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**ARTHROSCOPIC AND
ENDOSCOPIC SURGERY
IN ORTHOPAEDICS**

**FLEXI URS AND LASER
LITHOTRIPSY- A BOON TO
PATIENTS AND UROLOGISTS**

**LAPAROSCOPIC SURGERY FOR
CYSTIC LESION OF PANCREAS
- CASE REPORT & REVIEW**

**LAPAROSCOPIC
PYELOPLASTY IN A CHILD**

**TRANSARTERIAL
CHEMOEMBOLISATION(TACE)
FOR LIVER MASSES**

**DREZ RHIZOTOMY
PROCEDURE FOR
NEUROPATHIC PAIN**

**MINIMALLY INVASIVE
SURGERY - BRAIN & SPINE**

**KAUVERY HOSPITAL
TRICHY MARATHON**

DOCTORS FAM FEST

**"SPECIAL
EDITION ON
MINIMALLY
INVASIVE
SURGERY"**

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**FROM THE
EDITOR'S DESK**

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SENIOR CONSULTANT UROLOGIST

Dear Friends,
Welcome to 18th edition of CAPSULE. In this edition we are presenting 'MINIMAL ACCESS SURGERIES' done in various departments. I thank all the authors and their team for their contribution.

Surgery is the first and the highest division of the healing art, pure in itself and eternal in its applicability. In its history, large incisions were an absolute necessity to a successful procedure. Exposure was the key to a safe and successful operation.

Surgeons have traditionally attempted to find new methods to treat their patients' afflictions while reducing the injury caused by the treatment, hence the evolution of minimally invasive techniques. Though exposure is still essential for a safe and successful operation, it is now possible to access body cavities by making smaller incisions.

Minimally invasive surgery may be as old as humanity. The actual practice of MAS (Minimal Access Surgery) can be traced to early 18th Century. In 1795 Bozzini developed the Lichtleiter, a crude endoscope which used

a candle for illumination. In 1901, Kelling performed the first examination of the abdomen using a cystoscope in a dog. In 1882, Carl Langebuch of Germany had performed the first open cholecystectomy. One hundred years later on 12.09.1985. Prof. Dr. Erich Muhe performed the first laparoscopic cholecystectomy. In 1985, Erich Muhe was ostracized for lap. Cholecystectomy, until his recognition by SAGES in 1999. The revolutionary nature of this procedure has been unprecedented in surgical history, and it has been concluded to be the cultural change in the field of general surgery, rather than the operation it replaced. The popularity of Minial Access Surgeries led to a new domain surgical field. At Kauvery Hospital, we are equipped with the State-of-the-art instruments and highly skilled professionals to perform MAS in Department like Gastroenterology, Urology, Neurosurgery, Cardiothoracic surgery, Ortho, Gynecology and various other departments.

Minimal Access Surgery - " A BIGGEST small change that can change the quality of life of your patient!

Arthroscopic and Endoscopic Surgery in Orthopaedics

ORTHO+ PAEDICS

Orthopaedics from its humble beginnings of treating deformities in children has matured in treating fractures, dislocations, joint diseases. Joint replacements and internal fixation of the fractures have become everyday practice in an Orthopaedic surgeon's life.

However Orthopaedics has evolved to treat conditions of not only the bone and arthritis of joints but also the muscles, tendons, ligaments, fasciae and even the nerves. Tendon and ligament tears, impingement, enthesopathies, nerve entrapment are now treated successfully with arthroscopic and endoscopic surgeries, which help to improve quality of a patient's life. This article is to highlight the current practice advances in this field.

Applied Bio mechanics

Skeleton forms the back bone for the man to function and protection. **206 bones forming 360 joints with 900 ligaments** stabilize the joints to give controlled movements. There are over 640 skeletal muscles with the help of tendons move the joints and thus the limb. *(If you want to walk, it takes over 200 muscles to work in a coordinated way)*. The muscles do need the nerve to stimulate them and the energy to get them going. The problems thus can be either in the muscles, tendons, ligaments, cartilage, fasciae and pressure on the nerves by other structures.



By
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Causes of muscle tendon pathologies, nerve.

Muscular weakness may either be structural or non structural. **Tendon** and muscle **tears, impingement, muscle contractures, enthesopathies** form the majority of structural causes. Rotator cuff tears, Biceps lesions in the shoulder, Tennis elbow, Dequervains teno synovitis in the wrist, Trigger finger in the hand, Iliotibial band syndromes, equinus contractures of the ankle are some of the examples.

Nerve entrapment such as carpal and cubital tunnel syndrome, Supraspinatus nerve entrapment, medial plantar nerve entrapment in the foot are some of the causes affecting the muscle function secondarily and causing pain and weakness of the limbs.

Endoscopy in Orthopaedics

(Endo-inside scopy-visualization)

Visualizing the interior of the body with the telescope and assisted with modern High definition cameras and monitors is the fundamental of endoscopy. Doctors and patients alike relate to gastrointestinal investigations and interventions to endoscopy. However the same technique, albeit with different instruments are used in other specialities. *One would not expect this technique to be used in Orthopaedics, understandably, through this technique dates back to 1920*

Technique

It is common to use 4.5mm **telescope** to visualize spaces namely joints, bursae. Other tissue planes can be opened to visualize muscles, tendons, nerves and vessels. **Radio frequency probes** are often used to remove unwanted tissues and to open up spaces for procedures such as repair of tendons. There are **smaller telescopes as little as 1mm** and longer for procedures in and around hip joints. **Children do need smaller scopes** such as 1.9mm and 2.4mm scopes for large joints and smaller joints and spaces need such scopes. Instruments that match these smaller scopes are available and also for various specific purposes.

Case and instrument illustrations

Mechanical clearing instruments such as **shaver, bone clearing burrs, tissue ablating radio frequency devices, suture passing and management devices are some of the devices in an Orthopaedic Surgeon's armamentarium.**

Tendons and ligaments do need stronger material for repair. **Fibrewire and ultrabride sutures** are so strong that they cannot be cut with scissors. Sutures need to be anchored to bone and we use metal or **Biocomposite anchors**. Suspension fixation of tissues need strong metals such as **titanium and suture** cords which self tightens without knots are technical advances.

1. *A child with septic arthritis* who would normally need open drainage of pus from the joint can be successfully treated with arthroscopic technique.

2. Developmental abnormalities in a child such as discoid meniscus can be treated entirely with this technique

3. An adult patient who *had chronic pain in the hindfoot* due to bony growth irritating the Achilles tendon can be successfully treated with endoscopic technique

4. A middle aged lady who had persistent *pain and weakness of shoulder* was diagnosed to have had a rotator cuff tendon tear. This was successfully treated with endoscopic technique and rotator cuff tendon repair.

5. *A shuttle player with Anterior cruciate* ligament tear was successfully treated with reconstruction using tendon graft. Similarly an extra articular ligament such as posterior cruciate ligament was treated with combined arthroscopic and endoscopic technique.

6. A middle aged man who had persistent pain *from tennis elbow* was treated with endoscopic technique of tendon release.

7. *A young and active man with tear of the labrum of shoulder* resulting in recurrent dislocation of shoulder can return to normal life with arthroscopic technique.

8. *A nerve such as suprascapular nerve* which needs identification for nerve graft can be isolated with endoscopic technique. The same nerve can be decompressed when affected with pressure from pathologies such as cyst.

9. *Tight gastrocnemius muscle*, a cause of heel pain can be lengthened with endoscopic technique. Carpal tunnel can be decompressed with endoscopic

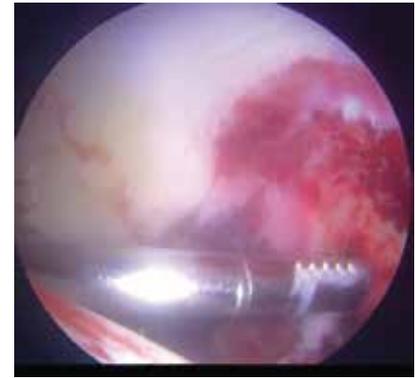


10. Arthroscopic joint fusion

technique.

10. Even a *major joint surgery* such as ankle fusion for arthritis can be done with arthroscopic technique.

11. *Hip arthroscopy* is an established technique for hip joint pathologies as shown here.



ENDOSCOPIC SURGERY IN ORTHOPAEDICS IS USEFUL IN THESE AREAS

UPPER LIMB

SHOULDER, ELBOW, WRIST

LOWER LIMB

HIP, KNEE, ANKLE, LEG SUBTALAR JOINT, HINDFOOT

Conclusion:

Gone are the days where X-rays were equated with Orthopaedics. Magnetic resonance imaging (MRI) CT Scan Ultrasound with improved clinical diagnosis for extremity problems have changed many a patient's life and functions.

We have shared a sample of the endoscopic and arthroscopic techniques, conditions and armamentarium at an Orthopaedic Surgeon's disposal available right here in our home town.

Laparoscopic Surgery For Cystic Lesion Of Pancreas – -Case Report & Review



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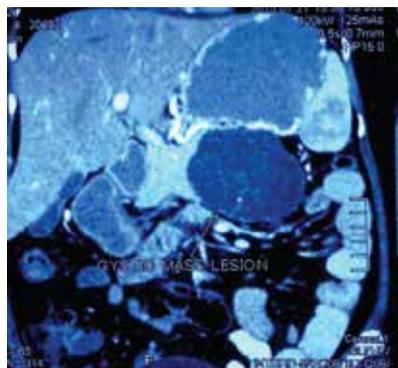
36 year old female presented with left upper abdominal pain of three months duration. There was history of intermittent fever for 1 month and haematemesis (small volume) for 1 week. She had loss of appetite and weight. She also had a past medical history of recent onset diabetes. She underwent medical termination of pregnancy few weeks back because of her current medical illness.

On examination, patient was afebrile with stable vitals. Mild pallor was present. There was minimal tenderness in left hypochondrium. No other abnormalities were detected.



Upper GI endoscopy showed an isolated gastric varix, which was not bleeding at the time of endoscopy.

Her CECT abdomen showed a large (10cm), well defined, thin walled cystic mass lesion with internal septations seen involving the body and tail regions of pancreas. Tiny calcifications were seen in the wall and there were internal septations within the cyst. The splenic vein was not clearly visualized (?infiltrated). The lesion was intending the posterior surface of greater curvature of stomach closely abutting the spleen, left adrenal and left kidney, however no infiltration seen to these organs. These features were suggestive of possible mucinous cystic neoplasm. There was mild splenomegaly, multiple dilated portosystemic collaterals seen in the fundus and the body of stomach, peripancreatic and splenic hilar regions (left sided portal hypertension) and this was probably due to splenic vein obstruction from the tumour. The uterus was bulky with minimal fluid collection and air pockets (post MTP status)



CT Showing Cystic Lesion of Pancreas

Her serum tumour markers were within normal limits. CA19-9=16.1 (0-40) and CEA=3.65(0-4.9). A most likely diagnosis of mucinous cystic neoplasm of pancreas with splenic vein obstruction causing isolated gastric varices was made. After informed consent, we proceeded for laparoscopic distal pancreatectomy with splenectomy. We were not planning to preserve the spleen because of suspicion of infiltration into splenic vein causing left sided portal hypertension and also to cure her recurrent upper GI bleed due to gastric varices.

Laparoscopic Distal Pancreatectomy with Splenectomy Procedure :

One 10-12mm Excel port, one 10mm and three 5mm ports were placed. The findings were: 10cm sized cystic lesion involving body and tail of pancreas with engorged short gastrics, no peritoneal or omental disease, no gross lymphadenopathy, no liver metastasis. Gastro-colic omentum mobilized with Harmonic. Lesser sac entered. Short

gastrics clipped and divided. Retropancreatic dissection was done close to neck giving margin for the tumor. Splenic artery ligated, clipped and divided just distal to its origin from coeliac. Splenic vein ligated, clipped and divided. Pancreatic neck transected with Echelon GIA 60 green cartridge maintaining margin from the tumour. Distal pancreatectomy with splenectomy done en bloc with harmonic. Drain was placed. Specimen retrieved through small pfannenstiel incision after placing the specimen in a large endobag.

Total operating time was 2 hours and 45 minutes and blood loss was 75mls. Her postoperative period was uneventful. She was able to ambulate from the second day. Post splenectomy vaccine prophylaxis was given and also started on oral penicillin. Her drain was removed on the 5th day after checking the drain fluid amylase. She was discharged on the 6th postop day.



Specimen photograph

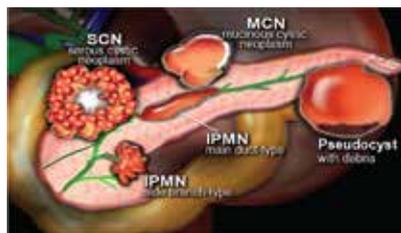
Histopathology showed mucinous cystadenoma of pancreas. No features of invasion or malignancy. No lymph nodal metastasis. Resection margins were clear. At 1 year follow-up, she is doing well with no evidence of recurrence or symptoms.

Discussion :

Cystic Lesions of Pancreas:

A brief review of common cystic lesions of pancreas:

1) Pseudocyst of Pancreas



This is not a true cystic lesion as it lacks epithelialized wall. These are more common than true cystic lesions. Pseudocyst is a chronic collection of

amylase rich fluid enclosed in non-epithelialized wall. It is formed after acute pancreatitis, chronic pancreatitis, and pancreatic trauma. It takes 4-8 weeks for the formation of pseudocyst. Up to 50% of the patients are symptomatic. The presence of persistent pain, early satiety, nausea, weight loss, elevated pancreatic enzyme levels in plasma suggest the diagnosis. CT scan and USG are used to diagnose. ERCP and MRCP are useful to detect ductal anomalies and ductal communications. Endoscopic USG (EUS) guided FNAC will help to differentiate pseudocyst from the cystic lesions of the pancreas. The features of pseudocyst on EUS+FNA are high amylase, low mucin and low levels of CEA.

Spontaneous regression of pseudocyst has been documented in 70% of cases, this is particularly true for pseudocysts smaller than 4cms. Transgastric or transduodenal endoscopic drainage are safe and effective if the pseudocysts are in close contact (<1m) with the stomach or duodenum. Surgical drainage options are cystogastrostomy, cystoduodenostomy, roux - en - y - cystojejunostomy depending upon the position of cyst.

2) Mucinous Cystic Neoplasm (MCN)

MCN of the pancreas, more common in females, mean age at presentation is 5th decade, typically found in body and tail of pancreas, presented with vague abdominal pain. A history of pancreatitis found in 20% of the patients. CT characteristics are solitary cyst with fine septations and surrounded by rim of calcifications. Presence of eggshell calcifications, large tumor size, mural nodules on cross sections are features of malignancy. EUS+FNA and cystic fluid analysis demonstrate mucin rich aspirate with high CEA levels (>192 ng/ml) and low amylase levels. Standard treatment for MCN is pancreatic resection. If MCN are benign no further treatment is required. If malignant, adjuvant chemotherapy may be required.

3) Serous Cystic Neoplasm (SCN)

More predilection for head of the pancreas, occurs in age group of 60-70 years, presents with mild abdominal pain and obstructive jaundice, radiographic appearance on CT are

central calcifications with radiating septa giving the "sunburst" appearance. Resection is rarely needed. Surgery is considered only in large tumors (>4cm) or rapidly growing lesions. EUS+FNA and cystic fluid analysis demonstrate aspirate with low mucin, low CEA levels and low amylase levels.

4) Intraductal Papillary Mucinous Neoplasm (IPMN)

Three types of IPMN - side branch, main duct, and mixed types. They present with abdominal pain, and features of acute pancreatitis. EUS+FNA and cystic fluid analysis demonstrate mucin rich aspirate with high CEA level (>192 ng/ml) and high amylase level.

a) Side branch IPMN:

These may be focal involving single side branch or multifocal with multicystic lesions throughout the length of the pancreas. Risk of malignancy (10-15%) is related to the size of lesion, thickening of the cystic wall, jaundice, pain and diabetes.

If the size is <1 cm, risk of malignancy is small and surveillance with CT or MRI in 1 year is appropriate. If size is between 1-3 cm imaging at 6 months is appropriate. Lesions more than 3cms, presence of mural nodules or thick walls and symptomatic lesions should undergo resection.

b) Main duct IPMN:

It may be focal or diffuse, malignant risk is about 30% to 50% at the time of presentation, thus surgical resection is cornerstone of treatment.

Partial pancreatectomy is the surgery of choice for main duct, symptomatic, and large branch-type IPMNs (>3cm). Intraop frozen section should be performed to ensure clear margins.

Conclusion:

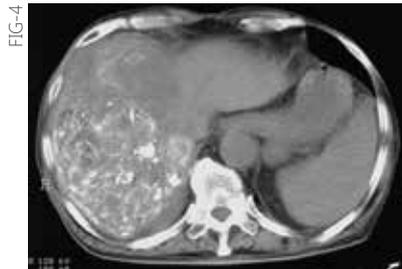
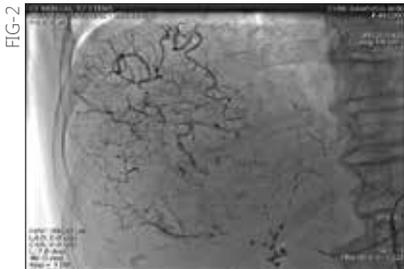
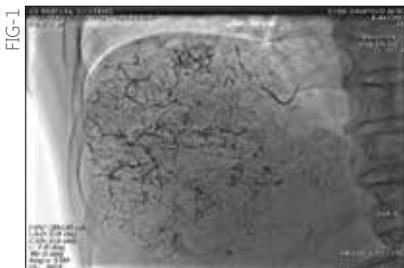
Management of cystic lesions of pancreas varies according to the pathological type of the lesion and it is important to differentiate them. In advanced laparoscopic surgical units, minimally invasive surgical resection is safe and has advantages of less bleeding, reduced morbidity and early recovery without any compromise in the quality of resection. As far as we are aware, in literature review, our case report is one of the largest cystic neoplasm of the pancreas successfully resected laparoscopically.

Transarterial chemoembolisation (TACE) for liver masses

Chemoembolisation was done successfully in our hospital for primary and secondary malignancy of liver during last month - First time in Trichy



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Preprocedural

Postprocedural

CASE: 1

A Ninety year old male came to our hospital with the complaints of loss of appetite and weight. His blood investigation showed altered liver function with increase in AFP and His CT showed. It was a large 13x10cm mass in right lobe of liver with extensive neovascularity and dilated hepatic artery. Owing to his old age, the tumor surgery was replaced with chemoembolisation. Doxorubicin and lipiodal mixture according to the weight of the patient was injected which was followed by an angiogram.

Angiogram embolisation using gelfoam and PVA particles was performed. Embolisation was followed by a CT scan, which showed stasis of drug mixture within the tumor.

FIG-1

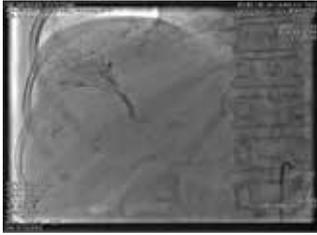


FIG-2

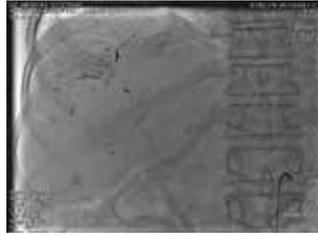


FIG-3



FIG-4



Embolisation with gemcitabin and lipiodal

CASE: 2

A 72years old female came with nonspecific symptoms to our physician and found to have mass lesion in right lobe of liver which measures 48x34mm.

Past history shows that she had carcinoma in the right breast with post-op status of 25years. USG guided biopsy of lesion done to know the nature of the lesion and it turned out to be metastatic adenocarcinoma. She was subjected to PET scan which shows solitary lesion in liver. Case was discussed with surgicalgastroenterologist and chemoembolism planned considering her general condition. A mixture of gemcitabin and lipiodal was injected into the tumor using microcatheter and followed by embolisation. Post embolisation CT scan was performed and it shows stasis of drug mixture within the tumor.

DISCUSSION:

Chemoembolisation is a procedure to deploy chemotherapeutic agents directly to a tumor with minimal exposure to normal tissue. This also increases the chemotherapeutic agent to stay long time in the tumor and finally cut off the neovascularity to the tumor.

INDICATION:

1. Hepatocellular Carcinoma.
2. Metastasis
 - a. Solitary
 - b. Multiple

CONTRAINDICATION :

1. Portal Vein Thrombosis.
2. Cirohosis of liver.
3. Obstructive Jaundice.

PROCEDURE:

After femoral puncture 5F sheath is introduced through which 5F pigtail catheter was inserted and abdominal aortogram was performed. Then selective cathetersation of celiac trunk was done and hepatic artery delineated. Using microcatheter the selective angiogram of the tumoral vessels done. Delayed phase has taken to rule out portal vein thrombosis. Then chemotherapeutic agent and lipiodal mixture was injected according to the volume of tumor. Then embolisation using PVA particles or gelform is done. Post embolisation angiogram was performed to ensure the complete cut off the neovascularity. After 24 hours check, post embolisation, CT was done to confirm the exact distribution of drug mixture to the tumor.

COMPLICATION:

1. Vascular complication (Dissection , Non tumor embolisation)
2. Pulmonary Embolism.
3. Postembolism syndrome.
4. Hepatic abscess and biloma.
5. Renal Failure.
6. Hepatic Failure.

CONCLUSION :

TACE is a good option for patients with liver tumors where surgical resection cannot be performed. Careful selection of patient and drugs will improve the outcome. Post embolisation volumetric analysis and repeat embolisation can be done for large volume tumors.

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Minimally Invasive Surgery - Brain & Spine

SPECIAL EDITION ON "MINIMALLY INVASIVE SURGERY"



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Keyhole surgery or MIS has taken the world by storm in all medical specialities. The significance of MIS is more, especially in the brain and spine. Surgeries inside confined spaces are by nature very difficult, but MIS decreases these difficulties.

The general trend in neurosurgery has been smaller openings coupled with enhanced technology, localisation, navigation, and techniques with well-designed appropriate tools. It is also aided by better visualisation with newer endoscopes and paradigm shift in the thinking itself.

The general steps included in planning and carrying out a MIS procedure are:

- 1. Study the image:** Study the tumour, its anatomy, relationship to adjacent eloquent areas, possible barriers in the approach, relationship to the calvarium etc. A "Keyhole" is very less forgiving to any error in marking and has to be done right.
- 2. Get the long axis of the tumour:** Plan so that maximal amount of work is done along the long axis, thereby avoiding looking around blind corners.
- 3. Use CSF spaces:** Early opening of CSF pathways relax the brain, open long corridors, decrease brain transgression and need to be always integrated into the initial planning.
- 4. Walk through the surgical steps:** As walking through the surgical steps

will help in methodical approach as well as pick up any short comings if any.

5. Keep incisions simple: Simple linear incisions are easier to plan and carry out. They heal easily with fewer scars and can be utilised in resurgery if necessary.

To illustrate MIS principles: MIS of the Brain:

Keyhole surgery for the brain can be broadly divided into two based on approach for surface/ convexity lesions and skull base lesions.

MIS for convexity lesions:

1. Navigation assisted: A 42 year lady with 4 months history of treatment for suspected tubercular lesion of the brain.

Clinically worsening so need for tissue diagnosis to confirm the diagnosis. MRI done showed a lesion on the posterior part of the frontal lobe along the surface. Using navigation a bur hole measuring 1*1 cm made directly over the lesion and excised totally. Patient discharged on the next day. Biopsy

planned minimal approaches are facilitating early recovery with decreased morbidity.

Extended Endo Skull Base Approach: Keyhole approaches for lesions ranging for the more commonly

Using MIS approach, initially pedicle screws were placed percutaneously followed by Distraction. Decompression was also carried out and biopsy material obtained. Lumbar interbody Fusion was also carried out using a "Bean Cage".

Patient was mobilised within 24 hours



confirmed growth of atypical Mycobacteria and so ATT was adjusted and the patient was discharged.

2. Endoscopic EDH evacuation: An 8 year old boy with frontal Extra Dural Haematoma(EDH). Usually craniotomy and evacuation of EDH is the norm. In paediatric population, after surgery differential growth will lead to dysmorphism due to involvement of the frontal bone. So bur hole made behind the hairline and using the endoscope EDH evacuated along with coagulation of the bleeder.

3. Navigation guided Endoscope assisted ICH evacuation: In ICH, instead of a craniotomy, using the Neuro Navigation access is planned along the long axis of the haematoma. A bur hole is made and under endoscopic control ICH is evacuated. In a sick/ moribund patient instead of a long procedure a minimal invasive surgery is less devastating.

MIS for Skull Base lesions: In approaching skull base lesions, there has been a huge shift in using the endoscope as a key player for keyhole surgery. Instead of extensive bone drilling or osteotomies, precisely

done Transsphenoidal pituitary tumour excision to anterior skull base Meningiomas, Trans-Clival Lesions including clipping of A.Comm/ Basilar Aneurysms are possible now. Neuro Navigation also plays a very important role in planning the amount of bone removal as well as in planning the trajectory.

MIS in Spine:

One of the most commonly done MIS procedure in the spine is Vertebroplasty. Building up on the basic principles of Transpedicular Vertebroplasty, now Pedicle screw placements, Decompressive Laminectomy and even Intra Dural Tumour excision is possible using minimal approach. The Stryker MIS system is very versatile and also modular so upgrading or building up using the pre existing system is possible.

MIS _ PLIF & Pedicle Screw with Decompression:

15 year boy with almost 6 months of h/o back pain, progressive weight loss, loss of appetite diagnosed outside with Trans Pedicle Biopsy as Tuberculosis was admitted with difficulty in walking and sitting. Radiological investigations revealed a collapsed L5 body causing compressive radiculopathy.



and discharged with minimal pain. Within 2 weeks he was able to fly out of India to restart his schooling.

In MIS, the size of the incision does not matter. It is a more focussed principle wherein the goal is in more minute study of radiology, correlating to the clinical picture focussing on reducing the mortality and morbidity by minimising tissue handling, respecting tissue planes and reducing the amount of anatomical disruption caused. MIS ensures lesser injury, faster healing and happier patient.

Flexi URS & Laser Lithotripsy

- A boon to patients and Urologists



By

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Introduction:

Urologists have increasingly employed minimally invasive techniques for the past three decades in the management of urolithiasis. With advances in miniaturisation of scopes, ureteroscopic designs and accessory instrumentation minimally invasive endourological procedures have become the standard of care in the treatment of urolithiasis.

Case Report:

A 56 year old diabetic person with decompensated liver disease came to our

centre after undergoing DJ stenting for right PUJ calculus at a private medical college, Chennai. X-ray KUB showed 2cm right renal calculus. Patient was diagnosed to have Immune thrombocytopenic purpura in 2015 and was under treatment. His platelet counts were varying between 40,000 to 70,000 per cubic mm. PT/INR were elevated with INR of about 2.24. Complete haematological workup were done. Cardiac evaluation and renal function were normal.

Patient underwent Flexible ureteroscopy (Fig.2) under general anaesthesia as PCNL and ESWL are contraindicated in bleeding disorders. 2cm calculus was identified in the lower calyx and the stone was relocated to a more favourable location. Stone was completely dusted with holmium laser. Patient had an uneventful recovery with complete stone clearance with estimated blood loss around less than 10ml.

Discussion:

Ureteroscopy (URS) was first described 25 years ago, since then it has progressed from a simple diagnostic procedure to a more complex surgical intervention allowing access to the entire collecting system. The indications for ureteroscopic management of renal and ureteric calculi are based on renal anatomy, patient characteristics and stone characteristics (Table 1). The expansion of these indications are mainly due to the introduction of 200µm holmium laser fiber and the small diameter flexible ureteroscopes with active primary and secondary deflection.

ESWL and PCNL are absolutely contraindicated in patients with uncorrected bleeding diathesis, leaving ureteroscopic lithotripsy as the only effective therapeutic alternative. Our patient who had an elevated INR was an ideal candidate for Flexi URS. Patient was positioned in lithotomy position after induction with general anaesthetics. Semirigid ureteroscopy was done using 7 Fr ureteroscope to inspect ureteral anatomy and to allow passive dilatation of the ureteric orifice. After placing 0.035 inch guidewire, ureteric access sheath was advanced and positioned in the upper ureter, monitored under fluoroscopy.

Flexible ureteroscope passed and 2cm stone was located in the lower calyx(Fig.3). Stone was relocated to middle calyx using stone basket to prevent bending of the flexible scope during laser lithotripsy. Using 200µm laser fiber stone was completely dusted with holmium laser. Patient had an uneventful recovery with negligible blood loss with complete stone clearance.



Fig.1-Flexi URS



Fig.2-Lower calyx survey using Flexible URS

Table 1 .Indications for Flexible URS:

Renal anatomic characteristics:

1. Calyceal diverticulum
2. Infundibular stenosis
3. Horseshoe/ectopic kidney
4. Concomitant ureteral stricture, UPJ obstruction
5. Lower pole anatomy Infundibular pelvic angle <70 Infundibular length >3 cm Infundibular width <5 mm

Patient characteristics

1. Obesity
2. Bleeding diathesis
3. Patient preference
4. Musculoskeletal deformities
5. Pregnancy
6. Requirement to be stone-free Airline pilots, Astronauts

Stone characteristics

1. Failed previous SWL
2. HounsfieldUnit >1000
3. Ureteral location
4. Combined approach with PCNL

Conclusion:

Flexible ureteroscopy and laser lithotripsy have completely revolutionised the way urolithiasis being treated. They are a real boon to patients especially with bleeding disorders.



QUIZ COMPETITION

Question:

36 year old female presented with severe lower abdominal pain and vomiting.
What are the findings?
What is the diagnosis?

Send your answers to capsule@kauveryhospital.com
or
WhatsApp to +91 95240 64687

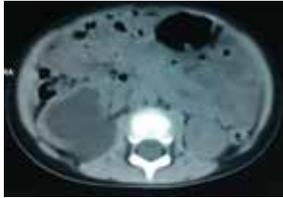


Previous Issue's Question & Answer

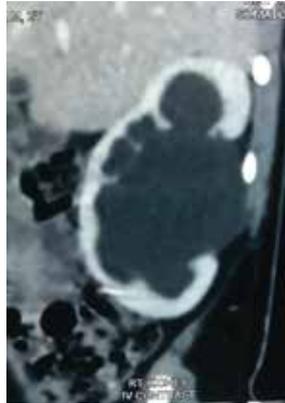
This is of a 48 years old female with history of acute chest pain and breathlessness. What is the diagnosis?

- 1) Sinus Tachycardia
- 2) RBBB
- 3) ST depression in V2-V3
- 4) S1 Q2 T3

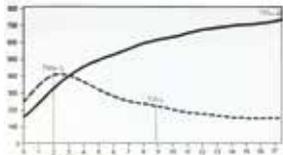
Acute chest pain with breathlessness tachycardia and RV strain pattern in suggestive of acute pulmonary embolism.



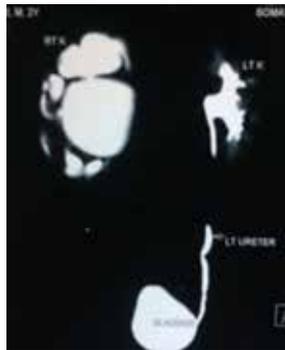
This one and half year old child presented with antenatal followup of a congenital Pelviureteric junction obstruction which is progressively worsening in followup scans. The male child was weighing 10kg with normal renal function, further investigations were done. His CT KUB revealed right PUJ obstruction with moderate hydronephrosis with no other anomalies. Diuretic Isotope Reno-gram revealed Left side normal function with no obstruction to flow and the T half of 8 min, however the right side function was good with severe obstruction to flow so T half not measurable.



CT Reconstruction showing Right moderate hydronephrosis with contrast not draining in to the ureter, Left pelvicalyceal system and ureter appears normal



Diuretic Isotope Reno-gram showing significant obstruction on the right with infinity T half value, the left side is normal with T half of 8min

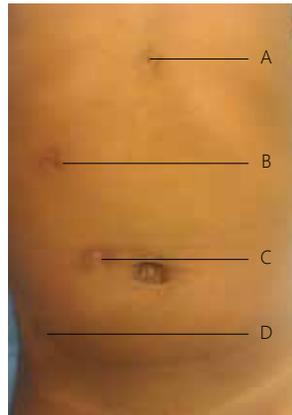


Laparoscopic Pyeloplasty in a Child

By
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 Senior Consultant
 Laser, Laparoscopy and Endourology
 Kauvery Hospital, Chennai



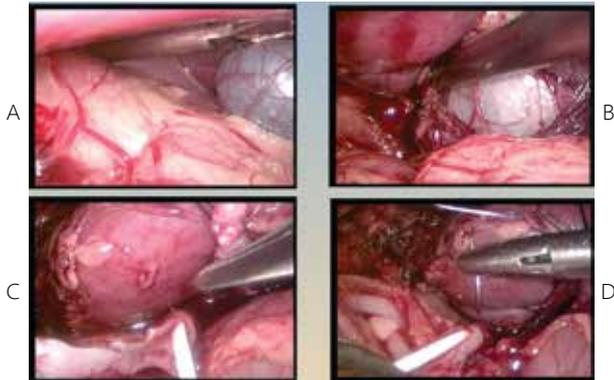
PORT PLACEMENTS



- A -5mm port for Liver retraction at the epigastrium
- B - 5mm R Hand port
- C- 5mm Camera port
- D- 5mm L Hand port and DT

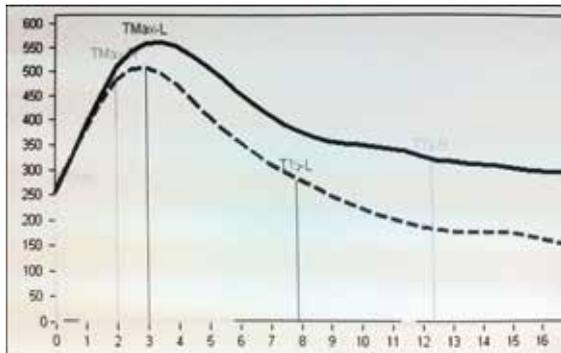
After anaesthetic assessment, the child was taken up for surgery under GA in Left Oblique position using UHD camera, Harmonic scalpel and 30 Degree 5mm

Telescope port placements were made. After retracting the liver, mesocolon dissected free and duodenum mobilised medially. Large renal pelvis with a small segment of narrow PUJ dissected, limited mobilisation of ureter done. Dismembered Anderson Hynes Pyeloplasty done using 5'0 vicryl without pelvic anchoring stitch after anti grade stent placement. 14F suction catheter kept as for drainage through the left hand port. Total estimated blood loss less than 25ml and Operating time 115min.



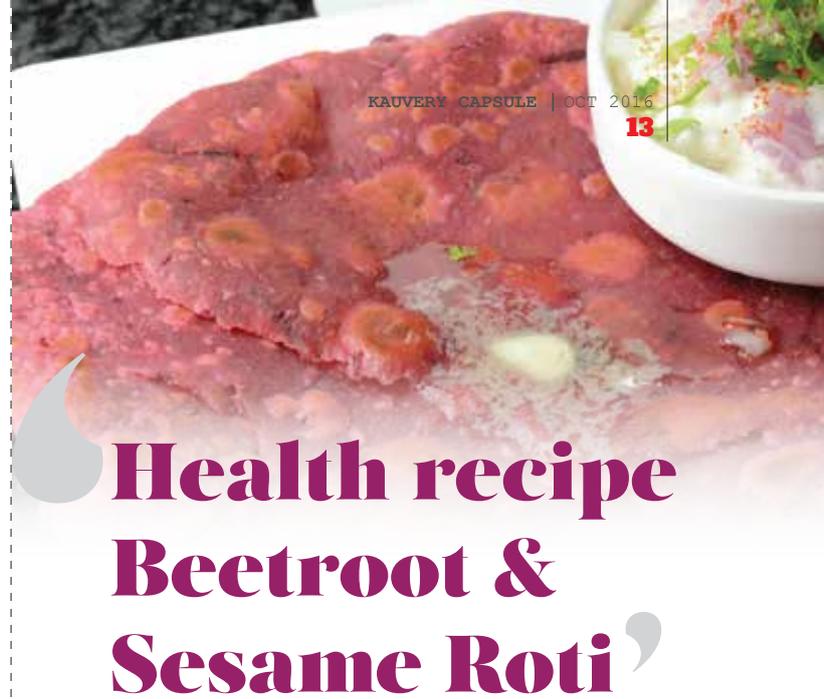
- A. Liver retraction
 B. Mobilisation of pelvis
 C. Ureteric spatulation
 D. First stitch on spatulated ureter

Child started oral feeds 6 hours from surgery. Urethral catheter removed second day after surgery. Drainage 20ml, 10ml become nil on the third day and The child was discharged after removal of drainage tube. The stent was removed after 6 weeks. Diuretic Isotope Reno-gram repeated after 3 months from stent removal.



Both kidneys showing good function with no obstruction. T half of the right kidney is 12min

It is safe and results are equal to open surgery, duration of the procedure is comparable to open procedure with less pain and small scars.



Health recipe Beetroot & Sesame Roti

Preparation Time: 10 mins | Cooking Time: 15 mins
 Total Time: 25 mins | Makes 8 rotis

Ingredients

1/4 cup boiled -peeled and grated beetroot
 1 tbsp sesame seeds (til)
 1/2 cup whole wheat flour - (gehun ka atta)
 2 tsp oil
 1/2 tsp chilli powder
 1/2 tsp coriander (dhania) powder
 1/4 tsp turmeric powder (haldi)
 a pinch of asafoetida (hing) salt to taste
 whole wheat flour (gehun ka atta)
 for rolling 2 tsp oil for cooking

Method

1. Combine all the ingredients in a deep bowl and knead into soft dough, using very little water.
2. Divide the dough into 8 equal portions and roll out each portion into a circle of 100 mm (4") diameter, using a little whole wheat flour for rolling.
3. Heat a non-stick tava (griddle) and cook each roti, using ¼ tsp of oil, till it turns golden brown in colour from both the sides.
4. Allow the rotis to cool completely.

Nutrient values per Roti

Energy	55 cal	Fat	3.2 gm
Protein	1.1 gm	Iron	0.5 mg
Carbohydrate	5.4 gm	Calcium	22.2 mg

How to pack

Wrap in an aluminium foil and pack in a tiffin box.

DREZ Rhizotomy Procedure for Neuropathic Pain



By
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Mr Anandan, from Calicut a 50 years old man, sustained a crush belt injury in 1988 while he was working in the Gulf. He was detected to have a complete Brachial Plexus avulsion injury. He was operated in 1990 on his arm with no improvement in function. Pain in the whole of the right upper limb had been increasing steadily over the years. He had severe right hand pain which was stabbing, electric shock like and burning, which occurred daily. It is the worst kind of pain that anyone could have. He had consulted several doctors in the last 10 years and had all possible allopathic and nature treatment with no improvement. Mr Kiran from Bangalore sustained a similar Brachial Plexus avulsion injury from a road accident and suffered from pain for 14 years. He had not slept for many years and had a terrible life.

Neuropathic pain is a complex, chronic pain state that usually is accompanied by tissue injury. With neuropathic pain, the nerve fibers themselves may be damaged, dysfunctional, or injured. These damaged nerve fibers send incorrect signals to other pain centers.

Mrs Jayalakshmi a 45 year old lady sustained a road accident and was left paraplegic. She developed severe pain in both her legs which did not respond to any medical treatment. There were 11 other similar patients with severe neuropathic pain failing all other modalities of treatment. After consulting the Spine Centre at Kauvery Hospital, they got operated and relieved out of their pain. There are several hundreds of patients with such injury without proper cure to offer. Most common causes of such injuries are road accidents and often fall from height. 25% of patients with these injuries develop severe pain in the whole limb either due to spinal cord damage or avulsion of nerve roots from the spinal cord. The pain is typically burning, stabbing, prinking, electric shock like, sharp and continuous. The pain can get worsen at times and some patients even commit suicide unable to cope with pain. Pain can be aggravated just by talking, movement of body, breeze from fan, noise from the surroundings and water during bath. They cannot talk to anyone, can't go out of the

home or lead a normal family life. Some patients are house bound for like 15-20 years having serious psychological issues. They lose their job, family, children, friends and social contact, turn out to be the major cause of physiological stress, and a prime reason to commit suicide. Medical treatment includes high doses of sedative and neuropathic drugs which will make them drowsy and sleepy continuously. The medications are very expensive too, where many patients discontinued medicines due to severe side effects.

At Kauvery Hospital, Neuro-Spine department, with state-of-art amenities performs pain procedures in the spinal cord. These surgeries are performed by only a few surgeons in India and by no one else in Chennai. He has treated about 14 patients in the last 5 years with more than 90% success in relieving pain.

13 procedures have been done for Brachial plexus pain and one for spinal cord injury pain. This is a microsurgical procedure on the spinal cord that involves mapping the spinal cord with Intraoperative neuromonitoring and identifying the areas where there is nerve damage in the spinal cord and making multiple lesions at a very specific area to remove the pain source. This is a high-risk surgery, which is technically demanding. Serious side effects like paralysis is possible if the procedure is not done by adequately trained persons. A team of Anaesthetist, Neurologist and Neurosurgeons performed this procedure for about 8-12 hours. The three patients mentioned above were treated in Kauvery hospital and are almost 100% relived of pain. Surgeries where there is severe pain like Spinal cord Injury, Cancer pain, post herpetic pain, trigeminal neuralgia pain and spasticity from cerebral palsy can all be treated in a similar manner. Kauvery hospital is fully equipped to perform such procedures with the latest technology.

WELCOME
TO
DOCTORS'
FAM
FEST
2016

kauvery
hospital



Doctor's Fam-Fest

31st July 2016, will always be cherished and remembered by the Doctors and their families, participated in the event of "Fam-Fest-2016", bringing the profound nostalgic memories associated with the tradition and culture. To commemorate the Doctor's day on July 1, our referral doctors along with their family members around 189 people participated in the event.

The fun- filled energy was carried around the program throughout encompassing complete happiness across all participants. The day ensured a complete off-beat from the daily chores and ensured a day of celebration and togetherness.





Organ donation is a noble mission, bringing a potential transformation in the humanity. Organ transplant is a significant breakthrough in the medical industry, which helped people to prolong their lives. The organ donation is still in the nascent stage, which needs more awareness to enable a paradigm shift in the lives of the people.

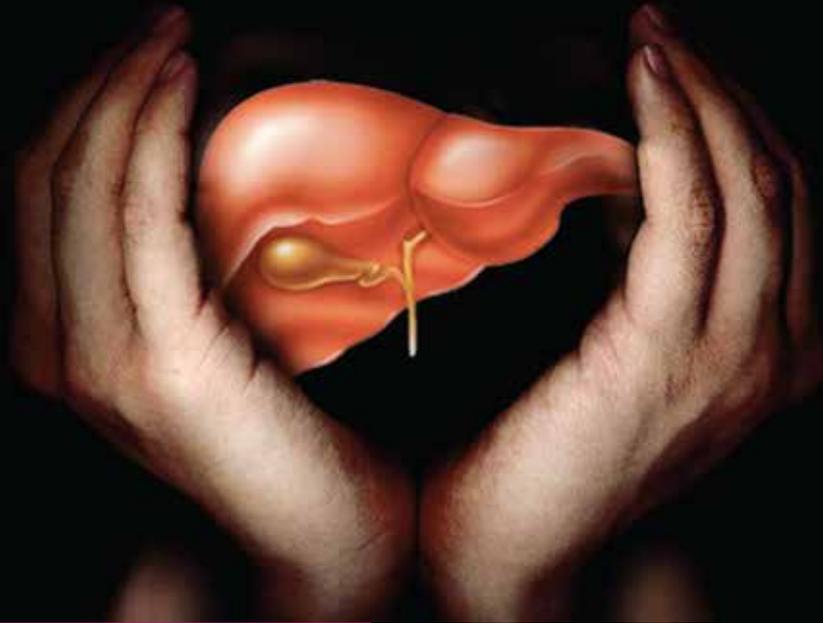
Kauvery Hospital, CII(The Confederation of Indian Industry), and Yi(Young Indians) have joined together to conduct the second successful consecutive marathon event, following the 2015's grand success. "Kauvery Hospital Trichy Marathon" was organized for the noble cause of organ donation on 25th September 2016. Totally three Lakhs worth prize money was distributed to the winners. The prime motto of this year's marathon is to raise awareness on the noble cause of "Organ Donation" to reach the ultimate state that "Let no organs be wasted".

There was an overwhelming response of more than 10,000 participants incorporating categories like 5Km, 10Km and 21Km. The event was flagged off by Mr. Ramesh Kymal, Managing Director of Gamesa. Dr.Meena, former Vice Chancellor of Bharathidasan University was the special guest of honor. Other Key corporate representatives have also participated in this event. Certificates and medals were distributed to all the participants completing the marathon. Totally three Lakhs worth prize money was distributed to the winners.





Inauguration of Speciality for Liver Diseases and Liver Transplantation



Dedicated Liver ICU is opened by the Managing Director Dr.Chandra Kumar on 29th August 2016, In the Cantonment Hospital's ICU complex located at the fifth floor. This marks the inauguration of Liver Transplant services in Kauvery hospital Cantonment, Trichy.

This ICU is equipped with advanced monitoring facilities, ventilators and CRRT dialysis machines, and HEPA filter ventilation system to facilitate a clean environment and advanced monitoring of Liver failure and Liver transplant patients.

In the Operation Theater unit, two dedicated theaters have been restructured with lamina floor ventilation systems, advanced theater lighting setup, operating tables and Liver transplant related equipments including CUSA, ARGON (APC), Thromboelastogram (TEG), advanced non invasive cardiac monitors and micro vascular surgical instruments.

A dedicated Liver clinic is being conducted every Wednesday at 10 am in Kauvery hospital Cantonment for Liver failure patients.

Kauvery hospital Cantonment- Centre for liver disease and Liver Transplantation

Facilities

- State-of-the-art theater facilities and equipments
- Trained staff for pre-operative care
- Dedicated ICU and Liver clinic
- Experienced Professional Team



Center of excellence for Nephro urology.

KIDNEYS
WORK FOR
YOU 24X7.
YOU
CAN
WORK FOR
THEM FOR JUST
A FEW HOURS
A YEAR.

Flex URS	Renal transplantation
PCNL	Hemodialysis
LASER Prostatectomy	CAPD
Andrology	Paediatric Nephrology

WE EXTEND A HEARTY WELCOME TO OUR KAUVERY FAMILY



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DR.G.PALANIVELRAJU., MS (GENERAL SURGERY), MRCSED.,
GASTROENTEROLOGY,
TENNUR, TRICHY

It gives us great pleasure & pride to share with you that the high end pediatrics & neonatology department of Kauvery Hospital has been recognized by the National Board of Examinations for conducting the DNB Programme in Pediatrics.

This is an important academic milestone in our journey and comes as a crowning glory to the center of excellence in pediatrics & neonatology of Kauvery Hospital.

List of DNB Programmes

- General Medicine
- General Surgery
- Orthopaedics
- Paediatrics



For more details contact: dnb@kauveryhospital.com

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Karaikudi-630002. Ph:04565-244555

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