

## Block Q Surgery Treatments

by Fatima Haider

Source: Irfan Masood Surgery Book

### Inguinal Hernia

- Herniotomy - performed in infants, adolescents and young adults
  - Herniorrhaphy - Inguinal floor reconstruction
    - Lytle's Method
    - Modified bassini repair
    - Shouldice repair
    - Maloney Darn Repair (Darning Repair)
  - Hernioplasty
    - Liechtenstein Mesh Hernioplasty - **Gold standard**
  - Laparoscopic Hernia Repair
    - TEP: Totally Extraperitoneal Repair
    - TAPP: Trans Abdominal Pre peritoneal Repair
- 
- **Herniotomy - performed in infants, adolescents and young adults**
  - **Herniotomy + Herniorrhaphy - performed in adults**

### Femoral Hernia

- Henry's Procedure is treatment of choice - Midline abdominal Extraperitoneal femoral Hernioplasty
- Lockwood - below inguinal ligament approach
- Lotheissen - Inguinal Approach
- McEvedy - Supra inguinal approach

### Sliding Hernia (Hernia en glissade)

- Impossible to control this hernia with truss
- operation is indicated

### Umbilical hernia in children

- If asymptomatic and <2 years of age - conservative management
- If symptomatic and > 2 years of age - surgical intervention

### Para umbilical hernia in adults

- If defect is < 2 cm - Herniorrhaphy
- If defect is > 2 cm - Mesh Repair
- Mayo's repair - Double breasting
- Mesh Repair - IPOM (Intra peritoneal Onlay Mesh Repair) is done now

### Epigastric hernia

- Excision of fat and closure of defect
- If defect is > 3-4 cm - use mesh

### **Spigelian Hernia**

- surgery indicated in all cases

### **Incisional Hernia**

- If defect is small - anatomic repair
- Mesh repair - recommended

### **Intra peritoneal abscess**

- Percutaneous drainage under US or CT guidance - initial management of choice
- Open Drainage - if percutaneous drainage fails

### **GERD**

- Nissen fundoplication - Total fundoplication
  - associated with gas bloat syndrome
- Partial fundoplication
  - Toupet fundoplication - 270° done posteriorly
  - Dor Watson Fundoplication - 180° done anteriorly
  - Besley Mark IV Fundoplication - 270° done anteriorly
- Hill procedure - involves tightening the arcuate ligament around esophagus and tack stomach to diaphragm
- Partial gastrectomy with Roux en Y reconstruction - reduces gastric acid secretion and diverts bile and pancreatic acid secretion away from stomach
- Laparoscopic fundoplication - 5 ports inserted in upper abdomen

### **Hiatus Hernia**

- Reduction of hernia
- Excision of sac
- Narrowing of hiatus
- Fundoplication may be done to prevent future reflux

### **Achalasia**

- Pneumatic dilatation
- Heller's myotomy - together with partial anterior fundoplication to prevent GERD

### **Zenker's Diverticulum**

- Endoscopic stapled pharyngoplasty
- Diverticulectomy and myotomy of cricopharyngeus
- Diverticulopexy and myotomy of cricopharyngeus

### **Esophageal carcinoma**

- Minimal invasive esophagectomy
  - Trans hiatal esophagectomy (when lower 3rd of esophagus is cancerous)
  - Ivor Lewis procedure (when middle esophagus is cancerous)

- McKeown/ 3 Phase operation (when upper third of esophagus is cancerous)
- Salvage esophagectomy
- Ideal resection margins for esophagectomy
  - 10 cm proximal
  - 5 cm distal

### **Duodenal Ulcer**

- Billroth II operation
  - Gastrectomy
  - Gastro jejunostomy
- Truncal vagotomy and drainage
- Highly selective vagotomy (Parietal cell vagotomy) - denervation of vagus nerve that supply the parietal cell mass only
- Truncal vagotomy + Antrectomy

### **Gastric Ulcer**

- Billroth I procedure
  - Gastrectomy
  - Gastro duodenostomy

### **Perforated peptic ulcer**

- Laparotomy via upper midline incision
- Peritoneal lavage should be done to remove all fluids and food debris

### **Dieulafoy's Disease**

- If visible during endoscopy
  - Endoscopic clipping
  - Sclerosant injection
- If visible during surgery
  - Focal excision

### **Gastric Outlet Obstruction**

- Conservative management in mild cases
  - correction of metabolic derangements with isotonic saline with potassium supplementation
  - IV PPIs
  - Empty stomach by a wide bore gastric tube + lavage
- Surgical treatment in severe cases
  - Gastroenterostomy
  - Endoscopic dilatation

### **Gastric Cancer**

- Total gastrectomy
  - for proximal tumors (cardia and fundus)

- Removal of stomach en bloc (upto 1st part of duodenum)
- D1 or D2 lymphadenectomy
- Restoration of GIT continuity by Roux en Y esophago jejunostomy or gastro jejunostomy
- Subtotal gastrectomy
  - for distal tumors (body and antrum)
  - preserves proximal stomach
  - restoration of GIT continuity by closure of stomach from lesser curvature and anastomosis of greater curvature to jejunum or Roux e Y gastro jejunostomy (preferred), or Billroth II reconstruction
- Lymphadenectomy
- Chemotherapy
  - cisplatin, 5-FU, epirubicin
- Radiotherapy

### **GISTs (GIT Stromal tumors)**

- Small tumors - wedge excision
- Large tumors - Gastrectomy/ Duodenectomy
- Lymphadenectomy is NOT required

### **Ascites**

- Sodium and water restriction
- Diuretics
- Tx of refractory ascites - Large volume paracentesis
- TIPSS - Trans jugular intra hepatic porto systemic shunt
- Surgical shunts and liver transplantation
- Peritoneo venous shunting
  - involves use of LeVeen shunt, containing one way valve
  - one end placed into ascites within peritoneal cavity
  - other placed into internal jugular vein and fed into superior vena cava
  - Ascitic fluid move from high pressure peritoneal cavity to low pressure SVC

### **Esophageal Varices**

- Pharmacologic agents - Terlipressin (agent of choice), Octreotide (alternative to Terlipressin)  
Terlipressin - useful in reducing active bleeding while endoscopy is being arranged
- Endoscopic band ligation - method of choice widely used as initial treatment
- Injection sclerotherapy - Polidocanol injected into varices
- Balloon Tamponade - If endoscopic and pharmacologic therapy has failed
  - Pressure in esophageal balloon should not exceed 40mmHg
  - Esophageal balloon should be deflated for 10 mnts every 3 hours to avoid esophageal mucosal damage
- TIPSS - Transjugular Intrahepatic Porto systemic Shunt

- Surgical shunts
- Splenectomy and gastro esophageal devascularization
- Prophylaxis - Non selective beta blockers e.g propranolol

### **Extrahepatic Biliary atresia**

- Type I - Atresia restricted to CBD
- Type II - Atresia of common hepatic duct
- Type III - Atresia of right and left hepatic ducts

### **Surgeries**

- Direct Roux en Y hepatico jejunostomy - for Type I
- Kasai procedure
  - for Type II and III
  - Radical excision of bile duct tissue upto liver capsule
  - followed by porto enterostomy i.e. anastomosing a Roux en Y loop of jejunum to liver capsule above portal vein bifurcation

### **Caroli's Disease**

- Antibiotics - for cholangitis
- Removal of calculi and hepatic lobectomy

### **Choledochal cyst**

- Radical excision of cyst
- Reconstruction of biliary tract using a Roux en Y hepatico jejunostomy

### **Laparoscopic Cholecystectomy**

- Port 1 - 10 mm in subumbilical area, for camera
- Port 2 - 10 mm in subxiphoid area, for main instruments
- Port 3 - 5 mm in right subcostal area, for retraction
- Gallbladder removed using an endobag

### **Open Cholecystectomy Incisions**

- Kocher incision - 2 cm below right subcostal margin
- Right subcostal incision
- Right upper transverse incision

### **Choledocholithiasis (CBD Stone)**

- Endoscopic papillotomy with sphincterotomy (by ERCP) - preferred procedure
  - If stone removal possible - Dormia basket
  - If stone removal not possible - Placement of stent
- Choledochotomy - surgical exploration of CBD

### **Choledochotomy for choledocholithiasis (CBD Stones)**

- Removal of CBD stone by longitudinal incision in duct
- Placement of T tube in CBD

- Cholangiogram is performed 7-10 days post-op to look for residual stones
- If residual stones found, T tube is left in place for 6 weeks
- The residual stone is then removed percutaneously under radiologic guidance

### **Bile Duct Injuries identified at time of cholecystectomy**

- Ligation of smaller ducts (<3 mm)
- T tube placement - Damage to larger ducts (>3 mm) but not caused by electrocautery
- Damage to larger ducts (>3 mm) and caused by electrocautery - Biliary reconstruction
- If defect size < 1cm or not near hepatic bifurcation - End to end anastomosis of bile ducts
- If defect size > 1cm or near hepatic bifurcation - Roux en Y hepatico jejunostomy or choledocho duodenostomy

### **Primary sclerosing cholangitis**

- Endoscopic stenting of dominant stricture
- Surgical resection with biliary reconstruction
- Liver transplantation - best option in PSc with cirrhosis

### **Carcinoid Tumor**

- Involving the bowel - Segmental resection + Lymphadenectomy
- Involving bowel + liver - Segmental resection + Lymphadenectomy + Enucleation of hepatic metastases
- Octreotide (somatostatin analogue) - given preoperatively in carcinoid syndrome to prevent carcinoid crisis
- Bronchospasm - Aprotinin
- Flushing - Octreotide, Alpha blocker

### **Adenomatous polyps**

- Colonoscopic polypectomy
- Surgical resection or open excision (large tumors)

### **Familial Adenomatous Polyposis (FAP)**

- Total colectomy with ileo rectal anastomosis
- Total proctocolectomy with ileo anal pouch
  - rectum is also removed
- Total proctocolectomy with permanent ileostomy

### **Colonic carcinoma**

- Surgical resection with lymphadenectomy is the only curative treatment
- If hepatic metastasis present
  - Hepatic resection is performed as a staged procedure after recovery from colonic resection (usually about 12 weeks)
  - At present, criteria for hepatic resection is < 3 lesions in one lobe of liver
  - Hepatic metastasis should NOT be biopsied as this may cause tumor dissemination
- Chemotherapy
  - Stage III and IV (node positive disease and distant metastasis) - Post operative chemotherapy, NO Radiotherapy

### **Closed-loop intestinal obstruction**

- Resection of ischemic (or necrotic) bowel followed by end-to-end anastomosis of bowel
- If bowel viability is not sure after observation a “second look” laparotomy i.e. planned re-exploration 24 hours later can be performed

### **Intestinal Obstruction**

- Remove the cause of obstruction
  - Adhesiolysis for adhesions
  - Untwisting the volvulus
- Check bowel viability
  - If viable, resection may not be performed
  - If non viable, resection with end to end anastomosis
  - In doubtful cases, following resection, both ends of bowel should be raised as stomas and reassessed regularly

### **Intussusception**

- Non operative (Radiological) Reduction - involves use of air or barium enema (more than 70% can be reduced non operatively)
- Surgical Reduction
  - used when radiological reduction has failed or is contraindicated
  - Reduction by gently compressing the most distal part of intussusception towards its origin
  - The last part of reduction is most difficult
  - If bowel is non viable, resection and primary anastomosis is performed

### **Cecal Volvulus**

- If non viable - Right hemi colectomy
- If viable - Reduction of torsion and fixation of cecum to RIF i.e. cecopexy

### **Sigmoid Volvulus**

- Best initial step - Colonoscopic (sigmoidoscopic) Decompression
- Next step in management
  - Young healthy patients = Sigmoidectomy
  - Elderly patients and patient with comorbidities = Sigmoidectomy, or sigmoidopexy (sigmoid fixation to pre-sacral fascia)

#### Mesenteric Ischemia

- SMA Embolism
  - Embolectomy + Resection of infarcted bowel (if present)
- SMA Thrombosis
  - Thrombectomy - can be open vs catheter directed, PLUS
  - Angioplasty with stenting for residual stenosis, PLUS
  - Open bypass for residual stenosis, PLUS
  - Resection of infarcted bowel (if present)
- SMV Thrombosis
  - Anticoagulation with heparin
  - Resection of infarcted bowel (if present)

#### Non occlusive mesenteric ischemia

- Volume resuscitation
- Increase cardiac output e.g. dobutamine
- Catheter directed nitroglycerin - it increases visceral blood flow
- Resection of infarcted bowel (if present)

#### Meconium Ileus

- Complicated cases - Hyperosmolar gastrografin enema
- Uncomplicated cases - Surgery e.g. resection and primary anastomosis

#### Rectal Mucosal Prolapse

- Infants and children
  - Digital repositioning
  - Submucosal injection of 5% phenol in almond oil
  - Surgical suturing of rectum to sacrum
- Adults
  - Submucosal injection of 5% phenol in almond oil
  - Application of rubber bands
  - When prolapse is unilateral: Excision of redundant mucosa
  - When prolapse is circumferential: endoluminal stapling

#### **Full Thickness Rectal Prolapse**

- Surgical approaches may be perineal approach or abdominal approach
- Perineal Approach
  - most common approach and preferred in elderly and young males

- **Delorme's operation:** Excision of mucosa from prolapse, followed by plication of underlying muscle
- **Thiersh Operation** (no longer used)
- **Altemeier's Operation:** Excision of prolapsed rectum and associated sigmoid colon from below. Then, construction of a coloanal anastomosis.
- Abdominal Approach
  - has low recurrence rate
  - associated with sexual dysfunction and severe constipation
  - **Well's Operation** - fixing the rectum to sacrum by inserting a sheet of polypropylene mesh between them
  - **Ripstein's Operation** aka Trans abdominal Rectopexy - mobilization and fixation of rectum to sacrum using a Teflon sling in front of sacrum
  - **Goldberg Operation** - fixation of rectum to sacrum using a Teflon sling, combined with resection of sigmoid colon

#### Imperforate Anus

- Low defects - Anoplasty
- High defects - Temporary colostomy, then few months later reconstructive surgery like posterior sagittal anorectoplasty (PSAP)

#### Bariatric Surgery

- Sleeve gastrectomy
- Roux en Y Gastric Bypass
- Adjustable Gastric Band
- Biliopancreatic Diversion with duodenal switch
- Single Anastomosis duodeno ileal bypass with sleeve gastrectomy (SADI-S)