Does the presence of gas in walled off necrosis impact on short- and long-term outcomes in patients with acute pancreatitis?

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Aims: Management of walled of necrosis (WON) after necrotising acute pancreatitis (AP) involves a step-up approach with endoscopic and percutaneous drainage being first line with a surgical step-up approach reserved for more complex disease(1). This project aimed to evaluate the effects of endoscopic management of necrotic collections and whether presence of gas in WON affects short- and longer-term outcomes at a tertiary HPB centre.

Methods: A retrospective cohort study of consecutive patients undergoing initial endoscopic necrosectomy between February 2018 and October 2021 for WON was undertaken. Data collected included demographics, severity, presence of gas in collection on CT scan prior to intervention, interval between presentation and endoscopic intervention, number of endoscopic and percutaneous interventions and complications. Length of stay, and long-term complications were also recorded. A minimum follow-up time of 6 months from insertion of endoscopic cystogastrostomy was completed. Univariate subgroup analysis using standard significance tests was performed between groups for those with and without gas in WON prior to endoscopic procedure.

Results: From a register of 402 patients, 47 patients with a median age of 59 years (26-78) and M:F sex ratio of 1.4:1 underwent endoscopic necrosectomy for WON. Results are demonstrated in tables 1 and 2. 5 (11%) patient died during admission, 3 (6%) died in the follow-up period after discharge with no significant difference between the two groups.

Table 1 - Baseline demographics by presence of gas on CT scan pre-index:

	No gas	Gas	*P*
Age Mean (S.D.)	58.29 (2.30)	54.05 (3.04)	0.265
Gender (male %)	19 (67.9%)	9 (47.4%)	0.160
T2DM	4 (14.3%)	4 (21.1%)	0.545
Previous pancreatitis	9 (32.1%)	4 (21.1%)	0.404
Excess alcohol	8 (28.6%)	5 (26.3%)	0.865
Ischaemic heart disease	2 (7.1%)	0 (0.0%)	0.234
Hypertension	9 (32.1%)	3 (15.8%)	0.310
CKD	1 (3.6%)	1 (5.3%)	1.00
COPD	0 (0.0%)	2 (10.5%)	0.158
CVA	1 (3.6%)	0 (0.0%)	1.00
Active smoker	7 (25.0%)	5 (26.3%)	1.00
Median admission amylase (IQR)	1280 (509.75 – 1280)	823 (37 – 2107)	0.201
Median admission CRP (IQR)	33.0 (4 – 183.4)	19.00 (5 – 297)	0.441
Obstructive jaundice	5 (17.9%)	2 (10.5%)	0.685

Table 2 – Table of clinical outcomes by presence of gas on CT scan pre-index:

	No gas	Gas	*P*
Total number of endoscopic necrosectomies Median (IQR)	4.00 (2.00 – 6.00)	2.00 (1.00– 4.00)	0.109
Number of percutaneous drainage procedure Median (IQR)	0.50 (0– 1.00)	0.00 (0.00– 2.00)	0.758
Mean LOS (S.D.)	101.89 (44.34)	119.33 (84.474)	0.991
Median LOS (IQR)	103 (67.25– 103.0)	95.5 (69.5– 134.75)	
ICU admission	17 (68.0%)	13 (68.4%)	1.00
Type 3C diabetes	7 (25.0%)	2 (10.5%)	0.278
Pancreatic exocrine insufficiency	26 (92.9%)	18 (94.7%)	1.00

Conclusions: Presence of gas in WON prior to endoscopic necrosectomy did not significantly change outcomes of patients with necrotising pancreatitis. Larger studies are needed to further confirm these findings.

No Conflicts of interest to declare. **References:** van Santvoort HC, Besselink MG, Bakker OJ, et al. A step-up approach or open necrosectomy for necrotizing pancreatitis. *N Engl J Med*. 2010;362(16):1491-1502. doi:10.1056/NEJMoa0908821

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