

## Literature vs Clinical Disparity

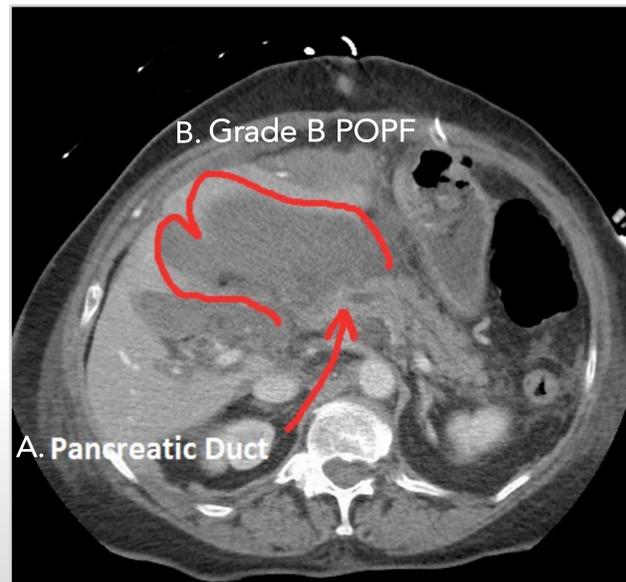
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### Background

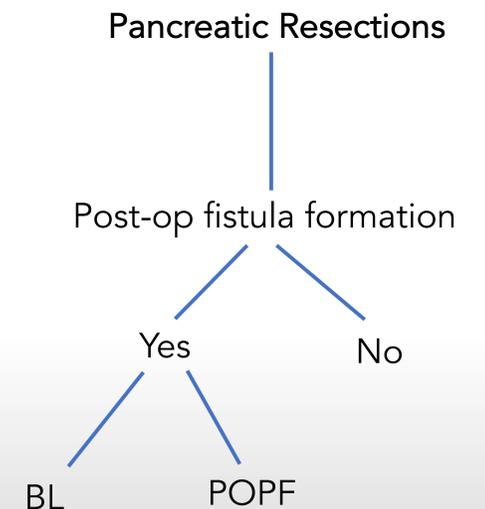
- Biochemical leaks (BLs) and post-operative pancreatic fistulas (POPFs) are a complication of distal pancreatectomies (PDs) and pancreaticoduodenectomies (Whipple).
- Can be defined as an aberrant conduit for pancreatic fluid between the epithelium of a given epithelial surface and pancreatic ductal epithelium.
- International Study Group on Pancreatic Surgery (ISGPS) Classification:
  - Biochemical leak- asymptomatic, subclinical
  - Grade B (Figure 1), Grade C- symptomatic, clinically relevant. <sup>1,2</sup>
- Yet, POPF mortality rate is still evident (1.23%). <sup>3</sup>



**Figure 1.** CT scan featuring the pancreatic duct (A) and a developed grade B POPF (B) as outlined

### Methods

- Retrospective evaluation of patients undergoing:
  - Pancreatic resections within PRISMA ie: pancreatectomies (PDs) and pancreaticoduodenectomies (Whipples) throughout 3/1/2016 to 5/1/2021.
- BL/POPF indicators were included when gathering demographic and clinicopathologic data.
- Exclusion criteria included patients with incomplete medical records.
- Patients were then stratified based on BL/POPF presence.

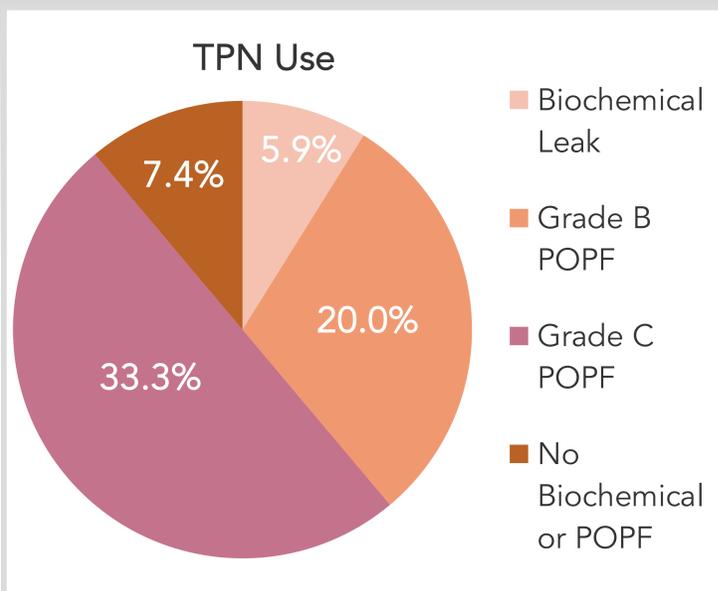


### Results

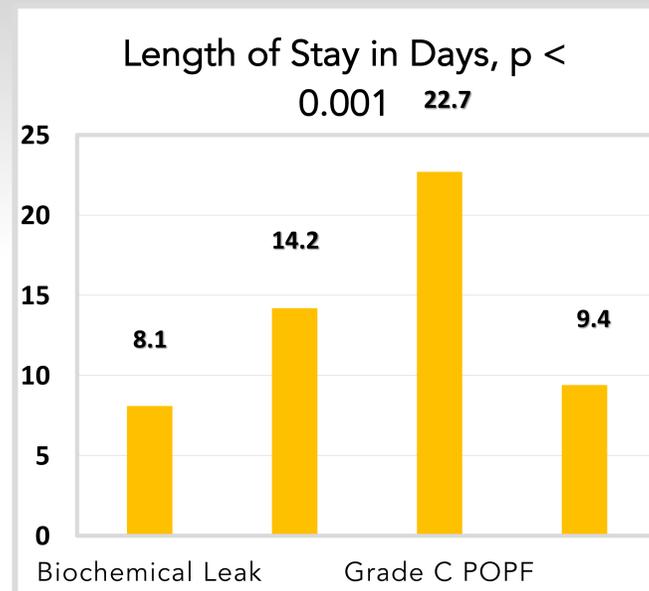
- Of the total patients included in the study (n=156), 69% developed no POPF; 11% had a biochemical leak, 16% Grade B pancreatic fistula, and 4% Grade C pancreatic fistula.
- Body mass index (BMI) (p=0.0115) showed to portend worse outcomes in relation of BL/POPF (Table 1).
  - All other demographic variables showed no significant difference.
- Diagnoses of pancreatic adenocarcinoma (p=0.0011) or chronic pancreatitis (p=0.0187) were significantly associated with poorer outcomes as well.
- The use of total parenteral nutrition (TPN) for post-op nutritional support was significantly increased in patients with Grade B or C POPFS, (p=0.0045) (Figure 1).
- Lastly, length of stay (LOS) in hospital demonstrated significant correlation with grade of POPF (p= <0.001) (Figure 2).

Demographic Variable	Total	Biochemical Leak	Grade B POPF	Grade C POPF	No Biochemical or POPF	P-Value
<b>BMI Category</b>	n= 156	n=17 (11%)	n=25 (16%)	n=6 (4%)	n= 108 (69%)	<b>0.0115</b>
Underwt/Nl (<25.0)	58 (37.2%)	4 (23.5%)	6 (24.0%)	0 (0%)	48 (44.4%)	
Overwt (25.0-29.9)	39 (25.0%)	<b>4 (23.5%)</b>	<b>4 (16.0%)</b>	<b>2 (33.3%)</b>	29 (26.9%)	
Obese (≥30.0)	59 (37.8%)	<b>9 (52.9%)</b>	<b>15 (60.0%)</b>	<b>4 (66.7%)</b>	31 (28.7%)	

**Table 1.** Data demonstrates in the BMI category overweight and obese statistically trend toward biochemical leak or severity of POPF. BMI= body mass index; Underwt=underweight; Nl= normal; Overwt=overweight



**Figure 1.** Percentage of TPN use associated with POPF



**Figure 2.** Mean length of stay associated with POPF severity

### Discussion

- Data demonstrate that poorer outcomes, such as increase LOS and use of TPN, are associated with increasing grade of POPF- and thus severity of post-op complication.
- This underscores the need for early diagnosis and management of BLs and POPFs that is overlooked or delayed when serum and corresponding amylase levels are not consistently drawn on all patients on indicated post-operative days as current literature suggests. <sup>4</sup>
- By enforcing standardization on post-op amylase lab draws for the assessment of POPF, not only will this aid in identifying a BL, but potentially mitigating POPFs, providing an opportunity to decrease advanced nutritional support (TPN) and LOS- ultimately, optimizing patient outcomes in post-pancreatic resections. <sup>5</sup>

