Pancreas and Duodenum Treatment Algorithm

Pancreas – Trauma Evaluation

A) Grading
   a. Grade I – Minor contusion or superficial laceration without ductal injury
   b. Grade II – Major contusion or laceration without ductal injury
   c. Grade III – Distal transection or laceration with duct injury (to the left of the SMV)
   d. Grade IV – Proximal transection or periampullary injury (right of the SMV)
   e. Grade V – Massive disruption of the pancreatic head

B) If found during laparotomy
   a. Grade I/II injury – drainage
   b. Grade III injury – distal pancreatectomy +/- splenectomy
   c. Grade IV injury – Drainage vs Damage Control and Reconstruction
   d. Grade V injury – Damage control, Whipple
   e. Consider use of feeding jejunostomy in Grade II and above

C) Radiographic evaluation
   a. Evaluate for ductal injury
      i. No (Grade I/II) – observe
      ii. Unclear – MRCP or ERCP
      iii. Yes (Grade III-V) – ex-lap
   b. Intra-operative evaluation
      i. Anatomic/clinical assessment based on duct location
      ii. Cholecystocholangiography with IV morphine
      iii. Intra-operative ERCP

Duodenum – Trauma Evaluation

A) Grading
   a. Grade I – Hematoma in single area or partial thickness laceration
   b. Grade II – Multiple hematomas or < 50% circumferential laceration
   c. Grade III – 50-75% disruption of D2 or 50-100% disruption of D1, D3, or D4
   d. Grade IV – Disruption of > 75% of D2 or involvement of ampulla or distal CBD
   e. Grade V – Massive disruption of duodenopancreatic complex or devascularization of duodenum
DUODENAL INJURY

Peritonitis, hemodynamic instability, evidence of duodenal laceration on imaging

Duodenal hematoma on imaging

Duodenal hematoma on imaging

Greater than 50% luminal obstruction

Duodenal laceration

1st part of duodenum

2nd part of duodenum

3rd or 4th part of duodenum

Laparotomy *

Duodenal laceration

Disruption of duodeno-pancreatic complex

Grade I or II

Grade III

Grade I-III

Grade IV with + cholangiogram

Grade I-IV with - cholangiogram

Lateral wall

Medial wall or near ampulla

Grade I or II

Grade III

Grade I or II

Grade III

Grade V

Damage control laparotomy

Disruption of duodeno-pancreatic complex

Grade I or II

Grade III

Grade I or II

Grade III

Primary repair

Primary repair or Bilroth I or II

Primary repair or Bilroth I or II

Primary repair vs RnY J or jejunal patch vs duodenostomy

Primary repair (alternative exclusion or triple tubes)

Primary duodenal repair with biliary repair or reconstruction

Complex repair with reconstruction or Whipple

Primary repair

Primary repair or resection with Primary DD or DJ

* Drain placement for all injuries