

Analysis of Pancreatic Pseudocyst Drainage Procedural Outcomes using the 2017 NIS Database

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Background

A pancreatic pseudocyst (PP) is a collection of fluid surrounded by a well-defined wall that contains no solid material. Studies on outcomes of PP drainage techniques, in particular the relatively newer method of endoscopic drainage, have largely been limited to randomized control trials. This study aims to take a population based approach to evaluate differences in inpatient outcomes among open surgical, laparoscopic, percutaneous, and endoscopic drainage for PP.

Methods

The National Inpatient Sample database was used to identify inpatient stays for pancreatic pseudocyst with a single drainage approach. Primary outcomes were length of stay (LOS), total charge, mortality, and disposition. Secondary outcomes were procedure related complications. Multivariable regression was used to analyze outcomes adjusted for patient and hospital characteristics.

Results

A total of 3,720 pseudocyst cases underwent drainage via a single procedure. After adjusting for covariates, endoscopic drainage (aRR: 0.7, 95% CI 0.55-0.9, p=0.01) and laparoscopic drainage (aRR: 0.78, 95% CI 0.64 - 0.95, p=0.01) were associated with shorter LOS. Endoscopic drainage was associated with the lowest relative total charge (-28%, p=0.01) followed by laparoscopic (-25.9%, p=0.001). Percutaneous drainage was associated with a lower likelihood of routine disposition (aOR: 0.56, 95% CI 0.32 -1, p=0.05). Endoscopic (aOR: 0.06, 95% CI 0.01-0.5, p=0.01) and laparoscopic (aOR: 0.36, 95% CI 0.16 - 0.8, p=0.01) drainage had lower rates of acute post hemorrhagic anemia. Percutaneous drainage was associated with higher rates of sepsis (aOR: 2.05, 95% CI 1.09 - 3.85, p=0.03) and pneumonia (aOR: 4.26, 95% CI 1.08 - 16.86, p=0.04).

Conclusions

Endoscopic and laparoscopic PP drainage are associated with the least short term procedure related complications and more favorable outcomes compared to open surgical and percutaneous approaches.