www.jaypeehealthcare.com

JAYPEE HOSPITAL
LIFE FIRST

NABH

Med Review published by Jaypee Hospital, Noida for Medical Professionals.

JAYPEE
MED REVIEW

October'16 - December'16
Vol. 3

Primary Angioplasty in Anomalous Left Circumflex Artery

Dr. Gunjan Kapoor - DM (Cardiology)
Director, Dept. of Interventional Cardiology (Adult)

Mr. X, 45 years old gentleman, normotensive, non-diabetic and chronic smoker was admitted with retro sternal chest pain which started six hours prior to admission. Patient had agonizing chest pain in the last two hours. His ECG on admission showed ST elevation in leads II, III, AVF, V5, V6 & ST depression in V1-V4. His echocardiography revealed marked hypokinesis of inferior and posterior wall with global LVEF ~ 40%. Patient was taken up for primary angioplasty after preloading with aspirin and clopidogrel and 5000 IU bolus dose of Heparin. Emergency temporary pacemaker was inserted since patient was showing intermittent junctional rhythm. His coronary angiography revealed type III LAD with mild plaquing. The posterio-lateral LV territory was bare with no coronary branches coming from left main artery. No separate ostium of left circumflex could be identified in left sinus. Subsequently right Judkins JR4 was taken for right coronary injection. It showed normal origin of right coronary artery which was normal. However, left circumflex artery was also seen coming from right coronary atrium and showed 100% proximal occlusion with a thrombus. Temporary pacing was done since patient was showing intermittent junctional rythm.

Patient was taken up for primary angioplasty of LCX artery, LCX was hooked with JR4 7F guide catheter. The lesion was crossed with Sion Blue and both OM1 and LCX were wired. The lesion was pre-dilated with 2x10mm balloon at 14 atmosphere. The lesion was subsequently stented with Yukon choice PC 2.75 x 18mm deployed at 14 atms and a brisk T1M1 III flow as achieved patient during the procedure required sedation with injections Phenatyl & Medazolam. He was also given Inotropic support with Dopamine and Nor-Adrenalin infusion. Post procedure, patient had achieved sinus rythm.

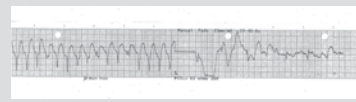
As the patient was being prepared to be shifted out of the cath lab, it was noticed that he was again on paced beats and his restlessness had increased. Intra-arterial pressure again was noticed to have fallen to 80mmHg systolic. The dosages of introtopic drugs were increased. However the restlessness persisted and patient remained hypotensive despite increasing the dose of inotropes. At this stage, it was

TABLE OF CONTENTS

decided to do a check angiography to rule out acute stent thrombosis. To our dismay, we realized that stent showed 100% stent occlusion. LCX was re-hooked with JR4 guide and Sion Blue guide wire was passed across the stent into the circumflex artery. T1M1 II flow was re-established. The stent was re-dilated with 3x15mm NC balloon & T1M1 III flow re-established. Patient was given intra-coronary Nikoran infusion .Additionally he was started on Tiroban infusion and continued on inotropic support. ACT was checked and found to be

Left coronary injection showing normal LAD and sign of non perfused myocardium.

Anomolous origin of left circumflex artery from right coronary sinus with 100% proximal occlusion.



ECG on admission s/o Inferno-Posterior MI

2 PTCA guide wire across left circumflex artery.

Reperfused circumflex artery with stent in situ.

Episode of Ventricular tachycardia post reperfusion - cardioverted with 200Joules Shock

Reperfused circumflex artery with stent in situ.

Post primary PCI - ECG s/o reperfusion

in therapeutic range. He developed few episodes of sustained ventricular tachycardia following the reperfusion, which required cardioversion with 200 Joules shock. Patient was started on Xylocard infusion after bolus xylocard and Amiodarone injection for recurrent ventricular tachycardia. Patient's rythm and blood pressure stabilized over next hour. He was gradually weaned off from inotropesin 36 hours and discharged on day 4 in haemodynamically stable condition.

Anomolous Coronary arteries: Anomolous origina of coronary arteries has been described in about 1% general population. However in a comprehensive review of 1950 angiograms, Angelini described an incidence of 5.6%. Anomalies related to right coronary artery origin is the most common abnormality seen. Left Circumflex (LCX) arising from right coronary sinus has been described in approximately 0.67% of the cases. Another study described abnormalities of LCX origin as the most common anomaly. Recognition and adequate visualization of anomolous origin is essential for proper management specially in the setting of acute myocardial infarction. Diagnostic and therapeutic procedure can become difficult in patients with anomolous origin of coronary arteries due to difficulty in engaging the guide catheter.

For suspecting anomolous origin of Left Circumflex artery from right sinus, two angiographic signs have been previously described. First is recognition of absent arterial flow into a significant area of the postero-lateral left ventricle during selective injection of main left coronary artery (sign of non-perfused myocardium) and the other is aortic root sign in left ventriculography. A similar case of 48 years old woman with acute inferior MI is described by Hendiri T it. Al in 2006.

Acute Stent Thrombosis: Acute stent thrombosis is the occlusion of the stent within 24hours of angioplasty. Acute stent thrombosis is more common in setting of Acute coronary syndrome. It has been seen more often in ulcerated lesions, in coronary arteries with T1M1 0/1 flow at baseline, in younger patients, patients on bivaluridin rather than UFH+ GPIIb III a inhibitors and patients not given pre randomization UFH. High index of suspicion is required in such patients post procedure. Such an abrupt closure needs stabilization of patient with inotropes and antiarrythmics followed by balloon inflation of stent. A second stent may be required if there is dissection. Optimization of ACT and use of GpIIbIIIa inhibitors can be helpful.

All the above mentioned steps were taken to start reperfusion across the stent in our patient.

A rare case of Giant Cell Tumour treated with Excision and Knee Joint Replacement



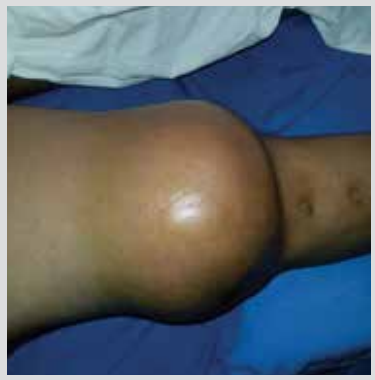
Dr. Sanjay Gupta - MS, M.Ch., FRCS
Associate Director, Dept. of Orthopaedics & Joint Replacement
Dr. Abhishek Kumar - DNB (Ortho), D.Ortho, MNAMS
Associate Consultant, Dept. of Orthopaedics & Joint Replacement
Dr. Pankaj Kumar - DNB (Ortho), D.Ortho, MNAMS
Attending Consultant, Dept. of Orthopaedics & Joint Replacement

Giant Cell Tumor (GCT) of bone is one of the most common benign bone tumours encountered in orthopaedic practice. According to Mayo clinic series they account for 5% of bone neoplasms. They typically occur between the ages of 20 and 40 years with slight female preponderance. It has a well-known propensity for local recurrence after surgical treatment. Some tumours are so aggressive for recurrence that they are often called as locally malignant tumours. We describe one such case of massive GCT of distal end of femur that grew to the size of a football.

Case Report

A 25-Year-old female presented with a huge swelling and pain in her right knee that gradually developed over a few years. At presentation she had no movement in her knee, was unable to bear weight and was bed ridden for 3 years. She had been to various hospitals having an expertise in surgical oncology and was suggested to undergo excision of tumour and fusion of knee joint. However, she and her family wanted to retain the knee function. After detailed discussion about the pros and cons of tumour excision and knee replacement with tumour mega prosthesis versus tumour excision with knee arthrodesis, a decision was made to proceed with the first option.

After thorough pre-operative check up, she was taken up for surgery under spinal anesthesia. The operation was successful. The complete tumour was excised and she was given an artificial knee joint with tumour mega prosthesis. Post-operative period was uneventful and the patient was mobilized with walker on 2nd post-operative day. She was discharged on day 5 and underwent physiotherapy and rehabilitation for 1 month after which she was able to walk independently and had full range of movement in the knee.


Clinical picture showing football size tumour of distal femur

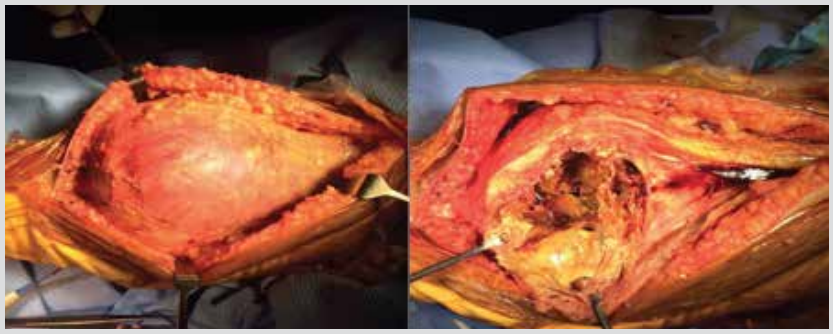

X-Ray shows large expansile eccentric lytic lesion located at lower end of femur

During operation we were meticulous in identifying and respecting the surgical planes keeping the neuro-vascular bundle safe and isolated. We managed to excise the tumour in its entirety along with the capsule. A tourniquet was used to control bleeding during surgery. Artificial mega prosthesis with distal femur replacement was implanted with bone cement after careful and calculated femoral resection.

Discussion

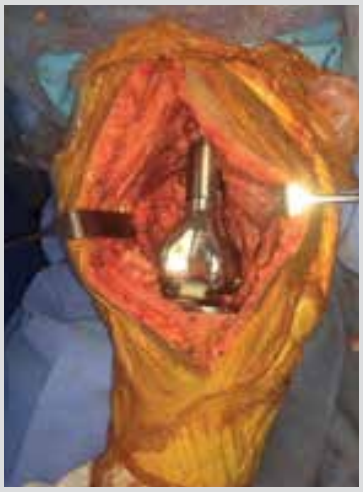
The treatment options for GCT of such a huge size are:

1. Mega Prosthetic Joint Replacement: This provides stability, mobility and early return to normal life, however are prone



Intra-operative picture showing surgical plane and extent of bone tumour

She was made to stand next day of surgery



Intra-operative picture showing hinged megaprosthesis

Post-operative X-Ray showing well fixed, aligned prosthesis

She was able to extend her knee by herself

for ultimate loosening, wear or breakage and require revisions.

2. Biologic Reconstruction: These are technically demanding, but durable procedures providing stability at the cost of mobility.

- These include autograft arthrodesis (knee, wrist and shoulder) with internal/external fixation.
- Live microvascular fibula reconstructions (e.g., around knee & shoulder, distal radius reconstruction, distal fibula GCT with ankle reconstruction).
- Ilizarov method of bone regeneration
- Osteo-articular allografts (complications include infection, nonunion, graft fracture and instability).

Dealing with this case was tricky as there were many intra-operative and post-operative challenges and overall outcome could be unpredictable.

During operation, we were meticulous in identifying and respecting the surgical planes keeping the neuro-vascular bundle safe and isolated. We managed to excise the tumour in its entirety along with the capsule. A tourniquet was used to control bleeding during surgery. Artificial mega prosthesis with distal femur replacement was implanted with bone cement after careful and calculated femoral resection. We managed to isolate and preserve the knee extensor mechanism in its entirety and hence achieved an active ROM from 0 to 90 degrees with full active knee extension.

The treatment of GCT is directed towards local control without sacrificing joint function. This has traditionally been achieved by intralesional curettage with autograft reconstruction by packing the cavity of the excised tumour with morselized iliac cortical-cancellous bone.

Regardless of however thoroughly performed, intralesional excision leaves microscopic disease in the bone and hence has a reported recurrence rate as high as 60%. Although a marginal or wide excision of the involved bone is curative if contamination is avoided, it is associated with reconstruction and disability problems. In order to counter the above problems, we performed joint replacement with tumor mega prosthesis after a wide excision and gave a very satisfactory outcome to the patient.

The Single-Tunnel Suture Fixation of Posterior Cruciate Ligament Avulsion Fracture

Dr. Atul Jain - MS (Ortho)
Senior Consultant, Institute of Orthopaedics & Spine

Background

Tibial Avulsion of PCL incidence is quite common. Fixation is the treatment of choice for acute displaced tibial bony avulsions of Posterior Cruciate Ligament (PCL), either open or arthroscopic. Open reduction is difficult in small and comminuted fragment.

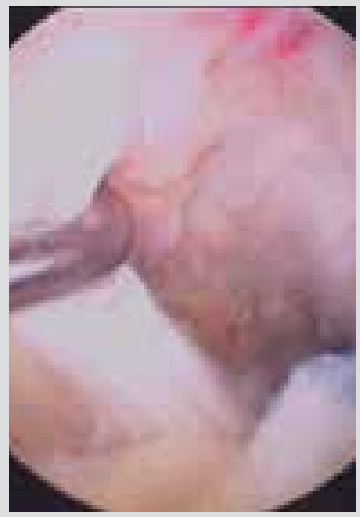
We evaluate the clinical results of arthroscopic treatment of tibial avulsion fracture of the Posterior Cruciate Ligament (PCL) by pull through suture fixation technique through a single bone tunnel.

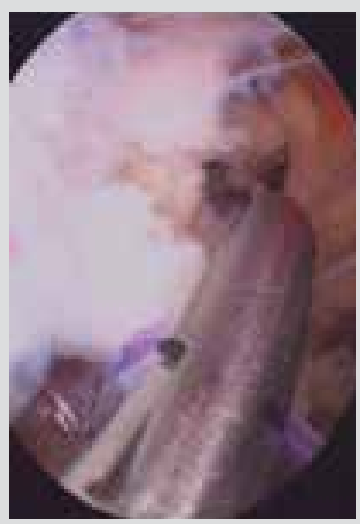
Material and methods

We arthroscopically treated 28 patients (mean age, 35.3 years) with PCL avulsion fractures using 2 posteromedial portals. The bony fragment was sutured by use of a suture hook and was then reduced into the top of the tibial bone tunnel created from the anterior tibial cortex to the bottom of the fracture bed. Slight depression of 1 to 3mm of the osseous fragment was achieved. We followed up 24 cases for more than 2 years.

Surgical technique

PCL is wrapped with suture loop (Arthrex fiberwire no 2/orthocoat) by passing the suture ends from both windows (bare area in between ACL and PCL, area between medial femoral condyle and PCL), Fig. 1,2. Both ends of the suture loop are delivered posteriorly through inferior PM portal and sliding knot is passed and seated over the osseo-ligamentous fragment, Fig. 3, 4.





Suture ends are delivered anteriorly through the tunnel and pulled to reduce the fragment and tied over the suture washer with knee in extension.

Post-Operative

Patella manipulaion and closed chain exercises immediately in post-operative procedure. Immobilsed in extension 2 weeks. ROM brace at 3 weeks.

Conclusion

The single–tibial tunnel technique seemed not only to simplify the procedure but also to facilitate slight depression of the bony fragment, which might have been useful to restore normal tension of the PCL. Clinically, this technique was reproducible and effective.

Tibial Avulsion of PCL incidence is quite common. Fixation is the treatment of choice for acute displaced tibial bony avulsions of the Posterior Cruciate Ligament (PCL) either open or arthroscopic. Open reduction is difficult in small and comminuted fragment.

Case 1

Pre-Operative X-Rays

Post-Operative X-Rays

ROM at 8 weeks

Surgical Correction of Scoliosis

Dr. Ankit Gupta- MS (Orthopaedics)
Consultant, Dept. of Spine & Deformity Correction
Dr. Saurabh Rawall- MS (Orthopaedics)
Consultant, Dept. of Spine & Deformity Correction
Dr. Devashish Sharma - D. Ortho
Associate Consultant, Dept. of Spine & Deformity Correction
Dr. Kiran Reddy - DM (Neurosurgery)
Consultant, Dept. of Neuro Anesthesia

Scoliosis is an abnormal sideways bending of spine defined as a lateral curvature of the spine of at least 10^0 with vertebral rotation. It is often associated with kyphosis which is an abnormal forward bending of spine. Scoliosis can be classified as shown in table 1. Idiopathic scoliosis is most common among children, which is detected accidentally as a trunk asymmetry or rib hump. The risk of curve progression is higher during the pre-menarchal, pubertal age and when curve is significantly higher at first presentation. A curve of 25^0 or less during the growing age require only observation which may be done 6 monthly till skeletal maturity is reached. An idiopathic curve of 25^0 to 40^0 usually requires bracing till skeletal maturity and any curve more than 40^0 during the growing age usually requires surgical intervention.

Table 1

Scoliosis Classification
- Congenital Scoliosis
- Idiopathic (classified by Scoliosis Research Society)
  - Adult (>18yrs)
  - Infantile (0-3yrs, IIS)
  - Juvenile (3-10yrs, JIS)
  - Adolescent (10-18yrs, AIS)
- Neuromuscular Scoliosis
- Degenerative Scoliosis

Fig.1: Pre-Operative Clinical Picture

Any curve more than 50^0 even in adult is likely to progress and will eventually require surgery.

Our Case

A 16-year-old boy presented with the complaint of deformity over back noticed since one year with a prominent right shoulder blade (rib hump). Patient otherwise was a healthy looking young male with normal physical and mental activity. A thorough physical evaluation was done, which revealed a right sided dorsal scoliosis (Fig. 1) with a prominent rib hump on the right side with shoulder at the same level. Patient had no neurovascular deficit. X-rays whole spine AP/Lat and side bending AP views were done, which revealed Dorsal Spine scoliosis from D5-L2 of 53^0 cobb's angle (Fig. 2) with convexity to the right side and associated rotational deformity. Pre-operative anesthetic evaluation was done and after informed consent patient was taken up for surgery.

Fig.2: Pre-Operative X-Rays

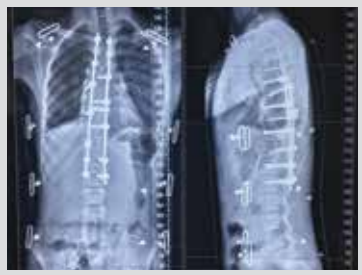


Fig.3: Post-Operative X-Rays

Operative Details

Under general anesthesia, patient was placed in prone position. Skin incision and sub periosteal exposure was done from D3–L2. Free hand pedicle screw insertion technique was used and pedicle screws were inserted at desired level between D3 – L2, then by applying manual derotation and using rod rotation technique the deformity was corrected and rod applied and tightened. The wound was thoroughly washed and locally harvested bone graft was applied over the decorticated posterior surface of spine. Subcuticular stitches were applied and steri-strips applied over the skin. Patient withstood the surgery well and was mobilized with brace on 2^{nd} post-operative day. Post-operative correction was satisfactory and cobb's angle got corrected to 17^0 (Fig 3). Patient started going to school 3 weeks after the surgery with brace on. The customized brace is to be worn for 6 months.

Discussion

Idiopathic scoliosis is the most common type of scoliosis seen in children. The goal of surgery is to prevent curve progression and correct the spinal deformity. Large deformity if not treated can lead to delayed pulmonary complications. However, early diagnosis can be quite beneficial in avoiding surgical intervention in idiopathic scoliosis. Surgery is being done to stop the curve progression, correct the deformity and thereby avoid any long term complications. Surgery usually involves instrumentation and spinal fusion, restoration and preservation of the normal spinal balance is the most important aspect of scoliosis surgery. However, early diagnosis can be quite beneficial in avoiding surgical intervention in idiopathic scoliosis. With advent of better instrumentation and technology (neuro-monitoring) even much bigger curves can be treated successfully via surgery without any complications.

Endovascular Treatment in Abdominal Bleed in Gun Shot Injury

Dr. Chandra Prakash Singh Chauhan - MD (Radiology)
Associate Director, Dept. of Radiology
Dr. Dhirendra Pratap Singh Yadav - MD (Radiology)
Consultant, Dept. of Radiology

Case Report

A 50-year-old male patient was admitted with alleged history of gunshot trauma around 11pm on 19.07.2015, near Gajraula District, Amroha. Patient was brought to Anand Hospital (Meerut) where he was found to have injury in abdomen and chest with shock and poor general condition. He was resuscitated and right sided ICD was done under LA and around 3-5 ltr. blood came out instantly. ICD klempt and blood transfusion continued and was then shifted to Jaypee Hospital with ventilatory support and vasopressin support. All required relevant investigations, CBC, LFT, KFT, PT/INR were done. Hb was 8.2gm/dl, TLC-18000, S. Bilirubin-1.2, SGOT/SGPT-1766/1733, Blood Urea & S. Creatinine was 28.6, INR -1.87. Viral marker, HIV/HBV/HCV was negative. Echocardiogram showed normal left ventricular, ejection fraction. Cardiology clearance was given. CT Angio was done which showed- Liver laceration with hepatic artery-portal vein fistulous communication. Metallic foreign body noted in D10 vertebral body with a lacerated liver tract seen from segment VIII to VII. Tract measures 13cm. On arterial phase, it showed an arterial enhancing lesion seen in segment VII measuring 6x13mm and communication seen with right hepatic artery and branch of right portal vein. No definite extravasation of contrast on present scan. Right hepatic artery is replaced and seen arising from SMA.

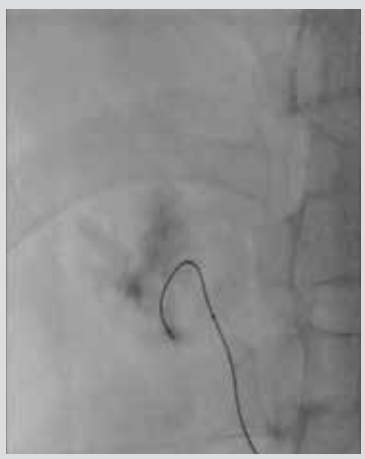
Procedure

Endovascular Coil Embolization was done in state-of-the-art Philips FD20 Clarity Hybrid-DSA LAB. The patient was taken to the Interventional Radiology (IR) suite. Procedure was done under GA. Right femoral artery access was taken with Femoral Sheath (6F). Selective hepatic arteriogram were performed that confirmed active extravasation from a right hepatic arterial branch. A "Coil Sandwich" technique was attempted, whereby coils are placed distal and proximal to the site of injury. The micro catheter was advanced as far distally as possible while avoiding further injury or arterial spasm and the vessel was initially embolized with multiple tornado 3×2mm coils (Cook Medical Inc., Bloomington, IN). An arteriogram was performed immediately after coiling demonstrated persistent extravasation. Further embolization with gelfoam slurry resulted in cessation of arterial bleeding on a subsequent arteriogram (after embolization, the patient remained hemodynamically stable and did not require further transfusion). Patient was shifted to SICU after the procedure for 12 hours of monitoring. He was discharged 11th day post procedure.

Discussion

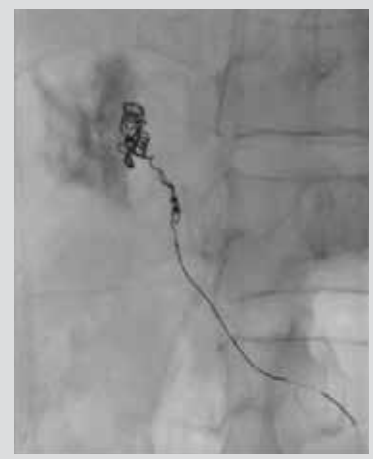
Solid organ injuries are usually treated with surgical exploration if the patient is hemodynamically unstable. Among stable patients or those where surgical control of hemorrhage is not possible, angiography with embolization is a lifesaving procedure. Most parenchymal liver injuries involve small or medium branches and

CT Angio- large hepatic laceration involving right lobe



DSA shows portal vein filling with diffuse blush

Right hepatic artery was embolized with multiple coils



Right hepatic artery was embolized with multiple coils

revascularization from distal branches after proximal embolization is not uncommon . If it is found that superselective embolization with microcoils proximal and distal to the lesion is not possible in a situation, particle or gelfoam embolization to achieve distal control followed by proximal coil embolization is recommended. Ideally, particle embolization should be performed distal to the cystic artery if possible. Extensive embolization is usually well tolerated due to the dual supply of the liver. However, in high grade liver injuries, major hepatic necrosis, biliary and abscess complications are relatively frequent. Gallbladder infarction and biliary ischemia are also reported complications. Injuries to the common or proper hepatic arteries can be also coil embolized, but placement of covered stents is recommended if technically feasible. Biliary injuries with bile leakage may contribute to delayed hemorrhage that can present with hemobilia or arterioportal fistulas after high-grade liver injuries.

Conclusion

Trauma continues to be the leading cause of death in the young population. Uncontrolled bleeding is a major factor in early mortality after trauma, contributing to 30 to 40% of trauma-related deaths. Transcatheter embolization techniques play a significant role in the comprehensive modern treatment of traumatic vascular injuries to solid organs and extremities.

Case Report on Distal Pancreatic Adenocarcinoma



Dr. Rajesh Kapoor - M.Ch. (Surgical Gastroenterology)
Director, Institute of Gastrointestinal & Hepatobiliary Sciences
Dr. Dipankar Mitra - DNB (General Surgery), DNB (GI Surgery)
Associate Consultant, Institute of Gastrointestinal & Hepatobiliary Sciences
Dr. Amit Jain - M.Ch. (Surgical Gastroenterology)
Associate Consultant, Institute of Gastrointestinal & Hepatobiliary Sciences

Case Summary

A 58-year-old ophthalmologist presented with complaint of left upper quadrant pain associated with loss of appetite and weight loss for 3 months with no h/o vomiting/fever. On examination, patient was conscious oriented, moderately built and nourished along with having no icterus/pallor/lymphadenopathy, edema; no mass palpable on P/A examination; routine lab reports were normal; CECT abdomen revealed mass in the tail of pancreas infiltrating spleen, stomach and left renal vein and upper pole of left kidney. In view of locally advanced but resectable tumour PET Scan was done to look for any evidence of metastases; it revealed no such definite evidence of metastases.

Locally advanced but resectable and patient being physically fit for major surgery was taken for curative resection; intra-operative staging laparoscopy was done initially to look for unidentified metastases missed on pre-operative CT scan to avoid unnecessary laparotomy; As the staging laparoscopy was negative for metastase en-bloc resection of tumour with adjacent organs involved was done (distal pancreatectomy with splenectomy with left nephrectomty with proximal gastrectomy with resection of proximal jejunam and DJ flexure with segmental resection of transverse colon with splenic flexure were done, reconstruction done with gastrogastrostomy, duodenojejunostomy and colocolic anastomosis); patient was extubated immediately after surgery, kept in recovery for 3-4 hrs and shifted to the ward; post-operative patient remained in stable condition, started orally on 3rd POD; drain fluid amylase levels were insignificant and removed on 5th POD; patient was discharged on 6th POD; Histopathology s/o adenosquamous

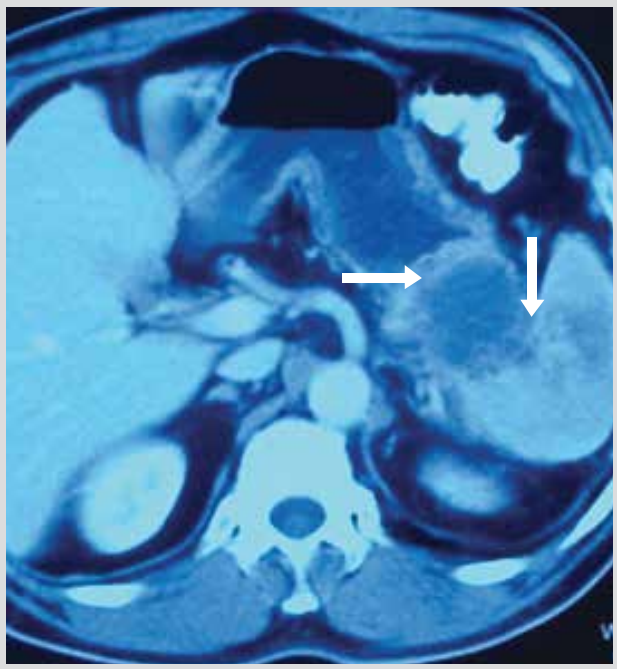
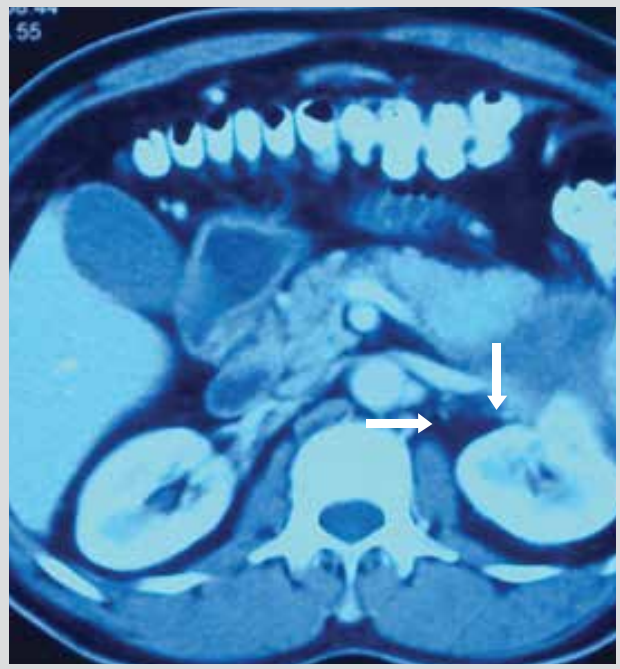
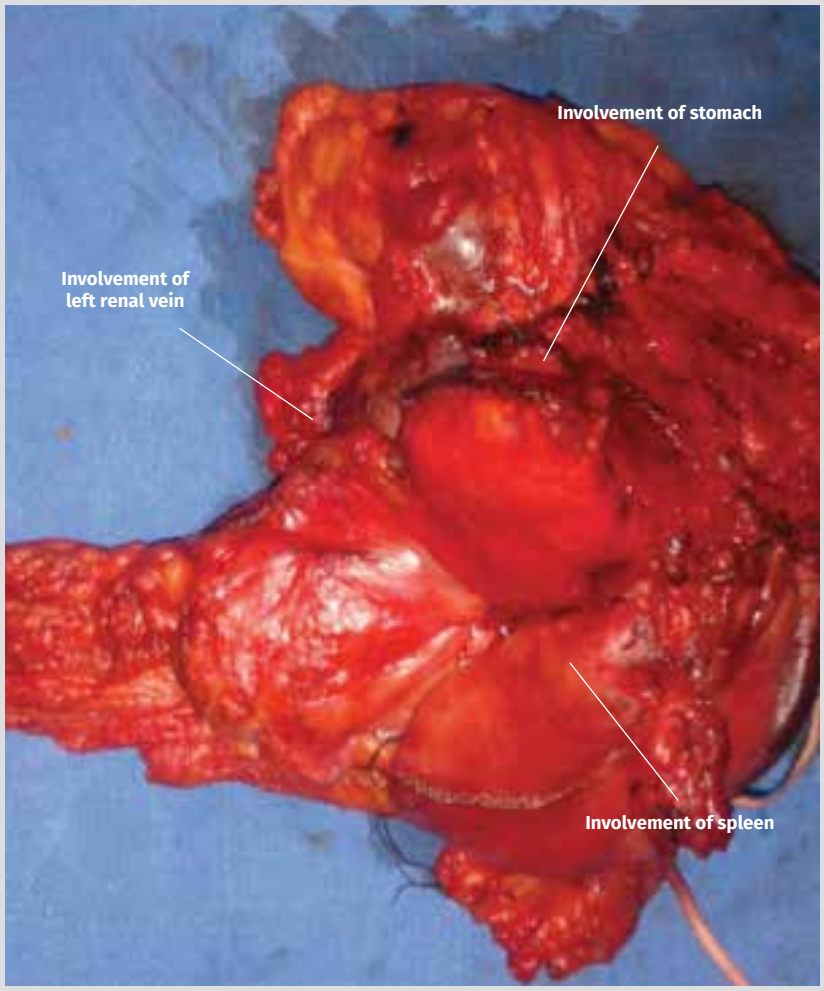



Fig.1: CECT abdomen showed pancreatic tail tumour mass invading spleen, greater curvature of stomach, upper pole of left kidney and left renal vein



carcinoma of pancreas with all the margins negative for malignancy; patient received adjuvant chemotherapy as advised by medical oncologist.

Discussion

Pancreatic adenocarcinoma still ranks high among cancer-related deaths worldwide. Pancreatic cancer is the 11th most common cancer and the fourth leading cause of cancer related death in the west. Cumulative 5 year survivals of these patients range from 7 to 13.6%. In spite of substantial strides in preoperative staging, surgery, perioperative care and adjuvant treatment, the survival still remains dismal. Though the long-term outcome may be poor, surgery offers the only chance of cure.

About 90% cases of pancreatic cancer are derived from pancreatic duct cells. Anatomically, 60%-80% of pancreatic cancers reside in the pancreas head and the remaining 25% distribute in pancreatic body or tail. The latter usually lacks the specific early symptoms due to the deep location of the tumour. The common complaints of patients with pancreatic cancer in the body or tail are vague upper abdominal pain, upper abdominal discomfort & loss of appetite.

The preferred test is a contrast-enhanced CT Scan. In the majority of instances, this should establish if there is a tumour in the pancreas and if it is resectable. The presence of hepatic or peritoneal metastases, distant lymph node metastases, encasement of the superior mesenteric, hepatic or celiac artery by tumour are clear contraindications to surgical resection. Tumour size, continuous invasion of the duodenum, stomach or colon and lymph node metastases within the operative field are not contraindications.

The tumour marker CA19-9 is not highly specific or sensitive, but a baseline level should be established. If it is initially raised, it can be useful later in identifying recurrence.

The infiltrative growth of the body and tail tumor of the pancreas can involve neighboring organs and large blood vessels. Since the disease is usually diagnosed at advanced stage, most of the patients had been considered inoperable. However, studies show that among all current available therapy modalities, only surgical intervention can prolong the survival in patients with pancreatic cancer localized in the body or tail of the organ and radical resection to achieve R0 resection is better than non-surgical therapies.

Diagnostic laparoscopy prior to an attempt at resection can spare a proportion of patients an unnecessary laparotomy by identifying small peritoneal and liver metastases. It can be combined with laparoscopic ultrasonography. The standard surgery is distal pancreatectomy with splenectomy and en-bloc removal of involved organs. Adjuvant chemotherapy based on gemcitabine and radiotherapy has shown a favorable response and should be advised according to final histopathology report

Conclusion

Distal pancreatic adenocarcinoma patients present with advanced malignancy because of non-specific symptoms; extended resection (Multivisceral resection) is justified in these patients to achieve complete resection of the tumor, because of favourable 5 and 10 years of survival rate.

Roux-en-Y Gastric Bypass - A novel approach to Diabesity



Dr. Rajesh Kapoor - M.Ch. (Surgical Gastroenterology)
Director, Institute of Gastrointestinal & Hepatobiliary Sciences
Dr. Dipankar Mitra - DNB (General Surgery), DNB (GI Surgery)
Associate Consultant, Institute of Gastrointestinal & Hepatobiliary Sciences
Dr. Amit Jain - M.Ch. (Surgical Gastroenterology)
Associate Consultant, Institute of Gastrointestinal & Hepatobiliary Sciences

Introduction

Obese men and women are at extremely higher risk of developing Type II Diabetes Mellitus (T2DM). The terms, "Metabolic Syndrome" (MS) or "Syndrome X" are generally used to indicate multiple clinical life threatening entities of central obesity, Insulin Resistance (IR), hypertension, and hyperlipidemia. Metabolic syndrome results in a greater risk of developing T2DM and cardiovascular disease, two of the principal causes of death worldwide. This article corroborates the knowledge of evidence of a critical role of the gut in glucose and energy homeostasis and supports consideration of the Gastro-Intestinal (GI) tract as a rational biological target for interventions aimed at treating obesity, diabetes and metabolic disorders. Recent randomized clinical trials show that bariatric surgery results in better control of T2DM and greater reduction of cardiovascular risk factors compared with a variety of lifestyle interventions and medical therapies. Based on such mounting mechanistic and clinical evidence, conventional bariatric procedures are now increasingly being proposed not only as mere surgical management of obesity but also as a valuable approach to intentionally treat T2DM—a new concept and practice referred to as "metabolic surgery".

Case Summary

A 34-year-old housewife came to us with severe sleep apnea, uncontrolled type II diabetes mellitus and inability to walk more than ten steps in one go. Her height was 171cms, weight was 147kgs and BMI was 58.1kg/m2. She had symptoms of gastro esophageal reflux disease and dyslipidaemia also. Her HbA1C was 7.5 which indicated poor control of blood sugar in recent time. She was counselled for bariatric surgery in view of her comorbidity and obesity.

Roux-en-Y Gastric Bypass

All relevant investigations were done. Nocturnal polysomnography was advised by pulmonologist which diagnosed severe obstructive sleep apnea. She was started on continuous positive airway pressure ventilation on a regular basis at home every night.

She reviewed back after two weeks and was planned for Roux-en-Y Gastric Bypass which was performed on 17th March 2016. Intraoperative endoscopy confirmed the 30ml small gastric pouch and a wide, healthy gastrojejunostomy. She tolerated the procedure well. Contrast CT scan of upper abdomen showed free flow of dye to the alimentary limb without any leak. She was discharged on POD4 with an advice of low calorie high protein liquid diet. On follow up visit after 10 days she was maintaining her normal blood sugar level without any insulin support. She was started on pureed diet after 10 days. She started on regular light exercise after two weeks.

Discussion

Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) performed at specialty centers by trained bariatric surgeons has excellent outcomes. The 30-day mortality rate is 0.3% and major complication rate is 4.3%. The LRYGB is highly effective with regards to excess weight loss when compared with other procedures like gastric sleeve resection and adjustable gastric banding. The average excess weight loss following LRYGB is 70% to 80% of excess weight at 5 years. Morbid obesity increases the risk of premature death and the risk of morbid

obesity outweighs the risks of bariatric surgery. Furthermore, several studies show improvement in life expectancy after bariatric surgery. Several randomized control trials, metaanalyses have shown improvement or resolution in type II diabetes, hypertension, hyperlipidemia, and OSA as well as improved outcomes when compared with medical interventions. Bariatric surgery, including LRYGB, is also associated with improvement of obesity-related severe cardiac dysfunction, polycystic ovarian syndrome and resolution of associated infertility, gastroesophageal reflux disease and osteoarthritis.

Over the last decade, bariatric surgery as an intentional treatment of T2DM has become increasingly popular worldwide as well as in India. This idea is based on consistent clinical observations of the dramatic improvement of hyperglycemia in patients with T2DM and on the experimental evidence that rearrangements of GI anatomy similar to those in some bariatric procedures directly and weight-independently affect glucose homeostasis. Numerous recent randomized controlled trials (level 1 evidence) have shown superior glycemic control after bariatric/metabolic surgery than with conventional medical and lifestyle approaches for the treatment of obese patients with T2DM. Further research on mechanisms of action of these procedures and the increasing recognition of the complex and crucial role of the gut in metabolism provide a biological rationale for the use of GI-based interventions to treat T2DM. Such conceptual evolution is reflected in most recent guidelines by professional organizations and government agencies that recognize the role of surgery as a treatment of T2DM and advocate the use of disease-based criteria beyond just BMI. These guidelines are contributing to transforming a weight loss intervention (bariatric surgery) into a surgical practice shaped around the goal to improve metabolism and reduce cardiometabolic risk. Such concept and practice is referred to as “Metabolic Surgery”.

A National Institutes of Health (NIH) Consensus conference in 1991 produced the first guidelines published in bariatric surgery. These BMI-based recommendations state that patients with BMI of 40 kg/m2 or greater of BMI 35 kg/m2 or greater with concomitant high-risk morbidities (eg, T2DM, OSA, obesity-related cardiomyopathy) may be considered candidates for bariatric surgery. In 2007, first Diabetes Surgery Summit (DSS-I), an international consensus conference, recommended expanding the use and study of GI surgery to treat diabetes, including among only mildly obese persons. Specifically, the DSS-I recommended that “Diabetes Surgery” should be considered in diabetic, obese patients with BMI 35 kg/m2 or greater and also in carefully selected candidates with BMI 30 to 35 kg/m2 and poorly controlled T2DM by lifestyle and medical interventions. Importantly, the DSS-I encouraged further studies on the role of surgery in diabetes care as an important research priority. In 2009, the American Diabetes Association for the first time introduced bariatric surgery in its standards of care for the treatment of T2DM, to patients with BMI > 35 kg/m2, because of the lack of sufficient evidence in lower BMI patients. In 2011, International Diabetic Federation suggested expanding the indications for bariatric/metabolic surgery to include patients with inadequately controlled T2DM and a BMI as low as 30 kg/m2 or down to 27.5 kg/m2 for Asians. More recently, in November 2014, the National Institute for Health and Care Excellence in the United Kingdom (NICE), amended its 2006 guidelines on obesity management, advising assessment for bariatric/metabolic surgery in patients with BMI as low as 30 kg/m2 and recent onset of T2DM.

Recently published DSS II (2016) recommendations states that there is now sufficient clinical and mechanistic evidence to support inclusion of GI surgery among antidiabetes interventions for people with T2D and obesity. Algorithms for treating T2D should include specific scenarios in which metabolic surgery is considered to be a treatment option in addition to lifestyle, utritional, and/or pharmacological approaches.

Conclusion

Given its role in metabolic regulation, the gastrointestinal tract constitutes a meaningful target to manage T2D. Bariatric surgery can be offered to patient with Type II DM as there is sufficient clinical evidence to support inclusion of metabolic surgery among antidiabetes interventions for people with T2D and obesity and uncontrolled diabetes with low BMI.

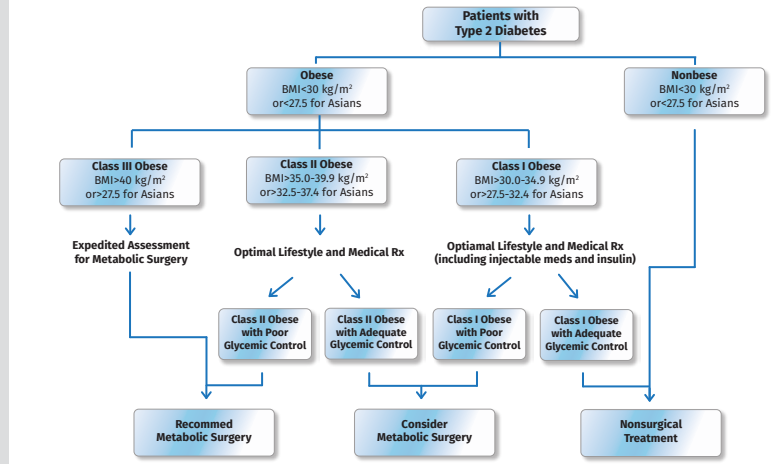


Figure4- Algorithm for the treatent of T2D, as recommended by DSS-II voting delegates. The indications above are intended for patients who are appropriate candidates for elective surgery. meds, medications.

Myeloablative Allogenic BMT in older patient of Leukemia

Dr. Esha kaul - MBBS, Fellow in division of Hematology & Oncology
Associate Consultant, Dept. of Hematology & Bone Marrow Transplant
Dr. Pawan Kumar Singh - MD, DM (Hematology)
Associate Consultant, Dept. of Hematology & Bone Marrow Transplant

Case Report

A 45-year-old woman presented with one week history of acute and severe chest and back pain. MRI of the back was normal except for increased marrow signal. Complete blood count showed pancytopenia and a few abnormal cells were seen on the peripheral smear following which the family sought Hematology-Oncology opinion.

On initial presentation, she was in marked distress due to her pain and also had a low grade fever. There was no lymphadenopathy or hepatosplenomegaly. A bone marrow exam showed acute lymphoblastic leukemia and chromosome analysis showed translocation (9:22) also known as Philadelphia Chromosome Positivity. She was started on multi agent chemotherapy protocol (modified GMALL) along with Imatinib with immediate improvement in her pain. Phase I of the induction lasted one month. Her induction course was complicated by Vincristine induced paralytic ileus and SIADH with diabetes mellitus which was managed with supportive medications and Insulin. Bone marrow examination at the end of Phase I induction showed complete hematological and molecular remission.

Given the extremely high risk of relapse, she was advised for an allogeneic stem cell transplant. She has 3 full siblings. Fortunately her older brother was found to be a 6/6 HLA match. She was transplanted with a myeloablative conditioning with cyclophosphamide and 1200 cGy total body irradiaition used as conditioning protocol. Donor is 60 years old, hypertensive and had ureteric stone removal procedure 2 months back. Urology and cardiology clearance was taken. Donor stem cells were mobilized by G-CSF and collected peripherally on day 1 without any adverse event.

Despite the aggressive nature of the conditioning protocol used, the patient tolerated the transplant process fairly well. The only major complication was grade 3 mucositis which was managed with IV analgesics and mouth rinses and did not require parenteral nutrition. Neutrophil and platelet engraftment was achieved on day 10 and 16, respectively. Cyclosporine and methotrexate was used for graft versus host disease prophylaxis. She was discharged on day 18.

Post-transplant engraftment sent on day 18 showed full donor chimerism (99.6%) There has been no graft versus host disease or CMV reactivation. She remains in follow up with excellent performance status.

Discussion

All with philadelphia chromosome positivity is considered a very high risk disease. The incidence of philadelphia chromosome positivity increased with age being around 50% at the age of 50 years. Addition of tyrosine kinase inhibitors has improved outcomes but relapse still remains a major problem with 60-70% risk of relapse. Allogeneic stem cell transplant offers the best chance of long term cure and has been shown to improve overall survival versus chemotherapy alone in adults with all in a randomized control trial. However a significant proportion of patients specially are generally not offered this therapy due to fear of transplant associated morbidity and mortality. The above case demonstrated that even older patients can be treated successfully with allogenic BMT.

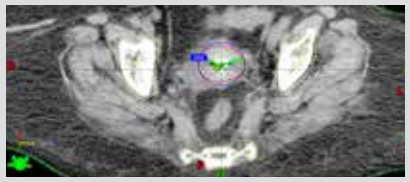
On initial presentation, she was in marked distress due to her pain and also had a low grade fever. A bone marrow exam showed acute lymphoblastic leukemia and chromosome analysis showed translocation (9:22) also known as Philadelphia Chromosome Positivity.

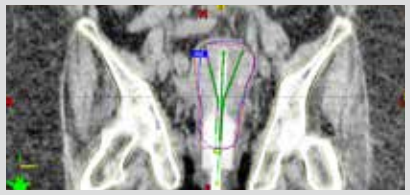
3D Conformal High Dose Rate (HDR) Brachytherapy in medically inoperable case of Carcinoma Endometrium

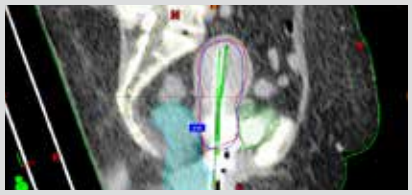
Dr. Sandeep Jain - MD (Radiation Oncology)
Associate Director, Dept. of Radiation Oncology
Dr. Vikash Kumar - MD (Radiation Oncology)
Executive Consultant, Dept. of Radiation Oncology

Background

Uterine cancer is one of the most common malignancies of the female genitourinary tract. The current standard of care for patients with endometrial cancer is total extrafascial hysterectomy with bilateral salpingo-oophorectomy coupled with peritoneal cytology and pelvic/para-aortic lymph node dissection followed by adjuvant RT, if indicated. However, many of these patients are elderly, obese and have other comorbid conditions making them poor surgical candidates. Definitive radiation is the only treatment option for these patients and brachytherapy is the integral part of radical radiotherapy. However Brachytherapy with single tandem is only suitable for small uteri and dual tandems create inhomogeneous dose distribution.







Case Report

Here we present an 81 years old obese lady with Type II diabetes, hypertension, chronic obstructive airway disease who presented with complaints of post menopausal bleeding. She was investigated and biopsy from endometrium was suggestive of endometroid carcinoma. Whole body PET-CT revealed FDG avid diffuse endometrial thickening and there was no significant nodal involvement or distant metastasis. After complete investigations, she was diagnosed as a case of carcinoma endometrium stage T1bN0M0. Considering her age, obesity and other co-morbidities she was a very high risk case for a radical surgery. The case was discussed in multidisciplinary tumour board and was given options of radical surgery and radical radiotherapy. The patient and family opted for radical radiotherapy and was referred for the same. After informed consent she was planned for whole pelvic RT followed by brachytherapy. She received whole pelvic RT by Intensity Modulated Radiotherapy (IMRT) technique to a dose of 4500 cGy in 25 fractions followed by 3 sessions of weekly HDR Brachytherapy. HDR Brachytherapy was done with placement of Triple Tandem Applicator in operation theatre under spinal anaesthesia. Volumetric Cone Beam CT imaging was done with applicator in place contouring of the target and organs at risk like bladder, rectum, bowel and pelvic bones. The CTV included whole of uterus and cervix for volumetric-based planning (Fig. 1). A dose of 700 cGy per fraction was prescribed to the Clinical Target Volume (CTV) with following optimization parameters: CTV D90 > 95%; CTV D10<300% (to minimize hot spots); rectum and sigmoid D2cc<70Gy in 2Gy equivalent doses (EQD2) from both EBRT and HDR. The entire procedure was uneventful and the patient is disease free at 1 year of follow up without any ≥ grade 2 late toxicity.

Conclusion

To conclude, the treatment of an intact uterus with radiation therapy alone, the use of the triple tandem compared with single or dual tandem, provides the most flexibility in coverage and ability to adjust the dose cloud allowing minimization of the dose to organs at risk resulting in good local control with minimal side effects.

Renal Stones in potential live Kidney Donor: Ex Vivo Ureteroscopy in Explanted Allograft before Transplantation

Dr. Amit K. Devra - MS, DNB (Urology)
Senior Consultant, Institute of Organ Transplant
Dr. Manoj Aggarwal - MS, DNB (Urology)
Consultant, Institute of Organ Transplant
Dr. Mandeep Dhanda - MS, M.Ch. (Urology)
Associate Consultant, Institute of Organ Transplant

Introduction

Traditionally, nephrolithiasis is considered to be a contraindication to living kidney donation because of the potential risk of stone recurrence in the donor and consequent risks of obstruction, sepsis and loss of the remaining solitary kidney, but recent literature suggests that in the absence of an alternative suitable live donor, potential living donors with incidental renal stones where there is no uncorrectable metabolic abnormality is no more a contraindication for the donation. We report a case where the donor had 4mm non-obstructive renal stone (Fig.1) and he was the only available donor in the family. After thorough metabolic evaluation, the donor was taken for donor nephrectomy.

Method

The explanted donor kidney was transferred for bench procedure where allograft was immersed in ice-slush and perfused via the renal artery with 4°C HTK solution. A 6.8F rigid ureteroscope was passed using 4°C saline irrigation at low pressure (Fig.2). All calyces were inspected systematically, the stone was identified and was removed with the help of stone grasping forcep and thereafter allograft was transplanted. There were no early or late allograft stone-related complications.

Conclusion

In the absence of an alternative suitable live donor, where there is no uncorrectable metabolic abnormality, ExURS is a safe technique that can render the transplant kidney stone-free and can be performed without subjecting the donor to risks of an extra stone-removing procedure.

Fig.1: Ex vivo ureteroscopy

Fig.2: Computed tomography scan demonstrating a small 4-mm non-obstructive renal stone

Heel Reconstruction by Gracilis Free Flap

Dr. Ashish Rai - MS, DNB (Plastic Surgery)
Senior Consultant, Institute of Aesthetic & Reconstructive Surgery
Dr. Saurabh K. Gupta - MS, M.Ch. (Plastic Surgery)
Associate Consultant, Institute of Aesthetic & Reconstructive Surgery

Introduction

Heel pad is an important integrated part of the sole of the foot and is essential for weight bearing and smoothwalking. The propelling function of the foot during walking is severely impaired in absence of heel pad. Trauma is the leading cause of soft tissue loss of the heel followed by tumour, infective gangrene and burns. It may involve only the soft tissue or may be associated with fracture of one or more bones and the exposed tendo achilles adjacent to heel.

Patient & Method

A 23-year-old male met with a road traffic accident while riding a motorcycle one year back. He was taken to a government hospital where his avulsed and damaged right heel was debrided, dressed and finally skin grafted. At present, he has severe pain on walking and cannot bear weight on the affected part. There was frequent breakdown of the grafted area and the patient was unable to wear shoes or sandals. The examination of right foot revealed severely scarred right posterior heel and tendo achilles area with skin graft directly over the bone. The surrounding tissues were healthy and posterior and anterior tibial artery were palpable.

Planning

Various options of heel reconstruction were discussed with the patient which included regional pedicle flaps versus distant free flaps. He was also informed about single stage procedure in free flaps as compared to multiple stages in pedicle flap. In free flaps, Gracilis muscle flap was our flap of choice in view of excellent contouring and padding of the heel and tendo achilles area with concealed and small scar at the donor area. Gracilis is the most superficial muscle on the medial side of the thigh. It is thin and flattened, broad above and narrow below. It presents with type II blood supply and can be transferred based on a artery derived from medial circumflex femoral artery. This artery enters the muscle above 10cm from the pubic symphysis.

During surgery, scar tissue was excised from the heel and tendo achilles area and gracilis muscle was harvested along with its pedicle from the right side and transferred to the defect and anastomosis was done with posterior tibial vessels of the limb.

Follow-Up

Post surgery, patient was given a slab and was discharged after 4 days from the hospital. Patient was followed up at weekly intervals and was given an offloader shoe for the heel.

Conclusion

Reconstruction of soft tissue defects of the foot and ankle continues to pose problem for the plastic surgeon. However, with the advancements in plastic surgical procedures, newer surgical options are now available for heel defects. Free tissue transfer offers an option of single stage reconstruction of heel pad with minimal donor site morbidity. Gracilis muscle is an optimal option for reconstruction of heel pad and tendo achilles area.

Fig.1: Heel defect with graft

Fig.2: Defect after removal of graft

Fig.3: Exploration of donor vessels

Fig.4: Harvest of free gracilis muscle

Fig.5: Free Gracilis 12cms along with pedicle

Fig.6: Gracilis transferred to the heel defect

Our Endeavour Towards Quality (June – August 2016)

We at Jaypee Hospital, endeavour to serve our clients with the quality of services that would meet the international standards. We have been taking small steps to monitor the quality of services in various fields.

With the increase in the OPD foot fall to 33,949 and the IPD bed occupancy increasing to 48.89%, with the average length of stay of patients being 3.36 days. We measure the patient satisfaction index every month and the same is monitored by the top management at Jaypee hospital. The patient satisfaction index for the last three months has been 93%.

Our team of skilled surgeons have performed 1052 surgeries in the last three months with a percentage of anesthesia adverse events of zero. We strive to serve our clients on time with surgery rescheduling rate of 3.43%. Even with the increase in the surgeries we have strived to serve our clients on time with surgery rescheduling rate at 4.46%.

The return to ICU within 48 hours has been at a low of 0.69% and reintubation rates are at 5%, though the ICU occupancy has been increasing consistently.

We at Jaypee Hospital, care for for employees and train the health care workers on the infection control and safe handling of sharps practices regularly. The needle stick injury rates have been restricted at 0.12%.

Our diagnostic services, play a key role in patient care and ensures to deliver the report within the committed time and the percent of TAT failures is less than 5% for the Laboratory services.

Diet of the patient is given equal importance at Jaypee Hospital and our dedicated team of dieticians actively assess the nutritional needs of 97% of the patients within 24 hours of their admission.

We at Jaypee Hospital, work towards timely quality services for the OPD consultation and have managed to keep the average waiting time to 30 Minutes. To take step further, the initial assessment of patients coming to OPD is performed within 7 minutes of the patient arrival.

International Patient Safety Goals

1. **Improve the accuracy aspect of Patient's Identification using**
   - Patient Name
   - UHID
2. **Improve effective communication**
   - Ensure Verbal Order Policy is followed
   - Ensure Proper Patient Handover
3. **Improve the safety of High Alert Medications**
   - Ensure Medication Management Policy is followed
4. **Ensure the correct site, procedure and patient surgery**
   - Follow time-out before all surgeries & invasive procedures
5. **Reduce risk of health-care associated infections**
   - Follow 5 Moments of Hand-hygiene
   - Perform 7 Steps of Hand-hygiene
6. **Reduce risk of patient's harm resulting from falls**
   - Ensure fall prevention protocols are followed

JAYPEE HOSPITAL
LIFE FIRST

CENTRES OF EXCELLENCE

- Institute Of Heart
- Institute Of Oncology
- Institute Of Organ Transplant
- Institute Of Orthopaedics And Spine
- Institute Of Minimally Invasive Surgery
- Institute Of Gastrointestinal And Hepatobiliary Sciences
- Institute Of Neurosciences
- Institute Of Renal Diseases
- Institute Of Aesthetic And Reconstructive Surgery
- Institute Of Mother And Child
- Department of Haematology and Bone Marrow Transplant
- Department of Emergency and Trauma
- Department of Critical Care and Anaesthesiology
- Department of Respiratory and Critical Care Medicine
- Department of Endocrinology and Diabetes
- Department of Infertility and IVF
- Department of Internal Medicine
- Department of Rheumatology
- Department of Ophthalmology
- Department of ENT
- Department of Radiology
- Department of Laboratory Medicine
- Department of Transfusion Medicine
- Department of Nuclear Medicine
- Department of Physical Therapy and Rehabilitation
- Department of Dental Surgery
- Department of Behavioural Sciences

Jaypee Hospital, Sector 128, Noida 201304, UP, India

0120 412 2222 | +91 9555 600 300 | www.jaypeehealthcare.com | Follow us