THE DIFFICULT
LAPAROSCOPIC
CHOLECYSTECTOMY

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ANZHPBA Queenstown
HISTORY of CHOLECYSTECTOMY

• OPEN
  • Prof Carl Langenbuch 1882

• LAPAROSCOPIC
  • Prof Eric Muhe Sept 1985
    » Boblingen, Germany
  • Phillip Mouret 1987
    » Lyon, France
DIFFICULT CHOLECYSTECTOMY

• Difficult Surgery
  – Patient factors (obesity/ Portal Hypertension/ Previous surgery)
  – Instrumentation/ Techniques
  – Bleeding

• Difficult anatomy
  – Aberrant ductal anatomy
  – Aberrant arterial anatomy
  – Left sided gallbladder

• Difficult Pathology
  – Acute cholecystitis
  – Fibrosed contracted GB (Chr Cholecystitis/ Gallstone ileus)
  – Gallbladder cancer
LEFT SIDED GALLBLADDER
Anomalous Biliary Anatomy
RECOGNITION OF DIFFICULTY

• Pre-operative Factors
  » Previous surgery
  » Obesity
  » Cirrhosis/ Portal Hypertension
  » Jaundice (Mirizzi’s syndrome)
  » Acute cholecystitis
  » Gallbladder Cancer
  » Medical Co-morbidities (incl drugs)

• Intra-operative factors
  » Fibrosed contracted gallbladder
  » Bleeding
  » Unexpected pathology (Cholecystitis, Cancer)
Pre-operative recognition of difficulty

• History/ Examination
• Ultrasound
• LFTS/ INR-
• FBE/ Platelet Count
• +/-Imaging of biliary tree
  » MRCP
  » CT Cholangiogram
IMAGING OF GALLSTONES
RADICAL CHOLECYSTECTOMY IN GALLBLADDER CANCER
CASE SCENARIO

- 22 year old female
  - 6/52 post acute cholecystitis.
    › Conservative management
  - Now for interval cholecystectomy
RISK FACTORS FOR DIFFICULT CHOLECYSTECTOMY

• Resolving acute cholecystitis

• 155 kgs

• Breast Surgical Fellow operating
Intra-operative cholangiography
CONVERSION TO OPEN OPERATION

- Right sub-costal incision
- Omnitract
- Fundus down dissection of gallbladder
TECHNIQUES FOR DIFFICULT CHOLECYSTECTOMY

MAKE IT as EASY as possible
SURGICAL TECHNIQUES

• Interval Cholecystectomy for acute cholecystitis ??

• Percutaneous cholecystostomy

• Careful cholecystectomy
ACUTE vs DELAYED CHOLECYSTECTOMY FOR ACUTE CHOLECYSTITIS

- No difference in conversion rates
- No difference in post-operative complications
- Reduced operation time in delayed group
- Significant reduction in hospital stay with early cholecystectomy
- Reduced post-operative stay in the delayed group

» Cochrane Review 2007
» Siddiquit T Am J Surg 195 1 Jan 2008 40-47
PERCUTANEOUS CHOLECYSTOSTOMY

• First cholecystostomy performed in 1867 by Bobbs

• US guided PC- 1982 Radder
  » Am J Roentgenol 139: 1240

• No controlled studies evaluating PC vs Cholecystectomy
  » Winbladh A Systematic review of cholecystostomy
    HPB 2009 11, 183
PERCUTANEOUS CHOLECYSTOSTOMY

• Successful intervention 85.6%.
• Procedure mortality 0.36%  BUT
• 30 day mortality rate 15.4%
• 9% Slippage
• More than 40% came to cholecx
  » 38% elective cholecystectomy
  » 4% acute emergency surgery
• (Mortality rate acute cholecystectomy 4.5%)
LAPAROSCOPIC CHOLECYSTECTOMY

- Cannula position
- Assistance
- Instrumentation
- Anatomical identification
CANNULA POSITION IN LAPAROSCOPIC CHOLECYSTECTOMY

• Number of cannulae
  » “Normal” cannula position
  » SILS (SILly Surgery or SIMple Surgery)
  » NOTES

• Position of Cannulae

• Previous surgery
INSTRUMENTATION FOR LAPAROSCOPIC SURGERY

- 30° LAPAROSCOPE
- INSUFFLATION
- LIGHT SOURCE
DIFFICULT LAPAROSCOPIC CHOLECYSTECTOMY

- Identify the anatomy
  - Posterior dissection

- Decompress the gallbladder

- Adequate retraction of gallbladder

- Control of bleeding
ANATOMY IN LAP CHOLECYSTECTOMY

• Cystic lymph node (Mascagne’s Node)

• Cystic duct/ Hartmanns pouch junction

• Operative Cholangiography
  » No clips
  » Careful anatomical dissection
  » Fluoroscopy
  » Cystic duct/ Hartmann’s pouch
  » (Training)
ALTERNATIVES IN DIFFICULT CHOLECYSTECTOMY

- OPEN?
- OPEN?
- OPEN?

- Sub-total cholecystectomy
- Cholecystostomy
OPEN CHOLECYSTECTOMY IN DIFFICULT CHOLECYSTECTOMY

- RUQ incision
- Assistance/ Retraction
- Lighting
- Control of bleeding
- Fundus down dissection of gallbladder
SUB-TOTAL CHOLECYSTECTOMY

1. Leave Hartmann’s pouch
   1. If unable to identify the cystic duct
   2. Remove all the stones from the gallbladder

2. Leave posterior wall of gallbladder
   1. In cirrhosis and/or portal hypertension
DIFFICULT CHOLECYSTECTOMY

• Anticipate trouble
• Make it as simple as possible
• Open cholecystectomy is safe and effective
• Be Wary of:
  – Difficult anatomy
  – Difficult pathology
  – Difficult surgery