

EFFECT OF INTRAOPERATIVE BILE SPILLAGE DURING CHOLECYSTECTOMY ON LENGTH OF STAY AND 30-DAY POSTOPERATIVE OUTCOMES

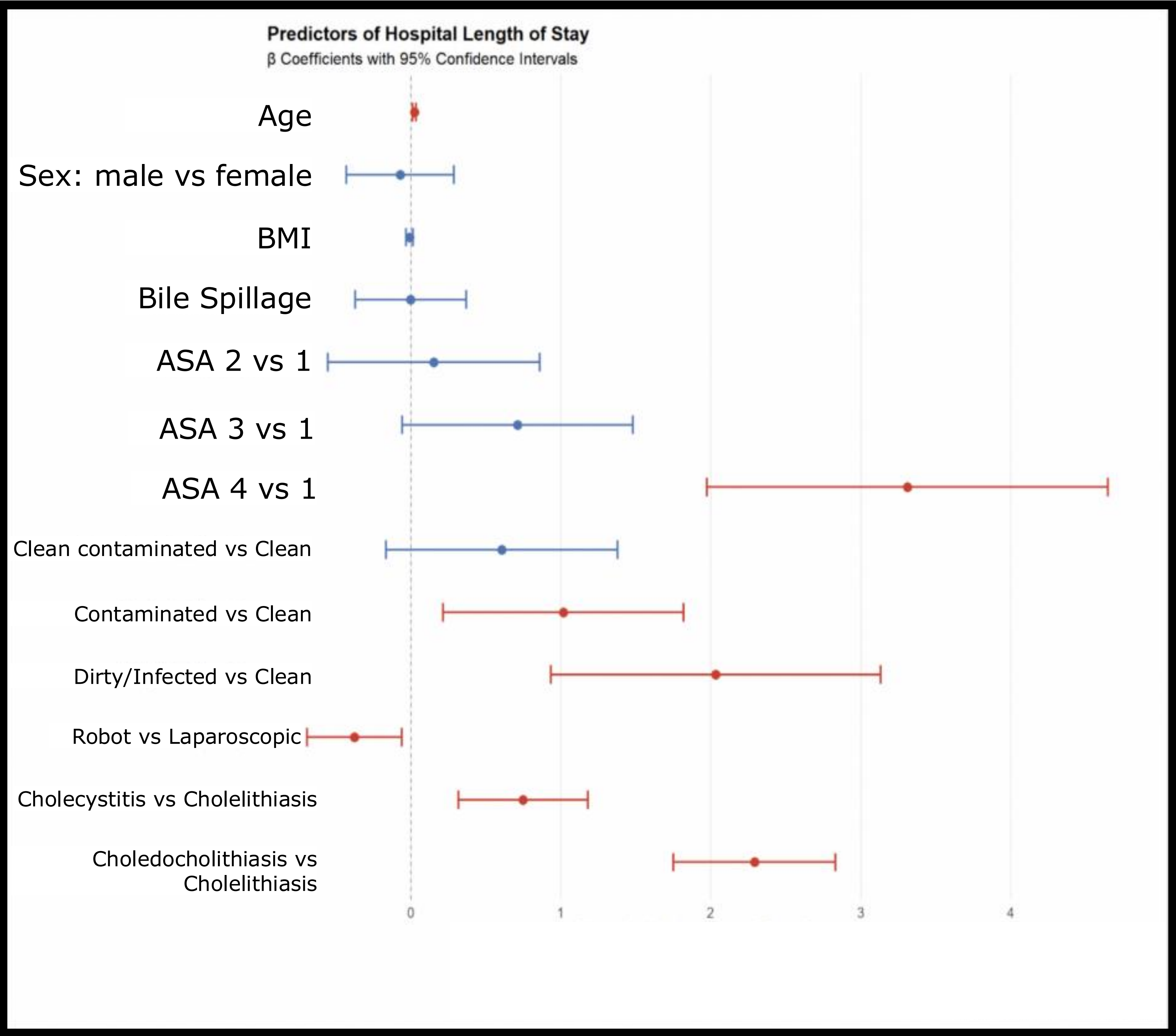
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Background

- Primary Aim: determine if intra-operative bile spillage during cholecystectomy will alter hospital length of stay (LOS)
- Secondary Aim: evaluate 30-day post-operative outcomes, including post-operative antibiotic use and abdominal drain placement with respect to intra-operative bile spillage

Methods

- Retrospective chart review on 1065 adult patients who had cholecystectomy between 2/1/22 and 8/1/25
- Charts were reviewed through post-op day 30
- A templated operative note was used to determine if bile was spilled
- Exclusions: cholecystectomy done as part of a larger operation
- Variables: age, sex, ASA classification, wound classification, diagnosis, and surgical approach, as well as LOS, antibiotic use, abdominal drain placement



Independent Predictors of Increased Length of Stay after Cholecystectomy

X-axis: Hospital length of stay in days

Y-axis: Variables

Red: significant

Blue: not significant

Table 6. Multivariable Logistic Regression: Factors Associated with Bile/Stone Spillage

Characteristic	OR for Spillage ^{1,2}	95% CI ²	p-value
Age	1.01	1.01, 1.02	0.003
Sex			
Female	—	—	
Male	1.92	1.35, 2.73	<0.001
BMI	1.00	0.98, 1.03	0.7
ASA Classification			
1	—	—	
2	1.87	0.97, 3.67	0.065
3	2.14	1.05, 4.45	0.039
4	1.55	0.42, 5.80	0.5
Wound Class			
Clean	—	—	
Clean Contaminated	1.05	0.55, 2.04	0.9
Contaminated	9.76	4.90, 19.9	<0.001
Dirty or Infected	14.0	4.05, 65.9	<0.001
Surgical Approach			
Laparoscopic	—	—	
Robot-assisted	0.49	0.36, 0.66	<0.001
Primary Diagnosis			
Cholelithiasis	—	—	
Cholecystitis	1.46	0.98, 2.16	0.062
Choledocholithiasis	1.23	0.75, 2.02	0.4

¹ OR = Odds Ratio for bile/stone spillage occurrence
² OR = Odds Ratio, CI = Confidence Interval

Results

- Independent factors associated with intra-operative bile spillage: Age, male sex, and ASA 3
- Independent factors for increased LOS: Age, ASA 4, contaminated/dirty wound class, cholecystitis, and choledocholithiasis
- Robotic surgery independently correlated to both decreased length of stay and intra-operative bile spillage
- Intra-operative bile spillage was associated with post-operative antibiotic use as well as abdominal drain placement at time of surgery

Conclusion

- Main determinants of LOS following cholecystectomy include comorbidity burden, high wound class, and indications other than cholelithiasis
- While intra-operative bile spillage is not associated with prolonged LOS, efforts to minimize bile spillage may reduce the use of post-operative antibiotics & abdominal drain placement