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Short Communication

Tailored Endoscopic Approaches for Pancreatic Traumatic Injuries

Lorenzo Dioscoridi, MD, PhD*

Digestive and Interventional Endoscopy Unit, ASST GOM Niguarda, Milan, Italy

Corresponding author
Lorenzo Dioscoridi, MD, PhD
Digestive and Interventional Endoscopy Unit, ASST GOM Niguarda, Milan, Italy; E-mail: dioscoridi.lorenzo@virgilio.it

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ABSTRACT

Pancreatic traumatic injuries should be managed by multidisciplinary approach. Standard redo surgery can be avoided or supported by innovative mininvasive approaches both endoscopically and/or radiologically. Pancreatic endotherapy has an increasing role in the management of pancreatic injuries. Understanding the pathophysiology of pancreatic leak is crucial to guide the treatment. Endoscopic treatment must be tailored on the type and site of pancreatic fistula to achieve the optimal clinical outcome: there is not a one-way standard treatment but the best treatment for different types of pancreatic injuries considering both retrograde and endoscopic ultrasound (EUS)-guided approaches.

Keywords
Pancreatic fistula; Pancreatic traumatic injury; Endoscopic retrograde cholangiopancreatography (ERCP).

Pancreatic injuries during abdominal trauma account for 4-5% of major traumas. This type of injury can be very difficult to diagnose. A delay in diagnosis can lead to several complications such as infections, pseudocysts, abscesses, duct strictures, pancreatic ascites which are associated with high morbidity and mortality. Furthermore, incorrect classification limits proper intervention and management.

Multiple pancreatic injury grading systems have been proposed, one of the best known being the American Association for the Surgery of Trauma (AAST) classification, which divided five grades on the basis of parenchymal, main vessel and duct damage.[1]

Wong et al[2] proposed a classification for grading the severity pancreatic injuries on computerized tomography (CT) scan:

• Grade A
— Pancreatitis or superficial laceration only.

• Grade B
— BI: Deep laceration involving pancreatic tail.
— BII: Complete transection of pancreatic tail.

• Grade C
— CI: Deep laceration involving pancreatic head.
— CII: Complete transection of pancreatic head.

On the base of this latter, endoscopic treatment can be better understood and explained.

Pancreatic duct leaks and fistulas can lead to significant morbidity and mortality. Traditionally, pancreatic fistulas are managed conservatively by fluid drainage, supportive therapy, total parenteral nutrition and pancreatic secretion inhibitors.[1] This strategy can heal most low-volume leaks. For persistent leaks, surgical treatment was traditionally considered the treatment of choice.[1,2] However, there has recently been a trend toward aggressive yet minimally invasive management, to avoid surgery. Endoscopic transpapillary or transmural drainage of pancreatic collections/leaks is now increasingly performed, also in this setting.[3] After reviewing the current literature, endoscopic treatment of these conditions can be summarized on the base of Wong et al[2] classification:

• Grade A
— Pancreatic sphincterotomy eventually associated with bridging pancreatic stent or nasopancreatic endoscopic drainage (NPED).

Pancreas Open J. 2022; 5(1): 16-17. doi: 10.17140/POJ-5-115

• Grade B

— BI: Transpapillary protruding stent to drain the collection (with the distal edge in the pancreatic collection) OR bridging stent if duct caliber allows OR cyanoacrylate/fibrin glue/another polymer injection at pancreatic tail/fistulous tract OR EUS-guided pancreaticogastrostomy.

— BII: Transpapillary protruding stent to drain the collection (with the distal edge in the pancreatic collection) OR endoscopic ultrasound (EUS)-guided pancreaticogastrostomy.

• Grade C

— CI: Bridging stent OR NPED or extrapancreatic transpapillary protruding stent.

— CII: Triple stenting (enteral stenting at the level of the jejunal stump, pancreatic stenting with proximal edge in the enteral stent and biliary stenting through the biliodigestive anastomosis to stabilize the prosthetic complex)[4] OR EUS for transmural drainage of peripancreatic collections or pancreaticogastrostomy.

Endoscopic approach can play a useful role for the management of pancreatic duct injury in tertiary referral endoscopy centers and it is a potential substitute of surgery in selected case series.[5]

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