Minimally Invasive Approach Utilizing Cystoscope For Debridement of Necrotizing Pancreatitis

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1) Introduction

- Necrotizing pancreatitis (NP) is associated with high morbidity & mortality rates (30-39%)
- Open necrosectomy & debridement (OND) has higher complications rates than MIS techniques
- The Step-Up Approach is the preferred method
- A modified video-assisted retroperitoneal debridement (VARD) utilizing laparoscopy via cystoscope as well as rigid & flexible endoscopes is an effective intervention

3) Discussion

- NP refractory to drains requires necrosectomy
- MIS debridement is less morbid than OND
- Modified VARD: continuous irrigation & debridement
- Future considerations: multichannel single-port may be utilized for less invasive access
- Limitations: difficulty in accessing dependent collections
- Interdisciplinary: IR may optimize adequacy of drainage & avoid multiple trips to the operating room & CT scanner
- Contraindication: collections adjacent to nearby structures & risk iatrogenic injury (i.e. duodenum or stomach may benefit more from transgastric drainage)
- Risks: Hemorrhage - may require conversion to open
- NP requiring surgical intervention is rare. Future work includes simulations on live-tissue models in training surgeons on performing this technique safely, comfortably & confidently

2) Case Presentation

- 42M with alcohol-induced NP
- Step-up approach: initial percutaneous drains
- Interval CT: refractory peripancreatic collections
- **Modified VARD**

1. Guide-wires under fluoroscopy to access collections via drains, upsize drain sites (Seldinger's technique with nephrostomy dilators), insertion of non-bladed trocars with 5 & 10-mm ports
2. Cystoscope with an instrument port (fig. 1) with continuous irrigation into the 10-mm port. Flexible & rigid endoscopes to visualize. Suction connected to insufflation 5-mm port
3. Necrotic tissue debrided using laparoscopic bowel grasper to pink healthy tissue (fig. 2)
4. Replace ports with percutaneous drains
5. Serial CT scans (fig. 3) show improvement without necessitating OND

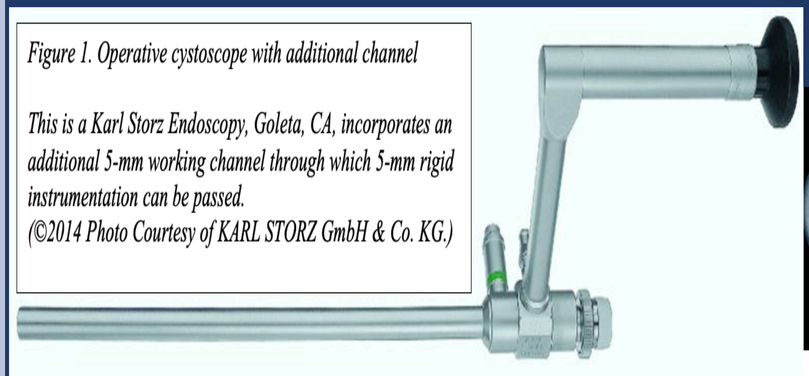


Figure 1. Operative cystoscope with additional channel

This is a Karl Storz Endoscopy, Goleta, CA, incorporates an additional 5-mm working channel through which 5-mm rigid instrumentation can be passed.
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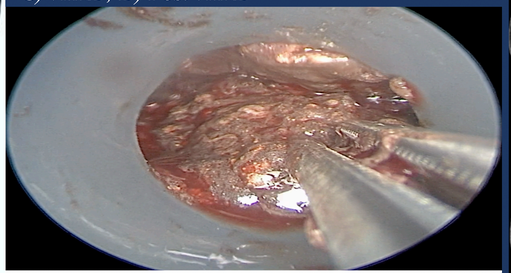


Figure 2. Gross necrotic debris in situ

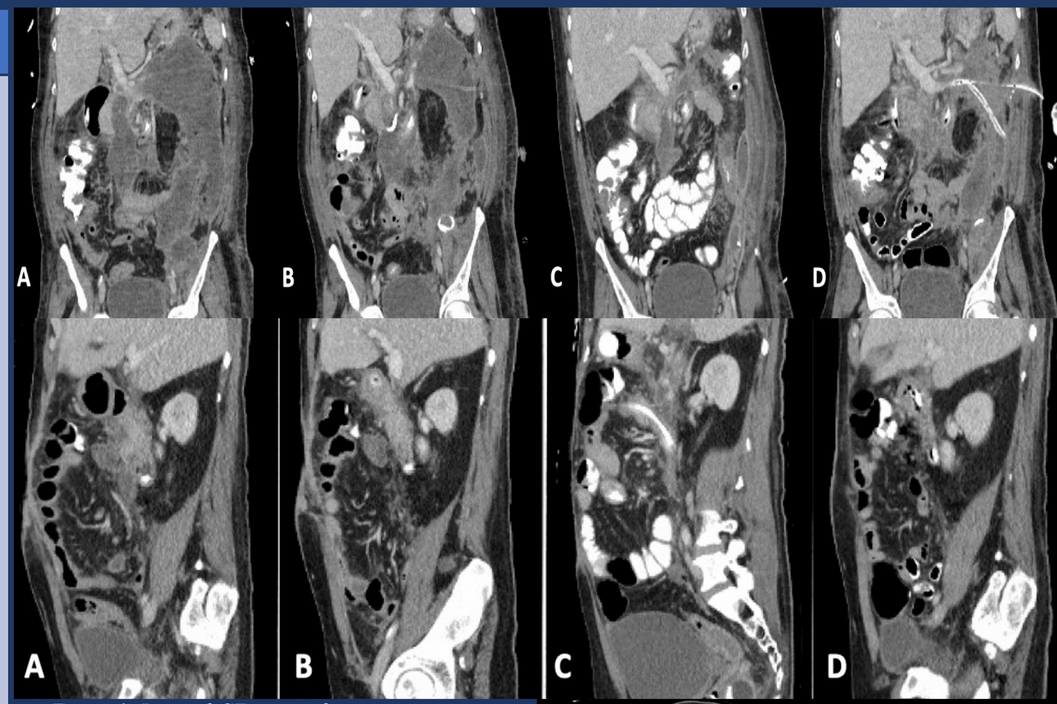


Figure 3. Interval CT scans of progressive debridement approach with coronal, sagittal & axial views. A) Before IR drainage; B) Post IR drainage; C) VARD; D) Post VARD

