S Afr J Surg. 2026;64:170-174. Online first
https://doi.org/10.36303/SAJS.03393

S Afr J Surg
ISSN: 0038-2361 eISSN: 2078-5151

HEPATO-PANCREATO-BILIARY SURGERY

Refractory pancreatic ascites due to chronic pancreatitis: a real-world tertiary referral centre cohort analysis

B Misoi,[1,2] M Bernon,[1,2] JK Gqada,[1,2] JEJ Krige,[1,2] E Jonas[1,2]

[1] *Department of Surgery, Faculty of Health Sciences, University of Cape Town, South Africa*
[2] *Surgical Gastroenterology and HPB Surgery Unit, Groote Schuur Hospital, South Africa*

Corresponding author, email: *dr.brian.misoi@gmail.com*

Introduction: Pancreatic ascites (PA) is a rare complication of chronic pancreatitis (CP) and evidence regarding optimal management strategies remains limited. This study reports the experience of managing refractory PA in patients with complicated CP at Groote Schuur Hospital, Cape Town, South Africa in comparison to contemporary series.
Methods: Patients identified through an ethics-approved CP registry who presented with PA between 1 January 2012 and 30 March 2025 were included. Patients with PA due to malignancy, acute pancreatitis, iatrogenic causes, or trauma were excluded. Data collected included demographics, clinical characteristics, imaging findings, management strategies, and outcomes.
Results: Nine patients (median age 40, range 30–51 years) of whom six were male were included. The most common aetiology was alcohol, and the most common presentation was ascites and weight loss. Eight out of nine patients had evidence of nutritional deterioration, and the median serum albumin was 25 g/L (range 19–38). The most common imaging finding was pseudocysts, while pancreatic duct strictures and stones were demonstrated in 1 patient each. ERCP was attempted in all patients and an endoscopic cyst-gastrostomy performed in one. Five patients had successful stent placement, of whom three had complete resolution of ascites, and one underwent surgery. Of the four patients in whom stent drainage could not be performed three went on to surgery. Of the four patients who were operated three underwent a longitudinal pancreatico-jejunostomy and one a left pancreatectomy and splenectomy. Two patients developed major complications, one with bleeding following an endoscopic cyst-gastrostomy and another developed infected ascites. Two patients died of hospital-acquired resistant Klebsiella infections.
Conclusion: The management of PA remains challenging with substantial mortality rates in this high-risk patient group. Endoscopic intervention achieved resolution in select cases, while surgical intervention provided definitive management. Further studies are necessary to refine treatment strategies and individualised approaches to optimise patient outcomes.
Keywords: pancreas, chronic pancreatitis, ascites, endoscopic retrograde pancreatography, transpapillary stenting, pancreatojejunostomy

Introduction

Pancreatic ascites (PA) is an uncommon condition characterised by the accumulation of amylase-rich fluid in the peritoneal cavity as a consequence of either chronic pancreatitis (CP), pancreatic trauma or pseudocyst rupture. Because of infrequency and variable clinical presentation, PA is often misdiagnosed which results in delayed treatment and malnutrition. The management of PA remains controversial, and there is no consensus regarding the optimal approach. Conservative medical management, which includes nutritional support, pain control, therapeutic paracentesis and the use of somatostatin analogues, has been associated with high failure rates and significant morbidity.[1]

Interventional therapies, such as endoscopic transpapillary stenting or surgery have shown more promising outcomes.[1,2] However, the indication for and timing of intervention remains unclear. Although surgical options may provide definitive resolution of PA, operative intervention carries substantial perioperative morbidity and mortality. This study reports the experience of managing refractory PA in patients with complicated CP at Groote Schuur Hospital, Cape Town, South Africa in comparison to contemporary series.

Methods

Patients with PA due to CP who were treated at Groote Schuur Hospital, Cape Town South Africa, between 1 January 2012 and 30 March 2025 were eligible for inclusion in this study. Patients were identified from an ethics approved CP registry (Human Research Ethics Committee (HREC) R001/2019). The study was approved by the Departmental Research Committee of the Department of Surgery and the HREC at the Faculty of Health Sciences, University of Cape Town. Patients with other causes of PA (malignancy, acute pancreatitis, iatrogenic causes or trauma) were excluded. Data collected included demographics, baseline patient characteristics, investigation findings, management and outcomes.

To identify articles for comparison to our results, a search of PubMed was conducted to identify studies published between 1 January 1994 and 31 December 2025 using

Table I: Studies reporting endoscopic intervention for pancreatic ascites

Author	Total patients	CP *n* (%)	Initial conservative treatment success	ERCP attempt *n* (%)	Successful *n* (%)	Ascites resolution *n* (%)	Complication *n* (%)	Mortality *n* (%)
Varadarajulu[4]	97	47 (49)	NR	97 (100)	92 (95)	52 (55)	6 (7)	1 (1)
Sundaram[5]	68	35 (51)	NR	68 (100)	63 (93)	52 (76)	2 (3)	3 (4)
Tanaka[8]	6	6 (100)	NR	6 (100)	6 (100)	6 (100)	1 (17)	NR
Desai*[9]	94	94 (100)	NR	94 (100)	82 (87)	78 (83)	NR	NR
Gupta[10]	53	43 (79)	NR	53 (100)	53 (100)	39 (74)	NR	6 (11)
Halttunen[11]	50	22 (44)	NR	50 (100)	50 (100)	41 (82)	2 (4)	4 (8)**
Telford[12]	43	9 (21)	NR	43 (100)	43 (100)	25 (58)	4 (9)	0 (0)
Pai[13]	28	17 (61)	NR	28 (100)	27 (96)	26 (93)	7 (25)	NR
Cicek[14]	26	5 (19)	NR	26 (100)	25 (96)	20 (77)	2 (8)	0 (0)
Chebli[15]	11	11 (100)	4(36)	6 (54)	4 (66)	4 (100)	0 (0)	0 (0)
Adachi[16]	22	13 (59)	NR	13 (100)	13 (100)	9 (82)	1 (7)	NR
Das[17]	97	28 (29)	NR	28 (100)	NR	26 (93)	NR	NR
Kurumboor[18]	11	11 (100)	NR	11 (100)	9 (82)	5 (56)	5 (56)	0 (0)
O'Toole[19]	16	16 (100)	7(44)	6 (38)	4 (67)	2 (50)	NR	NR

NR – not reported
*Study included 321 patients, 94 had PA and/or pleural effusions while the remainder had pancreatic pseudocysts.
**Mortalities not related to ERCP.

the search as detailed in Appendix I. Studies on PA in CP that reported conservative and interventional endoscopic therapy, technical success, clinical outcomes, morbidity, and mortality were included. We excluded studies in which PA resulted from acute pancreatitis, trauma, or iatrogenic injury, and those with fewer than five patients or incomplete outcome data.

Our results were compared with published data regarding the success rates of conservative management, the technical and clinical success of endoscopic stent placement, morbidity and mortality.

Statistical analysis

Continuous data were presented as means or median and categorical data represented as proportions. Statistical calculations were performed with Microsoft Excel 2025.

Results

Nine patients with a median age of 40 (range 30–51 years) were included in the study of whom six were male. Eight patients had a history of ethanol abuse and in one, the cause of CP could not be identified. All patients presented with ascites, one, in addition, had a pleural effusion. The median body mass index was 19.05 kg/m^2 (range 16.5–22.4). Eight patients had an objective decline in their nutritional status as evidenced by unintentional weight loss with a median of six kilograms (range 1–17) and a low albumin level with a median of 25 g/L (range 19–38). Three patients had steatorrhea suggestive of exocrine dysfunction while all had preserved endocrine function. Relevant deranged laboratory investigation findings included a low haemoglobin (median 10.6 g/dL, range 7.5–15.1), marginally raised serum lipase (median 179 U/L, range 43–2701) and amylase (median 547 U/L, range 134–2308). The median white cell count, platelet count, creatinine, urea, electrolytes, calcium, magnesium and phosphate were normal. PA was confirmed in all patients, either on fluid amylase (median 1000 U/L; range 467–9601) and/or lipase (median 5000 U/L; range 811–6293). Eight patients underwent contrast-enhanced computed tomography (CE-CT) of whom five also had magnetic resonance imaging (MRI). The most common imaging findings were pseudocysts (n = 7; 77.8%), pancreatic duct (PD) dilatation (n = 8; 88.9%), parenchymal atrophy (n = 6; 66.7%), PD disruption (n = 2; 22.2%) and PD stricture (n = 1; 11.1%) (Figure 1).

The median time to referral was 4 months (range 21 days to 24 months). All patients received initial medical management for a median of 7 days (range 4–10). This was unsuccessful in all nine patients as evidenced by persistent ascites (Figure 2). ERCP was performed in nine patients, of

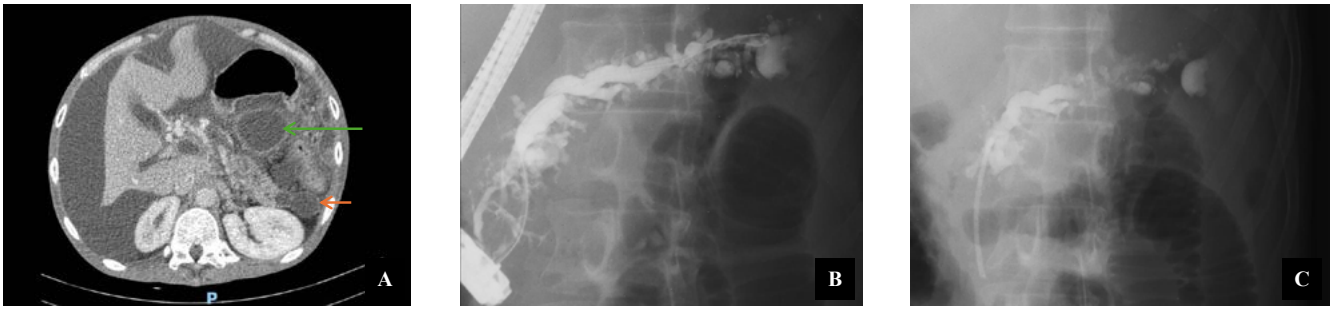

Figure 1: A - the arrows demonstrate retrogastric and tail of pancreas pseudocysts. B - At endoscopic retrograde pancreatography, multilevel strictures and dilatation of the pancreatic duct are demonstrated with leakage into the pseudocyst at the tail C - A pancreatic stent is inserted in the distal duct

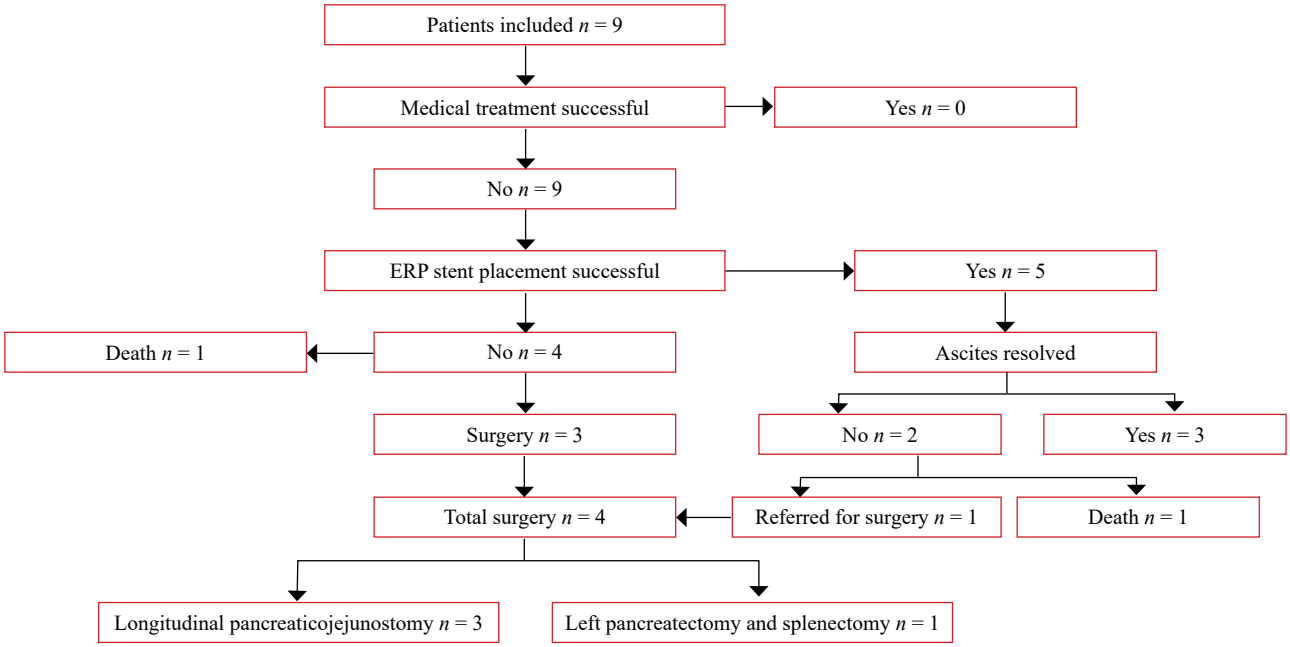

Figure 2

whom five had successful PD cannulation and a pancreatic stent placed. In one patient a vascular-ductal communication with opacification of the coeliac trunk was seen during contrast injection and stenting was not attempted, while in three a stent could not be placed due to high-grade strictures and distortion of the PD. Of the five patients who underwent transpapillary drainage, three had complete resolution of ascites, one patient had a persistent pancreatico-pleural fistula, and another died. In patients in whom stent management failed, surgery was performed in four (longitudinal pancreatico-jejunostomy, $n = 3$; left pancreatectomy and splenectomy, $n = 1$) and an endoscopic cyst gastrostomy was performed in one patient.

Two patients developed major complications following endoscopic intervention. The patient with left sided portal hypertension secondary to splenic vein occlusion who underwent an endoscopic cyst-gastrostomy developed gastric wall bleeding at the cyst-gastrostomy puncture site which was managed endoscopically with eventual resolution of the ascites. Another patient developed infected ascites due to Klebsiella pneumonia. There were two infection-related deaths. Both patients developed septic shock due to infected ascites with Klebsiella oxytoca and Klebsiella pneumonia respectively isolated on cultures. Both patients had significant nutritional depletion as evidenced by low serum albumin levels (19 and 21 g/dL).

The articles retrieved for comparison were assessed and summarised in Table I.

Discussion

PA due to complicated CP, particularly with major duct disruption and persistent pseudocysts remains complex, necessitating multidisciplinary management. This small retrospective series adds to the limited literature by evaluating endoscopic and surgical outcome in nine patients with PA treated at a tertiary referral centre. As reported in the literature, most patients failed conservative medical management with advanced pancreatic ductal changes and low albumin reported as risk factors necessitating escalation to interventional strategies.[1-3] As observed in our series, delayed diagnosis frequently results in late presentation and marked nutritional compromise. This creates a therapeutic dilemma between optimising the patient medically and the risk of worsening condition if definitive intervention is deferred.

Unlike earlier series which report resolution of PA after ductal decompression in patients with an accessible main PD and a partial disruption, resolution of ascites was achieved in only a third of our patients following ERCP stenting.[4,5] Several challenges that warrant comment became apparent. First, successful PD cannulation was not achieved in a third of patients due to anatomical distortion precluding papillary access. Endoscopic ultrasound-guided transmural puncture for PD access has been described in cases of failed cannulation, however, there is limited data on its use in management of PA.[6] Second, strictures downstream from the site of ductal rupture precluded guidewire passage and stent placement in four patients.

In the published literature successful resolution of PA after endoscopic intervention ranged from 50-100% (Table I).[7] However, most previous cohort studies included patients with other causes of PA, including iatrogenic postoperative leaks and pancreatic trauma which usually occur in a non-diseased pancreas.[4] In our study, other causes of PA were specifically excluded in order to assess the efficacy of endoscopic treatment in CP where the technical limitations highlighted above may contribute to higher endoscopic management failure rates.[8] Furthermore, advanced CP results in compromised physiology due to longstanding exocrine and endocrine insufficiency. In three patients in whom endoscopic management failed or was not feasible, surgical intervention led to complete resolution of ascites with no perioperative complications, reaffirming definitive surgical drainage or resection as a robust salvage strategy.

The limitations of this study include potential biases due to the retrospective design and a small sample size which precludes broad generalisability and subgroup analysis. Furthermore, imaging (CT, MRI and ultrasound) was used variably. Nevertheless, the study reflects real-world decision-making in a tertiary hepato-pancreato-biliary

referral centre and reinforces the complexity of managing PA in patients with CP. The findings support the advocated nuanced strategy that endoscopic therapy may be effective in selected patients, but that surgical drainage should be considered early when endoscopic treatment is not feasible or fails. Further identification of factors that may predict failure of endoscopic treatment would improve stratification, identifying patients in whom endoscopic therapy is likely to succeed as opposed to patients who would benefit from upfront surgery. This can be achieved by pooling of data from multicentre prospective registries which may provide greater statistical power to explore predictors of endoscopic failure and define optimal timing for surgical intervention. More accurate delineation of the extent of CP by using standardised imaging protocols will also facilitate the choice of optimal operation, i.e., resection versus drainage procedures.

This study provides insight into a rare but consequential CP complication. Endoscopic therapy alone achieved variable success in managing PA, with resolution in selected patients but notable complications and failures. Surgical intervention offered definitive management with minimal morbidity in refractory patients. These findings emphasise the importance of individualised treatment strategies informed by ductal anatomy, response to initial therapy, and considering the risk of sepsis. A multidisciplinary approach involving gastroenterologists, surgeons, and radiologists is paramount in optimising care for this complex and high-risk patient population.

Conflict of interest

The authors declare no conflict of interest.

Funding source

No funding was obtained for this study.

Ethical approval

Ethical approval was obtained University of Cape Town Human Research Ethics Committee (HREC 770/2024).

ORCID

B Misoi https://orcid.org/0000-0002-5419-6278
M Bernon https://orcid.org/0000-0002-7967-8548
JK Gqada https://orcid.org/0000-0002-0684-7064
JEJ Krige https://orcid.org/0000-0002-7057-9156
E Jonas https://orcid.org/0000-0003-0123-256X

REFERENCES

1. Gomez-Cerezo J, Barbado Cano A, Suarez I, et al. Pancreatic ascites: Study of therapeutic options by analysis of case reports and case series between the years 1975 and 2000. Am J Gastroenterol. 2003;98(3):568-77. https://doi.org/10.1111/j.1572-0241.2003.07310.x.
2. Cameron JL, Kieffer RS, Anderson WJ, Zuidema GD. Internal pancreatic fistulas: Pancreatic ascites and pleural effusions. Ann Surg. 1976;184(5):587-93. https://doi.org/10.1097/00000658-197611000-00009.
3. Parekh D, Segal I. Pancreatic ascites and effusion. Risk factors for failure of conservative therapy and the role of octreotide. Arch Surg. 1992;127(6):707-12. https://doi.org/10.1001/archsurg.1992.01420060083012.
4. Varadarajulu S, Noone TC, Tutuian R, Hawes RH, Cotton PB. Predictors of outcome in pancreatic duct disruption managed by endoscopic transpapillary stent placement. Gastrointest Endosc. 2005;61(4):568-75. https://doi.org/10.1016/S0016-5107(04)02832-9.
5. Sundaram S, Patra BR, Choksi D, et al. Outcomes and predictors of response to endotherapy in pancreatic ductal disruptions with refractory internal and high-output external fistulae. Ann Hepatobiliary Pancreat Surg. 2022;26(4):347-54. https://doi.org/10.14701/ahbps.22-002.
6. Karagyozov P, Tishkov I, Boeva I, Plachkov I. Endoscopic ultrasound-guided pancreaticogastrostomy as a rescue therapy for pancreatic ascites after failed ERCP. Endoscopy. 2021;53(3):E104-E5. https://doi.org/10.1055/a-1207-0191.
7. Varadarajulu S, Rana SS, Bhasin DK. Endoscopic therapy for pancreatic duct leaks and disruptions. Gastrointest Endosc Clin N Am. 2013;23(4):863-92. https://doi.org/10.1016/j.giec.2013.06.008.
8. Tanaka T, Kuroki T, Kitasato A, et al. Endoscopic transpapillary pancreatic stenting for internal pancreatic fistula with the disruption of the pancreatic ductal system. Pancreatology. 2013;13(6):621-4. https://doi.org/10.1016/j.pan.2013.08.006.
9. Desai PN, Patel CN, Kabrawala MV, et al. Usefulness of endoscopic pancreatography without contrast agents and efficacy of transpapillary intervention for pancreatic duct rupture in chronic pancreatitis: Our study of 321 cases in 11 years. International Journal of Gastrointestinal Intervention. 2021;10(1):1-5. https://doi.org/10.18528/ijgii200029.
10. Gupta S, Gaikwad N, Samarth A, Sawalakhe N, Sankalecha T. Efficacy of pancreatic endotherapy in pancreatic ascites and pleural effusion. Med Sci (Basel). 2017;5(2). https://doi.org/10.3390/medsci5020006.
11. Halttunen J, Weckman L, Kemppainen E, Kylanpaa ML. The endoscopic management of pancreatic fistulas. Surg Endosc. 2005;19(4):559-62. https://doi.org/10.1007/s00464-004-9140-2.
12. Telford JJ, Farrell JJ, Saltzman JR, et al. Pancreatic stent placement for duct disruption. Gastrointest Endosc. 2002;56(1):18-24. https://doi.org/10.1067/mge.2002.125107.
13. Pai CG, Suvarna D, Bhat G. Endoscopic treatment as first-line therapy for pancreatic ascites and pleural effusion. J Gastroenterol Hepatol. 2009;24(7):1198-202. https://doi.org/10.1111/j.1440-1746.2009.05796.x.
14. Cicek B, Parlak E, Oguz D, et al. Endoscopic treatment of pancreatic fistulas. Surg Endosc. 2006;20(11):1706-12. https://doi.org/10.1007/s00464-005-0764-7.
15. Chebli JM, Gaburri PD, de Souza AF, et al. Internal pancreatic fistulas: Proposal of a management algorithm based on a case series analysis. J Clin Gastroenterol. 2004;38(9):795-800. https://doi.org/10.1097/01.mcg.0000139051.74801.43.
16. Adachi A, Yoshida M, Takada H, et al. Practical efficacy and limitations of the transpapillary stent bridging technique for non-postoperative pancreatic fistula. Dig Dis Sci. 2025;70(5):1906-14. https://doi.org/10.1007/s10620-025-08945-9.
17. Das R, Papachristou GI, Slivka A, et al. Endotherapy is effective for pancreatic ductal disruption: A dual center experience. Pancreatology. 2016;16(2):278-83. https://doi.org/10.1016/j.pan.2015.12.176.
18. Kurumboor P, Varma D, Rajan M, et al. Outcome of pancreatic ascites in patients with tropical calcific pancreatitis managed using a uniform treatment protocol. Indian J Gastroenterol. 2009 May-Jun;28(3):102-6. https://doi.org/10.1007/s12664-009-0037-9.
19. O'Toole D, Vullierme MP, Ponsot P, et al. Diagnosis and management of pancreatic fistulae resulting in pancreatic ascites or pleural effusions in the era of helical CT and magnetic resonance imaging. Gastroenterol Clin Biol. 2007;31(8-9 Pt 1):686-93. https://doi.org/10.1016/S0399-8320(07)91918-1.

S Afr J Surg. 2026;64:170-174. Online first
https://doi.org/10.36303/SAJS.03393

S Afr J Surg
ISSN: 0038-2361 eISSN: 2078-5151

HEPATO-PANCREATO-BILIARY SURGERY

Refractory pancreatic ascites due to chronic pancreatitis: A real-world tertiary referral centre cohort analysis

Appendix I: PubMed search strategy to identify articles on management of pancreatic ascites in chronic pancreatitis

Search number	Query	Filters	Search Details	Results
5	#1 AND #4	from 1994/1/1 - 2025/12/31	(("pancreatitis, chronic"[MeSH Terms] OR ("pancreatitis"[All Fields] AND "chronic"[All Fields]) OR "chronic pancreatitis"[All Fields] OR ("chronic"[All Fields] AND "pancreatitis"[All Fields]) OR "pancreatitis, chronic"[MeSH Terms]) AND ((((("pancreatic fistula"[MeSH Terms] OR "ascites"[MeSH Terms] OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND ("ascite"[All Fields] OR "ascites"[MeSH Terms] OR "ascites"[All Fields] OR "ascitic"[All Fields])) OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND "leak"[All Fields])) OR (("pancreatic ducts"[MeSH Terms] OR ("pancreatic"[All Fields] AND "ducts"[All Fields]) OR "pancreatic ducts"[All Fields] OR ("pancreatic"[All Fields] AND "duct"[All Fields]) OR "pancreatic duct"[All Fields]) AND "leak"[All Fields])) AND 1994/01/01:2025/12/31[Date - Publication]) OR (("pancreatic ducts"[MeSH Terms] OR ("pancreatic"[All Fields] AND "ducts"[All Fields]) OR "pancreatic ducts"[All Fields] OR ("pancreatic"[All Fields] AND "duct"[All Fields]) OR "pancreatic duct"[All Fields]) AND ("disrupt"[All Fields] OR "disrupted"[All Fields] OR "disrupter"[All Fields] OR "disrupters"[All Fields] OR "disrupting"[All Fields] OR "disruption"[All Fields] OR "disruptions"[All Fields] OR "disruptive"[All Fields] OR "disruptiveness"[All Fields] OR "disrupts"[All Fields]))) AND 1994/01/01:2025/12/31[Date - Publication])) AND (1994/1/1:2025/12/31[pdat])	648
4	#3 OR (pancreatic duct disruption)	from 1994/1/1 - 2025/12/31	((((("pancreatic fistula"[MeSH Terms] OR "ascites"[MeSH Terms] OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND ("ascite"[All Fields] OR "ascites"[MeSH Terms] OR "ascites"[All Fields] OR "ascitic"[All Fields])) OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND "leak"[All Fields]) OR (("pancreatic ducts"[MeSH Terms] OR ("pancreatic"[All Fields] AND "ducts"[All Fields]) OR "pancreatic ducts"[All Fields] OR ("pancreatic"[All Fields] AND "duct"[All Fields]) OR "pancreatic duct"[All Fields]) AND "leak"[All Fields])) AND 1994/01/01:2025/12/31[Date - Publication]) OR (("pancreatic ducts"[MeSH Terms] OR ("pancreatic"[All Fields] AND "ducts"[All Fields]) OR "pancreatic ducts"[All Fields] OR ("pancreatic"[All Fields] AND "duct"[All Fields]) OR "pancreatic duct"[All Fields]) AND ("disrupt"[All Fields] OR "disrupted"[All Fields] OR "disrupter"[All Fields] OR "disrupters"[All Fields] OR "disrupting"[All Fields] OR "disruption"[All Fields] OR "disruptions"[All Fields] OR "disruptive"[All Fields] OR "disruptiveness"[All Fields] OR "disrupts"[All Fields]))) AND (1994/1/1:2025/12/31[pdat])	16,318
3	((#2) OR (pancreatic leak)) OR (pancreatic duct leak)	from 1994/1/1 - 2025/12/31	("pancreatic fistula"[MeSH Terms] OR "ascites"[MeSH Terms] OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND ("ascite"[All Fields] OR "ascites"[MeSH Terms] OR "ascites"[All Fields] OR "ascitic"[All Fields])) OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND "leak"[All Fields]) OR (("pancreatic ducts"[MeSH Terms] OR ("pancreatic"[All Fields] AND "ducts"[All Fields]) OR "pancreatic ducts"[All Fields] OR ("pancreatic"[All Fields] AND "duct"[All Fields]) OR "pancreatic duct"[All Fields]) AND "leak"[All Fields])) AND (1994/1/1:2025/12/31[pdat])	15,919
2	((pancreatic fistula[MeSH Terms]) OR (ascites[MeSH Terms])) OR (pancreatic ascites)		"pancreatic fistula"[MeSH Terms] OR "ascites"[MeSH Terms] OR (("pancreas"[MeSH Terms] OR "pancreas"[All Fields] OR "pancreatic"[All Fields] OR "pancreatitides"[All Fields] OR "pancreatitis"[MeSH Terms] OR "pancreatitis"[All Fields]) AND ("ascite"[All Fields] OR "ascites"[MeSH Terms] OR "ascites"[All Fields] OR "ascitic"[All Fields]))	25,052
1	(chronic pancreatitis) OR (chronic pancreatitis[MeSH Terms])		"pancreatitis, chronic"[MeSH Terms] OR ("pancreatitis"[All Fields] AND "chronic"[All Fields]) OR "chronic pancreatitis"[All Fields] OR ("chronic"[All Fields] AND "pancreatitis"[All Fields]) OR "pancreatitis, chronic"[MeSH Terms]	25,439