Intraoperative Repair Of Pancreatic Duct Injury During Choledochal Cyst Excision

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Introduction

- Choledochal cysts are rare congenital cystic dilation of the biliary tract that result in significant morbidity.

- Etiology is unknown.

- Female > male, 4:1

- East Asian > Caucasian

- Incidence 1 in 100,000

- Anomalous pancreatic biliary duct union (APBDU) 30% to 70%.
King’s College Hospital Classification of choledochal malformation

( A modification of Alonso–Lej’s )

- Type 1
- Type 2
- Type 3
- Type 4
- Type 5
Presentation & Surgery

- Classic triad: Abdominal Pain
  - Right Upper Quadrant Mass
  - Jaundice

- Excision of the cyst + Roux en Y Hepaticojejunostomy or Hepaticoduodenostomy
Complication Of Surgery

Immediate or Early

• Bleeding (common)
• Anastomotic leak (common)
• Bowel obstruction due to adhesion (uncommon)
• Inadvertent damage to bowel (uncommon)
• Injury to the pancreatic duct (rare)

Late

• Cholangitis
• Biliary calculi
• Pancreatitis
• Liver failure
• Anastomotic stricture
Pancreatic Duct Injury

- It may occur due to extensive distal dissection or congenital anomaly of the pancreatic duct(s)

- Management of this injury remains controversial with intraoperative repair of pancreatic duct probably the best option
Case Report

- A 10-months-old boy who presented with antenatal diagnosis of Type I choledochal cyst was admitted for elective surgery (cyst excision with Roux en Y Hepaticojejunostomy)

- Post natal and preoperative LFT within normal range
MRCP (Preoperative)
Intra operative Finding

During the operation, the main pancreatic duct near to the head of pancreas was accidentally transected.
The stent was made by cutting one end of 4 Fr Double J Stent; the straight end placed inside the pancreatic duct and the coiled end left in the duodenum.
- Primary repair by end-end anastomosis with PDS 6/0 interrupted suture over the trans-anastomotic stent.

- The stent placed through the anastomosis site served as an internal drainage.
Post Operative X-ray
- The patient recovered uneventfully after the operation.

- Discharged from hospital at day 5 post surgery.

<table>
<thead>
<tr>
<th>Days post operative</th>
<th>Amylase</th>
<th>Lipase</th>
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<tbody>
<tr>
<td>Day 1</td>
<td>44 U/L</td>
<td>241 U/L</td>
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<tr>
<td>Day 2</td>
<td>10 U/L</td>
<td>45 U/L</td>
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<tr>
<td>Day 30</td>
<td>12 U/L</td>
<td>16 U/L</td>
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Results 2

- Abdominal US didn’t show a pseudo cyst and AXR confirmed the stent in situ at 6 months
- The stent removed by upper GI endoscopy
- Patient remains asymptomatic at 1 year follow up
Conclusion

- The main pancreatic duct injury is a rare complication occurs during choledochal cyst excision. It can be due to extensive distal dissection and/or inability to detect anomaly of the pancreatic duct.

- End to end anastomosis repair of the main pancreatic duct with stent placed (trans-anastomotic) is an option.

- This injury could be avoided by:
  1) Intraoperative cholangiography
  2) “Lilly” sub mucosal excision technique
References:


