and low inter-sphincteric fistulas can be treated with fistulotomy and fistulectomy, all recurrent cases (even low) and all doubtful cases should have a fistuloscopy on the operation table prior to proceeding with any sur-gery. The major advantages of this technique, apart from almost certain localization of internal opening, is the absence of open wounds, no necessity for expensive investigations, no need to classify the fistula pre-operatively, almost absent post-operative pain and very early return to work.

Emerging new Indications of Fistuloscope :

The Meinero fistuloscope in future may have wide range of applications. Apart from being used in complex anal fistulas, we have used it successfully in several cases of pilonidal sinus and also in a case of cervical sinus after dissection of the tract to visualize the upper limit of the tract. In future the fistuloscope may become an important tool in managing biliary and bowel fistulas.

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Case Report

METASTATIC ADENOCARCINOMA OF LOWER JAW FROM COLONIC GROWTH: A RARE PRESENTATION

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ABSTRACT
Oral Cavity metastasis from colorectal cancer is an uncommon entity and is rarer still as the first presenting symptom of the disease. Here we present a rare case of gingivial metastasis from carcinoma colon that was originally evaluated as a primary oral cavity malignancy with unknown primary. The primary "culprit" lesion was only revealed 3 months later when the patient presented with large gut obstruction, necessitating an emergency surgery and a sigmoid growth was found. Surgery rendered the patient a almost symptom free year of his life only to fall prey possibly to another rare complication of the disease, a Thalamic metastasis leading finally to his demise.

Key Words : *Oral metastasis; adenocarcinoma; colon cancer.*

Introduction :

Metastatic lesions to the oral cavity from distant tumors are uncommon, accounting for only 1% of all oral malignancies. They mainly involve the bony structures (particularly the mandible), whereas primary metastases to soft tissues are extraordinarily rare (only 0.1% of oral malignancies). The most common sites of soft tissue involvement are the gingiva, tongue, lips and the buccal and palatal mucosa. The most common primary tumors being lung in men and breast in women.[1]

Case Report :

A 39-year-old male presented with a swelling in the lower gums with loosening of teeth and pain. Clinically an ulcero-proliferative growth of 3 × 3 cm involving the lower gingival mucosa was found (Fig-1). No significant cervical lymphadenopathy was noted. A wedge biopsy from the oral lesion was done, which revealed moderately differentiated adenocarcinoma suggesting the possibility of a secondary deposit from another site (Fig-2). This initiated the search for primary disease. His USG whole abdomen revealed a lesion in the right adrenal gland suggestive of metastasis and chest Xray showed a right hilar lesion. His CT thorax showed small multiple lesions, too small to have been biopsied. Rest investigations failed to find a primary. So he was treated as metastatic adenocarcinoma with unknown primary with excision of the gingivial mass followed by first cycle of chemotherapy.

3 months later, the patient presented with features of intestinal obstruction necessiting an emergent exploratory laparotomy revealing the primary lesion in the form of a sigmoid colon growth An excision of the mass with end to end anastomosis was carried out. Excised segment shows

annular growth compromising the colonic lumen (Fig-3). Histopathology of excised lesion shows features suggestive of moderately differentiated adenocarcinoma with lymphovascular invasion.

Post operative status was uneventful. Patient was given post operative chemotherapy with 5 FU and leucoverin and was discharged after 15 days with and was followed up at regular intervals with chemotherapy cycles. The patient enjoyed a relatively symptom free period for around 12 months, before presenting with features of altered sensorium and neurological deficits with detoriating mental status. C.T. brain was done which revealed features suggestive of secondaries in the Thalamus, a yet another rare complication of colorectal malignancy, to which we finally lost the patient (Fig-4.

Discussion :

Metastases from colorectal cancer can occur either by lymphatic or hematogenous spreading, and the sites most commonly involved are the liver and lung. Unusual metastases from colorectal cancer into organs including the spleen, thyroid gland, spermatic cord, and skeletalmuscle have been reported[2,3]. However, oral metastasis from colorectal cancer is a rare condition and more so as a presenting feature of the disease.

Coming to metastatic lesions in the oral cavity, most of the oral metastasis involve the bone, the mandible being the most common, while only one third are in the soft tissue of the oral cavity [1-4], mostly located in the gingiva and tongue [4] In our case it involved the lower gingiva with no involvement of the mandible. The mechanism of metastatic dissemination is unclear, but a hematogenous spread from a distant focus is suggested. In the gastrointestinal tract, colonic carcinomas usually display metastasis to regional lymph nodes, liver, peritoneum, lung or ovaries, rarely at the supraclavicular organs [5]. From a pathological point of view, the differential diagnosis includes the adenoid squamous cell carcinoma, with a pseudo glandular pattern, and above all the polymorphous low-grade adenocarcinoma, that affects the minor salivary glands of the mouth, which is located preferentially to the palate [5]

The incidence of brain metastases from Colorectal Cancer in a study[6] done over 20 years was 2.3%. They found that left-sided primary colon tumors predominated and the majority of patients had pulmonary metastases at the time brain metastases. All patients were symptomatic from brain metastases, and the cerebellum was the most common area of brain involvement.[6] In our case, it was a left sided growth with pulmonary metastasis, but the suggestive secondary was found in the thalamus.

Fig. 1.PRESENTATION AS LOWER GINGIVIAL SWELLING

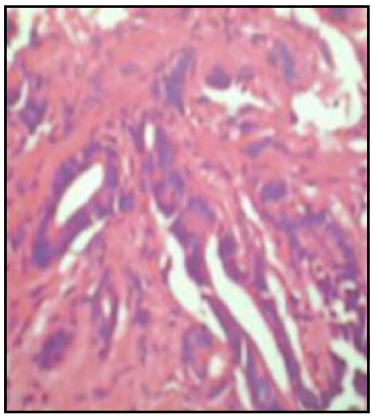

Fig. 2. HISTOLOGY OF BIOPSY FROM LESION SHOWING MODERATELY DIFFERENTIATED ADENOCARCINOMA.

Fig. 3. RESECTED SPECIMEN SHOWING ANNULAR GROWTH OBSTRUCTING THE LUMEN

Fig. 4.C.T. SCAN SHOWING CEREBRAL METASTATIC LESION.

Usually, oral metastasis cause considerable discomfort to the patient and even a palliative treatment becomes necessary to improve the quality of life. Such metastatic lesions should be approached surgically, irrespective of thespread of the tumor. However,when surgery cannot be performed due to wide dissemination of the tumour,a palliative radiotherapy, chemotherapy, or combination of both is recommended.[7]

Conclusion :

Oral cavity metastatic lesions as a presenting feature of colorectal cancers are a rare entity that may bewilder the clinician and cause a delay in identifying the primary. However, review of such cases may enable the mind to consider such possibilities when encountered with such exceptional cases and bring a better and earlier therapeutic intervention for the patient.

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Case Report

Treatment of Button Battery Induced Esophageal Stricture by Retrgrade Esophagoscopy

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ABSTRACT
Button battery ingestion is considered a serious event, as it may cause considerable damage to the gastro-intestinal tract. Because of small size, it usually passes through the esophagus. Here a child with stricture in upper esophagus caused by a button battery impaction is reported. It could not be managed by conventional method of antegrade dilatation. The stricture was dilated successfully by gastrotomy, retrograde esophagoscopy and combined ante and retrograde intervention.

Key Words : *Retrograde esophagoscopy; Stricture esophagus; Button battery in esophagus*

Introduction :

Corrosive ingestion is a disease of industrial age. Button battery causing burn is the disease of electronic age. Stricture esophagus due to button battery is not common as it passes esophagus due to its small size [1]. Stricture esophagus after operation for esophageal atresia or lye ingestion is commonly encountered. Many of these require dilatation. In some resistant cases retrograde esophageal dilatation using a tucker's dilator through a gastrostomy is also required. Some authors have tried to assess the lower end of the esophagus by a fiber optic gastroscope introduced through a gastrostomy opening in pure esophageal atresia without fistula [2]. In adult there are some reports of stricture management with per operative retrograde esophagoscopy is available [3-5]. The present case is a noble attempt to negotiate a button battery induced esophageal stricture in a child by per-operative retrograde esophagoscopy done through a stab puncture made in the stomach.

Case Report :

An eight months female child was referred with history of inability to swallow and regurgitation of feeds for 1½ months. The symptoms aggravated and the child had cough and fever from two days. There was history of impaction of a button battery in the esophagus 3 months back and was removed by an ENT surgeon by direct endoscopy.

A contrast x-ray (Figure 1) done two days prior to admission showed stricture of upper esophagus with minimal passage of dye across the stricture. There was gross spillage of contrast in tracheo-bronchial tree.

After initial management with fluid and antibiotic the patient was taken for esophagoscopy under General anesthesia (GA). Rigid esophagoscope

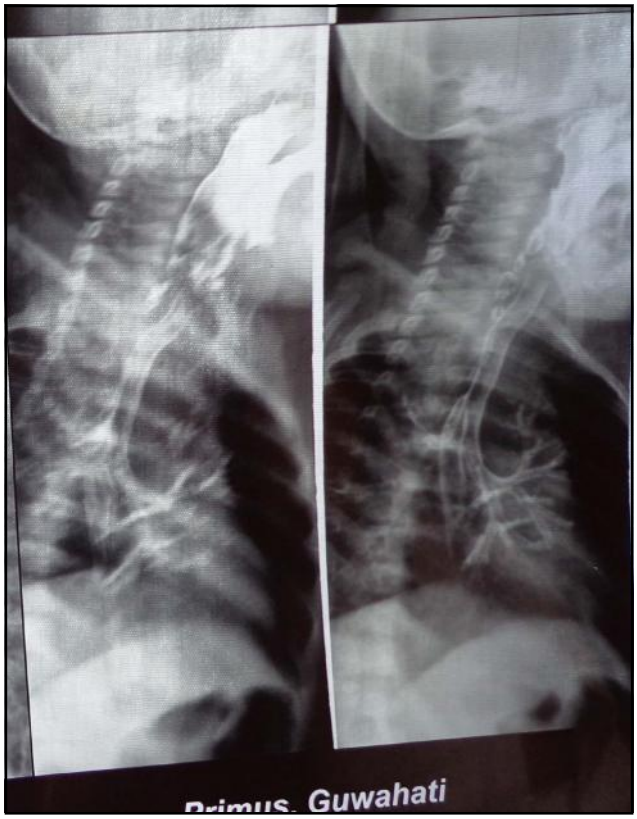

Figure 1
Esophagogram showing obstruction at upper esophagus and spillage of contrast in the trachea-bronchial tree.

with telescope was used for assessment of the stricture. A diaphragm type stricture was found in the esophagus at about 13 cm from the gum margin. The stricture was near complete with a doubtful eccentric hole in one area (Figure 2). Even a 3FR guide wire could not be negotiated through it.

A midline upper abdominal incision about 3cm length was made. Two controlled stay sutures were placed on the anterior wall of the body of the stomach. A stab wound about 1cm was made and 9 mm fiber optic flexible gastroscope was introduced through it. Esophagus was examined from its distal end. The stricture was complete without any obvious hole in it. A gum elastic bougie was introduced through the mouth and manipulated. Movement in the obstructing diaphragm could be appreciated in some movement of the bougie. But occasionally the tip went away from the esophageal lumen.

As proper sized punch biopsy forcecps going through the working channel was not available, an innovative technique was employed. The gastroscope was withdrawn and a flexible punch biopsy forceps was tied with the scope by elastic rubber band (Figure 3). Keeping the tip of the bougie in the centre, the membrane of the stricture was nibbled over it. The bougie could be seen from below and then it was pushed to the stomach. The stricture was dilated from below by railroading a wide Ryle's tube feeding over the bougie. A thick silk thread was kept across the stricture and its upper end was brought out through the nose. A gastrostomy was created on the gastrotomy wound. The lower end of the silk thread was brought out to abdominal wall by the side of the gastrostomy opening. This was done to use as guide in future dilatation if required. Mid line wound was closed.

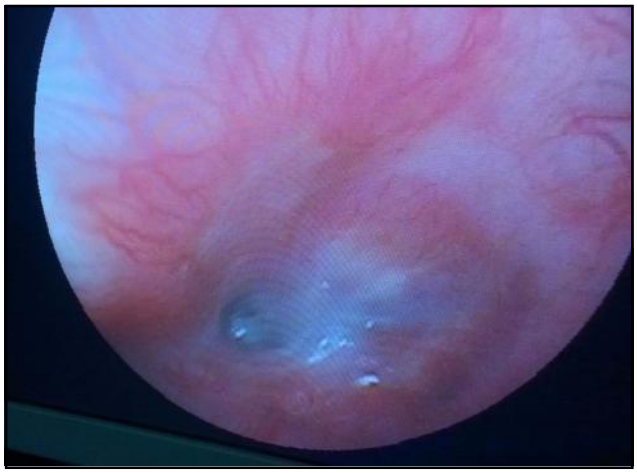

Figure 2
Antegrade esophagoscopic view of the stricture.

Post operative recovery was uneventful. The baby could swallow liquid in 48 hours and gastrostomy was not used. On 8th day antegrade dilatation was done up to 22FR gum elastic bougie and the baby was discharged on the same day with advice to come for follow-up dilatation.

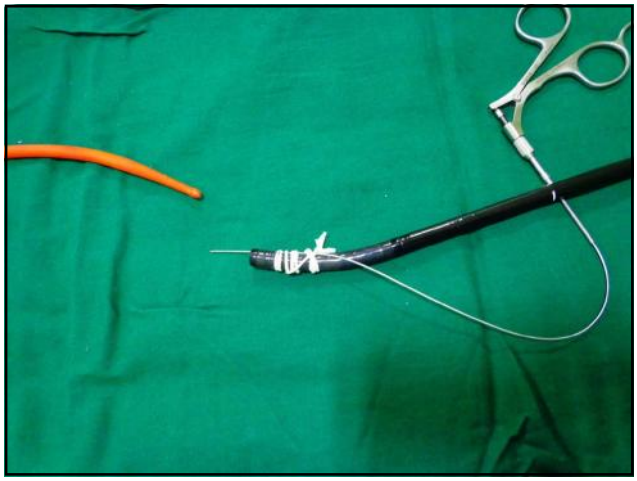

Figure 3
Scope, Forceps and dilator assembly.

Discussion :

Stricture of esophagus due to lye ingestion is common in developing countries due to uncontrolled use of caustic soda and cleansing agents [1]. Though button battery swallowing has increased over the years, it usually passes through the esophagus. Button batteries act by two ways. Negative side hydrolyses mucosa if it is charged. Soon it gets dissolved and concentrated potassium and sodium hydroxide from inside the battery causes corrosive burn [1].

Retrograde dilatation of the malignant stricture, radiation induced obstruction of the esophagus through the gastrostomy opening have been described in adults [3,4]. Similarly antegrade esophageal dilatation with the help of retrograde esophagoscopy has also been described in adults [5].

In delayed primary esophageal anastomosis for isolated esophageal atresia retrograde esophagoscopic assessment of the lower pouch have been described by Yeh et al.[2]. In our literature search we have not found any case of corrosive stricture in a child managed by primary gastrotomy and retrograde oesophagoscopy.

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Case Report

Atypical presentation of chondromyxoid fibroma of olecranon mimicking giant cell tumour and treated by intralesional curettage and hydroxyapatite

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ABSTRACT
Chondromyxoid fibroma (CMF) is an uncommon benign bone tumour, accounting for less than 1% of bone tumours. It commonly affects the metaphysis of long bones during the sec-ond and third decade of life. Involvement of epiphysis alone is rare. CMF usually shows dis-tinctive radiological pattern of an expansile lytic lesion with sclerotic margins that appears lobulated and 'bubbly'. However, when occurring in unusual locations or in older patients, it may be misdiagnosed. Histopathological examination, showing the hallmark of chondroid, myxoid, and fibrous tissue components in variable amounts organised in a pseudolobulated architecture, is diagnostic. Treatment is commonly by intralesional curettage, although en bloc tumour resection is favoured because of the high rate of local recurrence with curettage alone. Long term follow up is essential. We present a case of chondromyxoid fibroma of ole-cranon in a 47 years lady mimicking giant cell tumour by virtue of its atypical location and radiographic features, and treated by intralesional curettage and hydroxyapatite.

Key Words : *Chondromyxoid fibroma; olecranon; atypical; intralesional curettage.*

Introduction :

Chondromyxoid fibroma (CMF) is an uncommon benign bone tumour, accounting for less than 1% of bone tumours in most of the series. It was first described by Jaffe and Lichten-stein in 1948 when they emphasized the danger of mistaking this benign neoplasm for malig-nant tumour, especially chondrosarcoma [1].Since then, approximately 500 cases have been reported in literature.

The majority of cases occur in the second and third decade of life, with an additional peak of incidence occurring between 50 and 70 years. Usually no predilection for either sex exists [2]. Most chondromyxoid fibromas are located in the metaphyseal region of long bones (60%), and may extend to the epiphyseal line. Rarely, they may even abut the articular sur-face. They are almost never just epiphyseal. The classical site is the upper 1/3rd of tibia (which accounts for 25% of all cases) with the small tubular bones of the foot, the distal fe-mur and pelvis being other relatively common locations [3].The tumour comprises of a vari-able combination of chondroid, myxoid, and fibrous tissue components organised in a pseu-dolobulated architecture [4].

On radiographs, chondromyxoid fibromas present as lytic lesions with sclerotic margins and appear lobulated and 'bubbly'. Calcification is

uncommon [5]. Rarely they may mimic other lytic lesions of bone such as giant cell tumour, especially when presenting at an atypical loca-tion like epiphysis. Pathological diagnosis is definitive.

We present one such rare case of chondromyxoid fibroma of the olecranon in a 47 years lady, initially misdiagnosed as giant cell tumour based on radiological findings, and later con-firmed on histopathology. The tumour itself was treated with intralesional curettage and hy-droxyapapatite to fill the defect.

Case report :

A 47 years lady presented to us with pain and swelling around her right elbow. She was un-sure about the exact duration of her complaints, but had first noticed the swelling more than a year ago. It was gradually enlarging in size, and was accompanied by on-and-off pain that was dull and non-radiating. She was however able to carry out most of her daily activities without difficulty.

On examination, a firm bony swelling was palpable over her right olecranon, measuring roughly 6 cm by 5 cm. Tenderness could be elicited on applying firm pressure. Overlying skin was shiny and stretched, but there was no break in its continuity. There was no redness or local rise of temperature. Functional range of movement in the elbow was preserved and was painless, although she had a loss of terminal 20 to 30 degrees of flexion and extension.

Radiographs of the affected elbow revealed an expansile, lytic lesion involving the olecranon and extending upto the metaphysis of the proximal ulna. Multiple internal trabeculations were visible, giving the lesion a 'honeycomb'appearance. Although the cortex of the proximal ulna appeared thinned out and even eroded at certain places, the articular surface seemed intact. There appeared to be no calcification within the lesion (Fig 1).

Fig 1: Radiograph of the affected elbow

Considering the location of the lesion as well the characteristic radiological signs, an initial differential diagnosis of giant cell tumour seemed most likely. This was further supported by the findings of contrast-enhanced MR study, which confirmed the trabeculated nature of the lesion with multiple internal bony septations, and the absence of breach in the articular cor-tex. The lesion, which was predominantly hypointense on T1-weighted images, showed het-erogenous enhancement on post contrast studies, with internal non-enhancing areas sugges-tive of necrotic areas.

Before attempting definitive treatment of the tumour, we performed an open biopsy. Multiple small brownish waxy bits of tissue from the lesion were sent to two different laboratories for processing. The results were contrasting. While one report failed to arrive at a conclusive pathological diagnosis, another centre suggested chondromyxoid fibroma as being most probable. Both reports however shared the common findings of a myxochondroid appear-ance, with predominantly chondroid cells in an unmineralised matrix, within hypocellular lobules separated by intersecting bands of fibrous tissue (Fig 2).

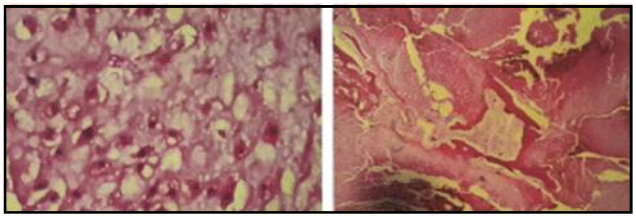

Fig 2: Low and high magnification images of histological study of biopsied tissue

The patient was planned for surgery. The initial plan was to do an en bloc tumour resection and joint reconstruction using custom-made prosthesis. However, as the patient couldn't af-ford to bear the cost of the implant, the plan was abandoned. Thorough intralesional curettage was performed after opening up the tumour cavity through a posterior midline approach. Cheesy material, intermixed with bits of firm tissue was evacuated, and sent for histopa-thological examination. The fibrous lining of the cavity wall was curetted out, and the cavity was irrigated with diluted hydrogen peroxide. The cavity was then packed with commercially available hydroxyapatite crystals and the posterior wall was crushed over it so as to reduce the size of the lesion [Fig 3(a)].

Post operatively, radiographs reconfirmed no breach in the articular cortex [Fig 3(b)]. The patient was kept in a dorsal slab for the first 2 weeks to allow for wound healing. Thereafter sutures were removed and

elbow movements started. Patient recovered almost entire pre-operative range of movement within a few days of starting physiotherapy. Her movements were painless. No local wound complications were noted.

Fig 3:(a) Intra-operative image showing the curetted out cavity filled with hydroxyapatite

(b) Post-operative radiograph showing hydroxyapatite crystals in situ

Post-operative biopsy reports concurred with initial pre-operative findings of a lobulated tu-mour with predominant chondrocytes set in a myxochondroid matrix. No nuclear pleomor-phism or abnormal mitosis was noted.

Discussion :

Chondromyxoid fibroma is a benign, although potentially aggressive tumour, with a carti-lage-like matrix, accounting for approximately 1% of all bone tumours. It usually affects pa-tients in their second and third decades of life. An additional peak of incidence, however, has been observed between 50 and 70 years of age. There is usually no sex predilection [2].

Clinically, the main symptoms are pain, swelling or tenderness, and pressure effect on neighbouring structures. Duration of symptoms may range from weeks (often in younger pa-tients) to even years (in adults) [6,7]. An associated pathologic fracture occurs in approxi-mately 5% of cases [8]. The most common site of the tumour is the metaphysis of long bones adjacent to the epiphyseal growth plate. Epiphyseal involvement is very uncommon [9].

The typical radiographic pattern includes an expansile ovoid lesion with a radiolucent center [10]. Well-defined sclerotic margins, septations, and a bulging, thinned, overlying cortex are frequent findings. Geographic bone destruction in conjunction with clinical findings should raise suspicion of CMF [11]. On MRI, depending on the varying amounts of myxoid and car-tilage tissue, the center of the tumour is hyperintense on T2-weighted spin-echo images and STIR sequences. Along with the typical lobulated pattern, the images are distinctive of a tu-mour of cartilaginous origin [2].

Rarely, chondromyxoid fibromas lack sclerotic margins and extend into the epiphysis of long bones, resembling giant cell tumour, as seen in our patient.5 The average age of patients with chondromyxoid fibroma (?25 years) is only slightly younger than that of patients with giant cell tumour, where peak incidence occurs in the third decade. There is however, sufficient overlap.

Considering that chondromyxoid fibromas are usually documented to have a metaphyseal location, the olecranon represents a very rare site of occurrence. In one of the earliest pub-lished case study on chondromyxoid fibroma of bone, out of 32 cases of primary CMF, Fritz Schajowicz and Hector Gallardo found just one with a proximal ulna lesion (Fig 4) [12]. The clinical scenario was somewhat similar to our case. The patient, a 49 years male, had pain over his elbow of one year duration, with minimal swelling, and was treated with intrale-sional curettage. Other similar case reports of CMF involving the proximal ulna are rare.

Fig 4: Chondromyxoid fibroma of proximal ulna in a 49 yrs male (Schajowicz F et al, 1971)

Histopathological diagnosis, although definitive, sometimes presents a conundrum. Classi-cally, the tumour is composed of lobulated or pseudolobulated areas of spindle-shaped or stellate cells without distinct cytoplasmic border, and abundant myxoid or sometimes chon-droid intercellular material separated by bands of more cellular tissue often rich in colla-genous fibres with a fair number of fibroblastic elements [12]. However, the typical aspects of chondroid, fibrous, and myxoid tissues may not be present in each histological specimen. Therefore, a small biopsy could lead to a false-negative diagnosis. The tissue changes in two ways: areas with large numbers of cells with loose connective tissue stroma are penetrated by lobulated areas of chondroid material, and occasionally, extended cystic and hemorrhagic de-generation. Occasional osteoclast-like giant multinucleated cells are encountered particularly at the periphery. Most cells are morphologically bland, and mitotic figures are rare or absent. However, chondroid

elements, including multinucleated and polymorphic cartilage cells, may sometimes dominate the histological pattern and lead to the misdiagnosis of chondrosarcoma [2].

Treatment in most of the reported cases consists of intralesional curettage. Excision with or without bone grafting is often performed and advocated by many investigators [13,14].In ex-ceptionally rare cases, especially recurring tumours, an amputation may be deemed necessary despite the tumour's benign nature [15].Initially, curettage alone was considered an adequate treatment because the lesion did not tend to recur. In their series, Rahimi et al reported 6 re-current cases among 15 patients treated by curettage alone. In 6 other cases of tumour exci-sion or en bloc resection, no recurrence was found [13]. Overall, a high recurrence rate of 25% has been documented following treatment by curettage alone [2]. In conclusion, the re-currence rate is lower with resection using wide margins, although this may not always be possible in certain anatomical regions.

Although malignant transformation of CMF to chondrosarcoma has been suggested in several studies, none of those cases were sufficiently documented to be able to exclude a misdiagno-sis [16,17]. Nonetheless, long term follow up is needed, not only to rule out sarcomatous change, but also to look for signs of tumour recurrence after treatment.

Conclusion :

We present a case of chondromyxoid fibroma of the olecranon mimicking giant cell tumour in a 47 years lady. CMF is a rare tumour, but it shows distinctive radiological patterns in most cases. However, when occurring in unusual locations or in older patients, it may be misdiagnosed. The preferred treatment, where possible, is an en bloc excision with tumour-free margins. Intralesional curettage, as done in our case, carries a 25% risk of recurrence even with the use of local adjuvants. Hence, long term patient follow up is needed to look for recurrence or malignant transformation.

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Journal Review

Compiled by:
Dr. H.K.Dutta, MS, M.Ch.

1. Evidence for a standardized preadmission showering regimen to achieve maximal antiseptic skin surface concentrations of chlorhexidine gluconate, 4%, in surgical patients

JAMA Surgery, 09/09/2015Edmiston CE, et al.

To reduce the amount of skin surface bacteria for patients undergoing elective surgery, selective health care facilities have instituted a preadmission antiseptic skin cleansing protocol using chlorhexidine gluconate. A Cochrane Collaborative review suggests that existing data do not justify preoperative skin cleansing as a strategy to reduce surgical site infection. To develop and evaluate the efficacy of a standardized preadmission showering protocol that optimizes skin surface concentrations of chlorhexidine gluconate and to compare the findings with the design and methods of published studies on preoperative skin preparation. A standardized preadmission shower regimen that includes 118 mL of aqueous chlorhexidine gluconate, 4%, per shower; a minimum of 2 sequential showers; and a 1-minute pause before rinsing results in maximal skin surface (16.5 µg/cm2) concentrations of chlorhexidine gluconate that are sufficient to inhibit or kill gram-positive or gram-negative surgical wound pathogens. This showering regimen corrects deficiencies present in current nonstandardized preadmission shower protocols for patients undergoing elective surgery.

Methods

- A randomized prospective analysis in 120 healthy volunteers was conducted at an academic tertiary care medical center from June 1, 2014, to September, 30, 2014.
- Data analysis was performed from October 13, 2014, to October 27, 2014.
- A standardized process of dose, duration, and timing was used to maximize antiseptic skin surface concentrations of chlorhexidine gluconate applied during preoperative showering.
- The volunteers were randomized to 2 chlorhexidine gluconate, 4%, showering groups (2 vs 3 showers), containing 60 participants each, and 3 subgroups (no pause, 1-minute pause, or 2-minute pause before rinsing), containing 20 participants each.
- Volunteers used 118 mL of chlorhexidine gluconate, 4%, for each shower.
- Skin surface concentrations of chlorhexidine gluconate were analyzed using colorimetric assay at 5 separate anatomic sites.
- Individual groups were analyzed using paired t test and analysis of variance.
- Preadmission showers using chlorhexidine gluconate, 4%.

- The primary outcome was to develop a standardized approach for administering the preadmission shower with chlorhexidine gluconate, 4%, resulting in maximal, persistent skin antisepsis by delineating a precise dose (volume) of chlorhexidine gluconate, 4%; duration (number of showers); and timing (pause) before rinsing.

Results

- The mean (SD) composite chlorhexidine gluconate concentrations were significantly higher (P<.001) in the 1- and 2-minute pause groups compared with the no-pause group in participants taking 2 (978.8 [234.6], 1042.2 [219.9], and 265.6 [113.3] (mu)g/mL, respectively) or 3 (1067.2 [205.6], 1017.9 [227.8], and 387.1 [217.5] (mu)g/mL, respectively) showers.
- There was no significant difference in concentrations between 2 and 3 showers or between the 1- and 2-minute pauses online: 14 October 2015

2. Clinical, demographic, and laboratory characteristics of children with nephrolithiasis

- David J. Sas,Lauren J. Becton,Jeffrey Tutman, Laura A. Lindsay, Amy H. Wahlquist

Abstract

While the incidence of pediatric kidney stones appears to be increasing, little is known about the demographic, clinical, laboratory, imaging, and management variables in this patient population. We sought to describe various characteristics of our stone-forming pediatric population. To that end, we retrospectively reviewed the charts of pediatric patients with nephrolithiasis confirmed by imaging. Data were collected on multiple variables from each patient and analyzed for trends. For body mass index (BMI) controls, data from the general pediatrics population similar to our nephrolithiasis population were used. Data on 155 pediatric nephrolithiasis patients were analyzed. Of the 54 calculi available for analysis, 98 % were calcium based. Low urine volume, elevated supersaturation of calcium phosphate, elevated supersaturation of calcium oxalate, and hypercalciuria were the most commonly identified abnormalities on analysis of 24-h urine collections. Our stone-forming population did not have a higher BMI than our general pediatrics population, making it unlikely that obesity is a risk factor for nephrolithiasis in children. More girls presented with their first stone during adolescence, suggesting a role for reproductive hormones contributing to stone risk, while boys tended to present more commonly at a younger age, though this did not reach statistical significance. These intriguing findings warrant further investigation.

3. Survival benefit of repeat resection of successive recurrences after the initial hepatic resection for colorectal liver metastases

Masaru Oba, Kiyoshi Hasegawa, Junichi Shindoh, Suguru Yamashita,Yoshihiro Sakamoto, Masatoshi Makuuchi, Norihiro Kokudo,

Background

Relapse is common after the resection of colorectal liver metastases (CLM); however, the optimal treatment for such recurrent disease remains uncertain. We investigated whether repeat resections for successive recurrences of CLM provide survival benefit on the postrecurrence survival.

Methods

We reviewed patients who underwent upfront, curative resection for CLM at our center during a 15-year period. Of these, 263 patients who had not received any other perioperative treatment for the metastases were eligible for our analysis. The recurrence-free survival (RFS0) after the initial hepatic resection and after the first (n = 108), second (n = 43), and third (n = 15) repeat resections for recurrent disease were assessed (RFS1-3). The overall survival after the initial hepatic resection and the postrecurrence survival (n = 198) also was assessed.

Results

The median RFS0 was 0.8 years, and RFS1, RFS2, and RFS3 were 1.3, 1.1, and 2.0 years, respectively. The hazard ratio for RFS for the first, second, and third resections versus the initial hepatic resection was 0.9 (95% confidence interval [95% CI] 0.7-1.1; P = .34), 1.00 (95% CI 0.7-1.4; P = .97), and 0.7 (95% CI 0.4-1.3; P = .29). The 5-year and 10-year OS rates were 54.6% and 42.2%, and the 5-year and 10-year postrecurrence survival was 34.3% and 28.6%, respectively.

Conclusion

Repeat resection in patients with recurrent disease after CLM resection is beneficial, offering the potential for cure in a small proportion of patients with recurrent disease

4. Minimally invasive surgical techniques for pancreatic cancer: ready for prime time?

Journal of Hepato-Biliary-Pancreatic Sciences

Authors: Marc G. Mesleh, John A. Stauffer, Horacio J. Asbun

http://rd.springer.com/content/pdf/10.1007%2Fs00534-013-0614-2.pdf

http://rd.springer.com/article/10.1007/s00534-013-0614-2/fulltext.html Abstract

Background

Minimally invasive surgical techniques for pancreatic cancer are being applied with increasing frequency. With support of the literature, the location of the tumor within the pancreas is the factor which determines if these techniques can be safely used routinely by pancreatic surgeons.

Methods

Literature supporting minimally invasive techniques for all types of resections for pancreatic cancer was reviewed.

Results

Multiple meta-analysis regarding laparoscopic distal pancreatectomy all support the routine use of laparoscopy for these lesions. There are several case series describing the safety and efficacious use of laparoscopy in pancreaticoduodenectomy, and results have been promising in these highly specialized centers.

Conclusions

The location of the tumor within the pancreas remains the most critical factor in the use of laparoscopy as the standard of care. Lesions in the body and tail, which are readily resected with a distal or subtotal pancreatectomy should be performed laparoscopically unless there is a clear reason why not to do so. Lesions in the head of the pancreas have been shown to be removed safely and effectively with laparoscopy. However, the technical skills necessary and the ability to teach these to trainees are the limiting factors to widespread use. Further series are necessary to assess if the laparoscopic approach to pancreaticoduodenectomy will play a similar role as the one it plays in the surgical treatment for distal lesions.

5. Specialty Updates

- Computed-tomography angiography (CTA) is more accurate than nuclear-stress myocardial perfusion imaging (MPI) for the diagnosis of angiography-confirmed coronary artery disease in asymptomatic patients, suggests a new study published in Circulation: Cardiovascular Imaging.
- Preliminary findings from a new study may shed some light on why supplementing with antioxidants may be a bad idea for patients with cancer. The study revealed that at least in melanoma, antioxidants promote disease progression by promoting metastasis. The results of the study are published online in Nature.
- Contrary to popular belief, an individual's personality is only slightly affected by their birth position among siblings, suggested a study published in Proceedings of the National Academy of Sciences.
- Inpatient treatment with premixed human insulin produces glycemic control similar to that of basal-bolus analog regimens in those with type 2 diabetes; however, the former led to considerably higher rates of hypoglycemia, reported a new study published online in Diabetes Care.
- Interim data from a clinical trial led by the West African Network for Clinical Trials of Antimalarial Drugs (WANECAM) published online in The Lancet Infectious Diseases supports the safety and efficacy of the artemisinin-based combination therapy (ACT) when used for the re-treatment of adults and children over 5 kgs with malaria.
- Ischemic and hemorrhagic stroke patients who suffer from acute kidney injury (AKI) requiring dialysis have higher death rates and greater odds of entering long-term care or nursing facilities after hospitalization, reported a study published online in Stroke.
- Excessive weight gain is associated with greater body fat and weight at 7 years postpartum among mothers who begin pregnancy at normal or slight overweight, suggests new

research published online in the journal American Journal of Clinical Nutrition.

- Lithium is as effective for the treatment of manic or mixed episodes in pediatric patients with bipolar I disorder as it is in adults, suggested the first large, randomized, double-blind study of its kind, published online in Pediatrics.
- Treating uncontrolled hypertension with medication can greatly reduce the risk for a myocardial infarction (MI), stroke, and heart failure; however, the current approach to treatment can't undo all of the previous damage or restore cardiovascular disease risk to ideal levels, according to a study published in the Journal of the American Heart Association.
- Injections of botulinum toxin into the fat surrounding the heart following coronary bypass reduces incidence of atrial fibrillation immediately after surgery and a year later. (Jonathan Steinberg, MD, of the University of Rochester in New York, in Circulation: Arrhythmia and Electrophysiology)

APBI and WBI for breast cancer show similar disease-free survival at 5 years

A study reported at the American Society for Radiation Oncology meeting by Vratislav Strnad, MD, PhD, of University Hospital Erlangen in Germany has for the first time demonstrated noninferiority of accelerated partial breast irradiation (APBI) to whole-breast irradiation (WBI). Patients who received multicatheter brachytherapy APBI after lumpectomy had a 5-year local recurrence rate of 1.4% vs 0.9% for women who had WBI. The 5-year disease-free survival and overall survival were similar between treatment groups.

"These are daily practice-changing findings. Partial breast irradiation, using multicatheter brachytherapy, can be considered a valid and effective option that can be offered for all low-risk breast cancer patients in routine clinical practice," said Vratislav Strnad. The study is published in The Lancet. (Medpage Today)

Methods :

Clinical publications and trials of AFG to the breast from the past 5 years were examined. Attention was focused on the different AFG steps and the clinical outcomes, in order to highlight the strengths and weaknesses of the available protocols.

Results :

Recent studies have concentrated on new techniques to improve fat viability and graft intake. However, all of these studies use different protocols at each step of the procedure. Furthermore, results may vary depending on the technique used for fat harvesting and processing.

Conclusion :

This review points out the recent advances in breast AFG techniques and their associated outcomes and complications. The bibliography has been carefully examined to reach a consensus so that recommendations could be made for each step of the technique with the aim of improving graft viability and long-term volume maintenance.

Forthcoming events:

- 14th Annual conference of the North East Chapter of Indian Association of Pediatric Surgeons to be held in Tezpur Medical College, Tezpur on 6th February, 2016.

  Organizing Chairman: Prof. N.C.Bhattacharyya, 9706057697.

  Organizing Secretary: Dr. J. Basumatary, PH:9435168628
- 11th National conference and Live operative Workshop of Pediatric Endoscopic Surgeons of India to be held at IMS and SUM Hospitals in Bhubaneswar, Odisha from 12-14th February, 2016.
- 13th Annual conference of the Indian Chapter of the International Hepato-Pancreato-Biliary Association 2016 to be held in Ahmedabad from 29th to 31st January, 2016.
- National conference on Obesity and Metabolic Surgery to be held in Chandigarh from 12th -14th February, 2016.
- XIII National Congress of Indian Association of Gastrointestinal Endo-Surgeons 2016 to be held in Srinagar, from 21st to 23rd April.
- XXVII Biennial Congress of The International Society of University Colon & Rectal Surgeons & the 39th Annual Conference of the Association of Colon & Rectal Surgeons of India to be held in Mumbai from September 23-25, 2016.

Association News

FROM THE DESK OF HON. SECRETARY
BRIEF REPORT OF ASSAM STATE CHAPTER OF ASI FOR THE YEAR 2015:

Respected esteemed members of Association of Surgeons of Assam, (Assam State Chapter of ASI). Here I would like to present the brief annual report of the Association for the year 2015.

Present executive committee of Assam chapter of ASI took over charge on 10th Jan, 2015. The Chairman and Hon Secretary of our chapter attended the Chapter & Sectional meeting held head office of ASI, at Chennai on 1st. March 2015.

Academic activities: (1) Guwahati city branch organized ASI North East Zone CME on 7th & 8th Mar'15. Attended by Surgeons and post graduate students from all the north eastern states. (2) Mid term CME of Assam Chapter was held at Hojai, Nagaon on 23rd May 2015. (3) A two day CME on BURNS was also organized by Department of Plastic Surgery & Burns in Association with APSNEI (Association of Plastic Surgeons of North East India) and ASA (Association of Surgeons of Assam) on 5th and 6th August, 2015, at Guwahati Medical College & Hospital. (4) A CME on hernia along with a workshop on 17th Oct 2015 at GNRC, Guwahati. (5) A CME was organized on 28th Nov, 2015 evening at Guwahti with initiative of swagat endo-laparoscotic Hospital along with Assam Chapter of ASI. (6) Apart frome these major scientific activities Different Branches of our Chapter had organized nineteen scientific activities to date, where Borak Valley, Bongai gaon and Guwahati chapters are in top the list.

Workshops: (1) 28th & 29th March 2015: Zonal Advanced Laparoscopic surgical Workshop was held at Shillong in collaboration with AMASI, NE Zone and Meghalaya Surgical Society. (2) 4th April 2015 : Live Hernia Workshop at Assam Medical College , Dibrugarh. (3) 29th August, 2015: A free laparoscopic surgery Workshop was held at Bongaigaon under aegis of Association of Minimal Access Surgeons of India (AMASI). (4) 15th and 16th , October 2015: Hands on training on suturing and anastomosis and live workshop on stapler haemorrhoidectomy was organized Borak valley Branch. (5) 17th October, 2015 : Hernia Workshop held at GNRC Hospital, Guwahati. (6) A live workshop on laparoscopic hernia repair was held at Marwari hospital and research centre, Guwahati under the banner of Assam chapter of ASI on 28th Nov, 2015.

Public Awareness Programs and Social service activity: (1) 22nd May 2015: A public awareness and training programme on Prevention of Burn and its initial care, in association with Burn Care Foundation, Guwahati at Hojai , Nagaon.(2) 6th August' 2015: an awareness rally on prevention of burns, followed by Mock Drill on prevention & extinguishing of fire by State Fire Brigade staff at Guwahati Medical College.(3) 29th August, 2015: A free laparoscopic surgery camp cum Workshop was held at Bongaigaon under aegis of Association of Minimal Access Surgeons of India (AMASI). (4) 23rd August,2015 : A free medical camp was organized by Rotary Club of Gauhati South and Assam State Chapter of ASI . (5) To observe International Breast cancer awareness month, .: (i) CME on Breast Cancer at Guwahati in association with Association of Oncologist of NE India on 18th October, 2015 (ii) A public awareness meeting on Breast Cancer awareness on 16.10.15 at Bali in Nalbari district (iii) A press meet cum public meeting on Breast Cancer awareness on 26.10.15 with very good media coverage. (IV) On 30th October 2015, a breast cancer awareness wakathon was held at Jorhat along with annual conference of the association.

Annual Conference: The 26th Annual conference of the association was held at Jorhat Medical College, Jorhat on 30th , 31st October & 1st November 2015. A live surgical workshop, hands on training on basics of ultrasonograpy and endoscpy and Inauguraton ceremony of the conference was held on 30th October 2015. Dr. J. N. Gohain, FRCS from Nagaon was awarded with Lifetime Achievement Award for the year 2015 during the inaugural session. Prof J. Mahanta ASICON 78 oration and Dr. G.P. Sarma presidential orations were delivered by Dr. S.J. Abraham, President of ASI and Dr. R. N. Mazumder, Chairman, Assam state chapter respectively. Guest lectures were delivered by Dr. G.V. Rao from AIG, Hydrebad, Dr. Om Tantia from Kolkata and Dr. Ravi Kannan from Cachar cancer hospital , Silchar. Academic activities like CME sessions, Free paper sessions, Video presentations, Panel discussion, Surgery master class, were held during the days of conference. Surgi quiz and Prof T. N. Dutta memorial poster presentation competitions were also held during the conference. In the General Body Meeting held on 31st Oct 2015 Prof Manoj Kumar Choudhury was elected as Chairman of the Association for the year 2016. Conference was well attended by around three hundred of delegate from Assam and N E regions.

MCI accredited hours were awarded to the participants of the conference.

Publications: Two issues of Journal of Assam Chapter of ASI (JASA),& Three issues of Newsletter "Surgery Papyrus" were published till date.

Other activities: Enrolment of 18 new members of ASI from our state.

Obituary: During the year 2015 we lost Dr. S.B. Dutta Choudhury, Past President of ASA, Dr. Kamal Khaund and Dr. Bidyut Goswami both active members of our chapter. We pray Almighty for the departed souls.

Upcoming events :: Formation of a new Branch at Borpeta along with a CME is scheduled to be held on 11th Dec 2015 at F. A. A. Medical College , Borpeta. Next issue of JASA and winter issue of Surgery Papyrus are on the way of publish in the last part of December 2015..

Thanking you all

Dr. Pulakananda Bharali
Hon. Secretary
Assam State Chapter of ASI.
pulakananda@yahoo.com.

Date: 05.12 2015, Jorhat.

INFORMATION FOR AUTHORS :

Manuscript :

* Two complete sets of the manuscripts should be submitted ; typed double spaced throughout.
* The manuscript should be arranged as follows : Covering letter, Title page, Abstract, Introduction, Methods, Results Discussion, References, Tables, Legends to figures and Figures.

Title page

* Contains the title, names of all the authors and full location of the departments and institutions where the work was performed, name of the corresponding authors.
* The name, telephone and fax numbers, and exact postal addresses of the author to whom communication and request for offprints are to be sent should be typed in the lower right corner of the title page
* A list of abbreviations used in the paper should be included. In general, the use of abbreviations is discouraged unless they are essential for improving the readability of the text.

Abstract :

* The abstract should be unstructured comprising of less than 250 words..

Introduction :

* The introduction should state why the study was carried out and what were its specific aims.

Methods :

* These should be described in sufficient detail to permit evaluation.
* Ethical guidelines followed by the investigators should be described.

Results :

* This should be concise and include only the tables and figures necessary to enhance the understanding of the text.

Discussion :

* These should consist of review of the literature and relate the major findings of the articles to other publications on the subject. The particular relevance of the results to the health care in Assam should be stressed.

Examples of common forms of references are :

Articles :

* Paintal As. (1955) Impulses in vagal afferent fibres from specific pulmonary deflation receptors. The response of these receptors to phenylguanide, potato S-hydroxytamine and their role in respiratory and cardiovascular reflexes.
* Q J expt Physiol 1955; 40-89-111

Books :

* Stansfield A. G. Lymph mode biopsy interpretation. New york: Churchill Livingstone, 1985.

Articles in Books :

* Strong MS Recurrent respiratory papillomatosis. In Evans JNG (ed). Scott Brown's Otolaryngology. Volume 6. Paediatric Otolaryngology. London : Butterworth, 1987 : 466-70

Tables :

* These should be typed double spaced on a separate sheet with the table number (in Roman numerals) and above the table and explanatory notes below the table.

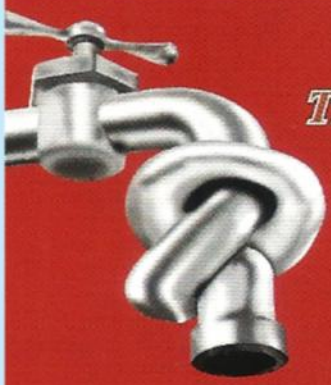
Legends to figures :

* These should be typed double spaced on a separate sheet and figure numbers corresponding with the order on which the figures are present in the text.
* The legend must include enough information to permit interpretation of the figure without reference to the text.

Figure :

* The labelling must be clear and neat.
* All photomicrographs should indicate the magnification of the print.
* Special features should be indicated by arrows or letters which contrast with the background.
* The back of each illustration should bear the first author's last name, figure number and an arrow indicating the top. This should be written lightly in pencil only.
* Do not use clips on photographs and artwork.

Please send articles to hemontdut@yahoo.co.in or by Post to the editorial office.



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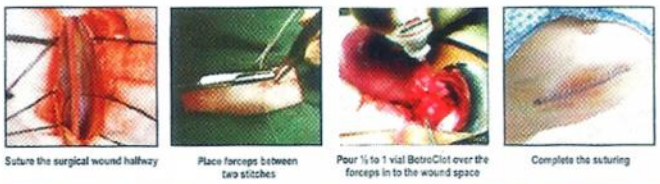

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