POLYMER VERSUS METAL CLIPS IN LAPAROSCOPIC CHOLECYSTECTOMY: SURGEON PREFERENCE AND OUTCOMES

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Introduction

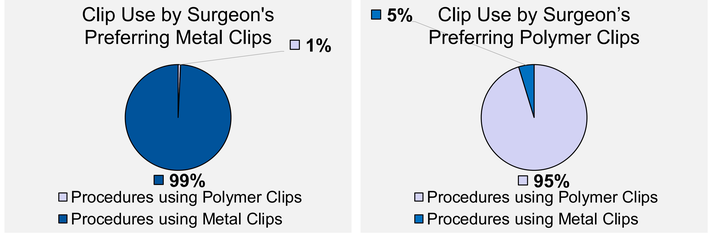
- Surgeon experience and use of intraoperative cholangiography reduces the risk of complications during laparoscopic cholecystectomy.
- Metal or polymer clips are placed on the cystic duct and cystic artery prior to their ligation during laparoscopic cholecystectomy.
- Surgeon practice patterns of metal and polymer clip preference has not been studied.
- **Purpose:** This study aims to describe differences in surgeon preference for the type of clip and 30-day outcomes after elective laparoscopic cholecystectomy.

Methods

- Patients ≥ 18 years who underwent elective laparoscopic cholecystectomy (CPT code 47562 and 47563) from 2017 to 2019.
- Surgeon characteristics and 30-day outcomes were compared using Pearson's chi-square for categorical variables and Wilcoxon rank-sum for continuous variables.
- The ***primary outcome*** was 30-day complications.

Surgeon Preference & Clip Use

Figure 1: Clip Type Usage by Surgeon Preference



Surgeon Characteristics

Table 1: Surgeon by Clip Type Preference

Characteristics	Metal Clip (N=22)	Polymer Clip (N=16)	Total (N=38)	p-value
Year of Medical School Graduation				
Mean (SD)	1992.9 (11.4)	2002.6 (5.3)	1997.0 (10.4)	0.019[2]
Median	1994.0	2001.5	1999.0	
Q1, Q3	1982, 2003	1998, 2006	1999, 2006	
Range	1974-2008	1995-2012	1974-2012	
Surgeon Fellowship				
No	8 (36.4%)	3 (18.8%)	11 (28.9%)	0.30[1]
Yes	14 (63.6%)	13 (81.3%)	27 (71.1%)	
Number of Procedures				
Mean (SD)	42.1 (68.2)	19.9 (35.9)	32.7 (57.3)	0.21[2]
Median	18.0	7.0	8.5	
Q1, Q3	5.0, 49.0	3.0, 25.0	3.0, 38.0	
Range	1.0-310.0	1.0-146.0	1.0-310.0	

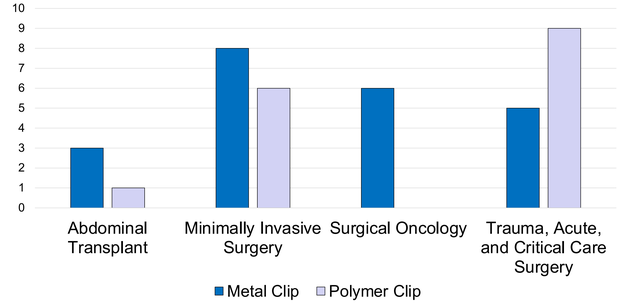
[1]Fisher Exact
[2]Wilcoxon

Results

- **38 surgeons** were included in this study.
- More surgeons preferred metal clips (N=22, 57.9%) compared to polymer clips (N=16, 42.1%).
- **Intraoperative cholangiograms** were more often utilized by surgeons who **preferred polymer clips**.
- 30-day rates of readmission, post-operative fluid collection, infection, and endoscopic retrograde cholangiopancreatography were similar surgeon groups (p>0.05). There were no bile duct injuries in this study.

Results (cont.)

Figure 2: Clip Type Preference by Surgeon Division



Discussion & Summary Points

- Surgeons predominantly use one clip type during elective laparoscopic cholecystectomy.
- Surgeon preference for type of clip was **not associated with increased 30-day complications**.
- Future studies should investigate the influence of fellowship training on surgeon's attitudes toward new technology.

References

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2. Seyed Esfahani M, Heydari Khajehpour S, Roushan-Easton G, Howell RD. A framework for successful adoption of surgical innovation. Surgical Innovation. 2022;29(5):662-670.

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