

PEBL (Percutaneous Endoscopic Biliary Lithectomy): Outcomes and Initial Experience of Surgeon-led Endoscopic Management of Gallstone Disease in the Non-Surgical Candidate.



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BACKGROUND

Percutaneous Endoscopic Biliary Lithectomy (PEBL)

- Novel procedure treating cholecystitis
- High risk, non-surgical patients
- Limited data on outcomes when performed by surgeons

AIM

Evaluate 3 key metrics for surgeon-led program of endoscopic management of gallstone disease:

- Operative experience
- Clinical success rates
- Complication rates

METHODS

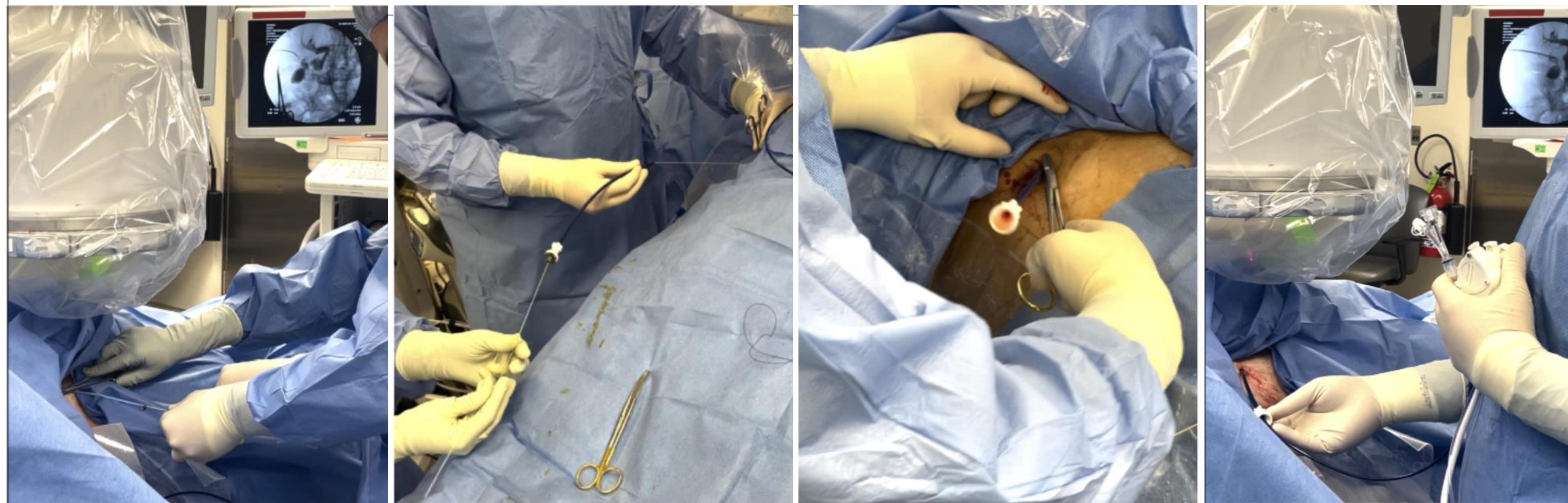
- PEBLs performed 2021-2025
- 2 General Surgeons (endoscopy trained)
- Single-institution
- Retrospective analysis
- 41 patients, 53 procedures

Clinical success: Complete stone clearance and removal of cholecystostomy catheter without conversion to cholecystectomy, alternative gallbladder drainage or chronic indwelling catheter.

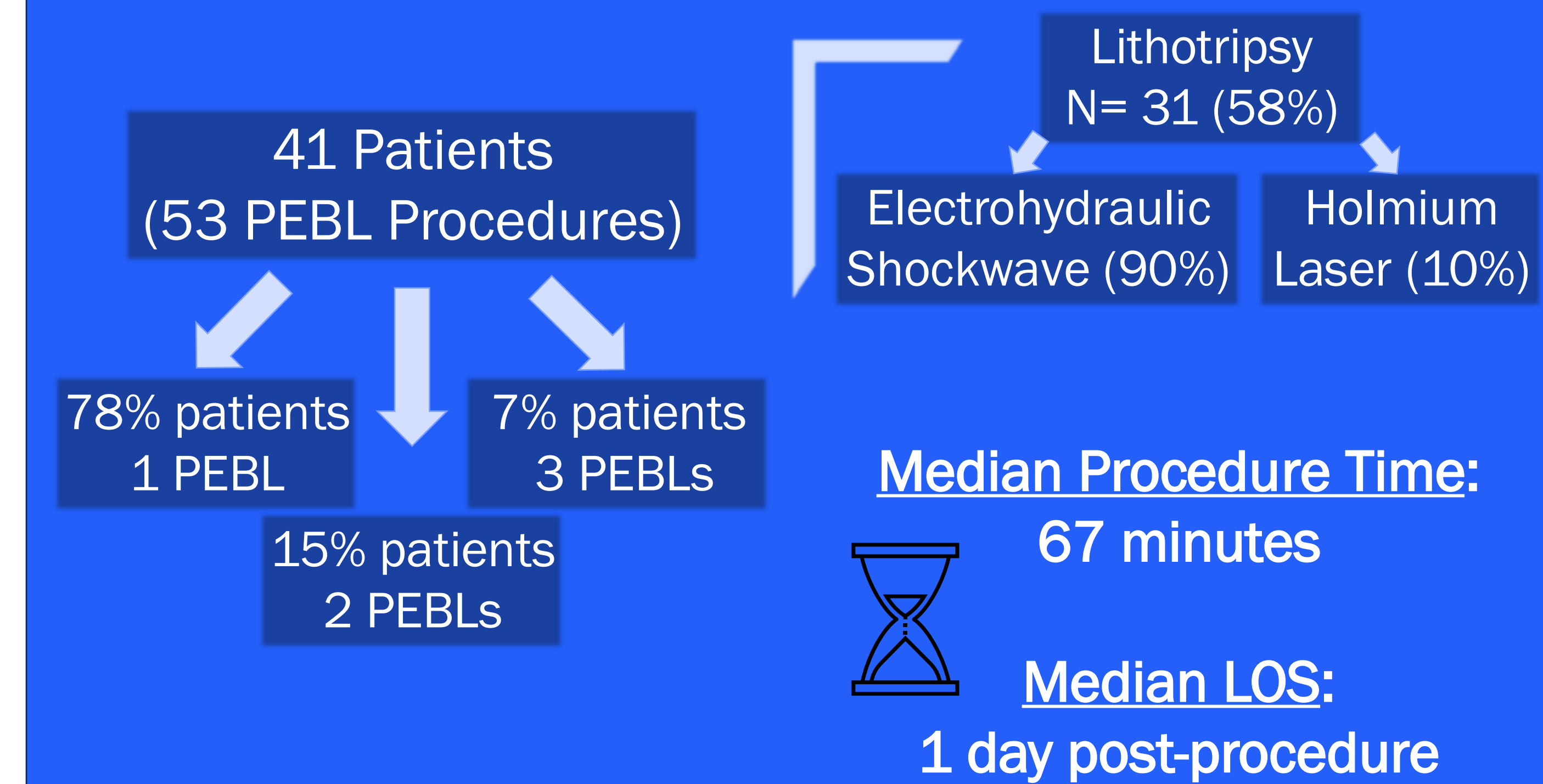
RESULTS

Of 41 patients (40% female), 32 patients (78%) underwent one PEBL procedure, 6 (14.7%) underwent two PEBL procedures, and 3 (7.3%) underwent three PEBL procedures. The average age was 82 years (range 48-99). Average Charlson-Comorbidity index was 7.78, and average ASA class was 3.27. Lithotripsy was performed in 31 (58%) PEBLs, 28 (90%) were performed using electrohydraulic shockwave (EHL) and 3 (10%) with holmium laser. Median procedure time was 67 minutes, with average time an of 85 minutes. Median length of stay (LOS) of 1-day post-procedure, with average LOS of 1.66 days. No antiplatelet therapy or anticoagulation was held prior to procedure, and all procedures were performed under moderate or MAC sedation. Technical success of endoscopic entry into the gallbladder was 87%.

PCTs were removed in 38 (93%) patients. Of those 38 patients, 12 (29%) PCTs were removed at time of PEBL, 17 (41%) at 2-week outpatient follow-up, 4 (10%) at conversion to laparoscopic cholecystectomy, 3 (7%) by interventional radiology (IR) after confirming biliary ductal patency, and 2 (5%) converted to cholecystoduodenal fistula/stent. Overall PEBL clinical success rate was 78% (32/41). Complication rate was 9.4% (5 patients), of which two (4%) were Clavien-Dindo Grade 1, two (4%) were Clavien-Dindo grade 3a requiring IR, and one (1.4%) Clavien-Dindo Grade 3b requiring conversion to cholecystectomy. Recurrent cholecystitis was observed in 3 patients (7.3%); 1 confirmed acalculous cholecystitis on multimodality imaging, 1 a recurrence 5 days post-PEBL, and 1 a true recurrence 137 days post-PEBL.



SUMMARY



Clinical Success:

78% (32/41) patients achieved removal of all cholelithiasis and indwelling catheter

- Recurrent Cholecystitis occurred in 3 of 41 (7.3%) patients.
- 2 of 41 (4.8%) patients had complications requiring IR intervention or intra-operative conversion to cholecystectomy

CONCLUSION

- Safe novel procedure managing cholecystitis in high-risk patients
- Short length of stay
- Performed without general anesthesia or anticoagulation cessation
- High success rate for cholelithiasis clearance and PCT removal
- Low complication rates, even in patients with significant comorbidities
- Valuable option where few treatment alternatives exist