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Can endogenous gastric acid and bile facilitate chemical debridement of walled off necrosis?

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To the editor:

Aggressive endoscopic transmural drainage (ETD) is the preferred minimally invasive treatment modality for patients with walled off necrosis (WON) [1]. It involves large diameter transmural tract dilatation with placement of multiple plastic stents or fully covered biflanged (BFSEMS) or lumen apposing metal stents (LAMS). This leads on to effective drainage of solid necrotic material in majority of patients [1,2]. However some patients of WON, especially containing large amounts of solid necrotic material, require additional direct endoscopic necrosectomy (DEN) for removing these large chunks of necrotic material [2,3]. DEN, although being effective, is labour intensive and associated with increased risk of complications, especially bleeding and perforation [2–4]. Therefore, various alternative techniques like irrigation by hydrogen peroxide and creating multiple transluminal gateways for drainage have been proposed to decrease need for DEN [2–4].

A chemical lavage technique that reduces the need of DEN is the need of hour. Endogenous gastric acid has also been suggested as a facilitator of chemical lavage and therefore cessation of proton pump inhibitors is suggested as one of the measures to facilitate auto-digestion of the necrotic material [5]. Similarly, endogenous bile could also facilitate auto-digestion of the necrotic material. However, role of gastric acid and endogenous bile in facilitating removal of necrotic material has not been evaluated. Patients with gastric outlet obstruction (GOO) may have endogenous bile and gastric acid entering the necrotic cavity and the outcome of ETD in these patients may help in assessing the efficacy of acid and bile in removing necrotic material.

We, therefore, assessed the outcome of ETD in 11 patients (9 males; mean age: 38.9 ± 10.1 years) of WOPN having GOO who were treated over last 2 years (Group A). The etiology of acute necrotising pancreatitis (ANP) was alcohol in 8, gall stones in 2 and idiopathic in 1 patient. The mean size of WOPN was 10.6 ± 2.9 cm with majority of patients ($n = 8$) having 10–40% solid necrotic debris. Two patients had >40% solid necrotic debris and 9 patients had a single WOPN. All these patients had significant GOO and required nasojejunal tube feeding for 4–11 days after ETD (Fig. 1).

ETD was done using multiple plastic stents in 8 patients and BFSEMS in 3 patients. Additional percutaneous drainage (PCD) was done in 2 patients. In both these patients, gastric as well as bilious contents were seen in the drainage catheter for initial few days following ETD (7 and 13 days respectively). WOPN completely resolved in all patients within a mean duration of 19.1 ± 4.1 days and mean number of procedures required for resolution were 2.72. None of the patients required DEN and no significant complications were observed.

During the same period, 53 patients of WOPN without GOO underwent ETD (multiple plastic stents in 41, SEMS in 12 patients and additional PCD in 5 patients) (Group B). There was no significant difference in either the size or amount of solid necrotic content in patients of WOPN with or without GOO. However, the time taken for resolution was significantly shorter in patients with GOO (19.1 ± 4.1 days vs. 27.7 ± 5.9 days; $p < 0.0001$). Also, significantly fewer endoscopic procedures were required for resolution in group A (2.7 ± 0.5 vs. 4.3 ± 0.94; $p < 0.0001$). Moreover, 6 patients required DEN in group B in comparison to none in Group A.

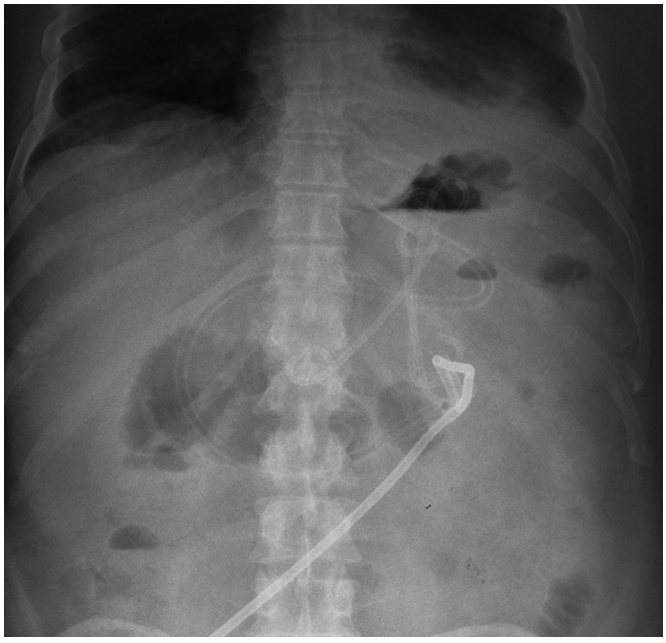

Fig. 1. Multiple transmural plastic stents with percutaneous drain and nasojejunal enteral tube.

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These preliminary observations obtained from a retrospective observational study of a small sample size suggests that endogenous acid and bile can facilitate chemical debridement in WOPN and this potential role need to be further explored by future studies.

Author contributions

1. Surinder Singh Rana: Design, Collection and interpretation of data, drafting of manuscript.
2. Ravi Sharma: Collection and interpretation of data.
3. Rajesh Gupta: Collection and interpretation of data.

Conflicts of interests

There are no conflicts of interest and no financial disclosures to be made by any of the authors.

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