

# Tie versus Clipping Typed of Cystic Duct and Artery Ligation in Laparoscopic Cholecystectomy

Jimmy Mena<sup>1</sup>, Mahmoud Sallam<sup>2</sup>

<sup>1</sup>Upper GI Surgical Registrar, Leighton Hospital

<sup>2</sup>General Surgery Registrar, University Hospital Monklands

**Abstract:** *In laparoscopic cholecystectomy, the cystic duct and cystic artery are usually preserved with titanium clamps. Because clips can be difficult to apply; In collapsing and moving the clips, various other methods have therefore been used, such as intra- or extracorporeal leasing, the use of absorbent clips, a harmonic scalpel. Implementing an in-house leasing rule requires more time and good preparation. On the other hand, shear problems arise in cases with wide cystic tubes. The purpose of the review is to compare the effectiveness and safety of CD ligation versus clipping with the time difference between the cystic duct and the cystic artery and the two laparoscopic cholecystectomy methods.*

**Keywords:** laparoscopic cholecystectomy, Tie versus clipping, cystic duct and artery ligation

## 1. Introduction

Laparoscopic cholecystectomy is the most common surgical procedure and offers better surgical results than open cholecystectomy, less postoperative pain, fewer hospitalizations, faster return to normal activities and more aesthetic results but it requires more infrastructure and more expensive equipment. LC is also associated with advanced disease such as bile duct injury, bile leakage and damage to surrounding structures, uncontrolled bleeding, gallstone leakage, bile stiffness and slipping. Postoperative biliary flow is a serious complication, occurring in about 0.3 cases. In CP, the cystic duct and cystic artery are usually anchored with a titanium clamp. There are other ways to secure the cystic duct and cystic artery, such as intracorporeal ligaments with absorbable suture material, or extra-corporeal ligament with cystic duct and separate and multiple ligatures, absorbing forces, a harmonic scalpel, Problems using these modern tools. The study found that cystic duct excavation is more expensive for some countries. On the other hand, the use of tweezers has been shown to have some disadvantages, namely: b. Displacement and leakage of bile. After long-term follow-up, cases of forceps migration leading to gallstones or biliary stenosis have been reported. Other studies have shown that staples accelerate the duodenum. Although intracorporeal ligation clamping takes longer and requires good training, some studies have shown that separate surgeries of cystic duct and cystic artery do not increase operative time if the surgeon is experimenting with intracorporeal ligation. Is. Many others saw it as a viable, inexpensive, and safe alternative to protecting cystic ducts and cystic arteries in LC. Although cutting and using a harmonic scalpel to fix the cystic duct and cystic artery in the control line is an effective and easy way, they present a problem in cases with a wide cystic duct (> 5 mm). The purpose of this study is to compare two different methods. In terms of efficacy and safety, there is a difference in the operational time between the Binding vs. Clip, as well as for both methods of fixing the cystic duct and cystic artery in the LC.

## 2. Methods

The review included patients with symptomatic GS who underwent LC; performed by the two teams used different approaches. Demographic data (age, sex and residence), body mass index, posterior cholecystitis, pancreatitis, endoscopic retrograde choleography, and preoperative abdominal surgery all recorded before the operation.. Postoperative patients returned to the outpatient clinic on the first and second postoperative weekend for any complications. Both groups had GS mixed cases; Acute and chronic cholecystitis. LC's standard technology was carried out with four ports. The intraoperative findings and complications recorded. The times of the operations estimated from the first skin incision until the closing of the skin wounds. Any case of conversion to OC was excluded.

Group A: include 30 patients had LC, ligations of cystic duct and cystic artery were done by tying them using 2/0 vicryle suture material by intra-corporeal knotting separately.

Group B: include 45 patients had LC, clipping of cystic duct and cystic artery were done by using Titanium clips.

## 3. Results

- As we can see, in 30 patients cystic duct and cystic artery were ligated by ties, while in 45 patients cystic duct and cystic artery were secured by clips.
- There was no big difference in uptime. There was no significant difference between surgery time and presentation, and there was no significant difference between surgery times between the two groups.
- There was no significant difference between the two groups between the time of surgery and the history and time of upper abdominal surgery.
- There were no significant differences between the times of the operations and presence of umbilical hernias, and also between the times of the operations in both groups.
- There was no significant difference between the times of the operations regarding BMI, and also between the times of the operations in both groups.

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#### 4. Discussion

Laparoscopic cholecystectomy is increasingly performed as a day's surgery. There was no significant difference in morbidity between one-day surgery and overnight stay, and both approaches had the same length of stay and reading rate. In addition, there were no significant differences in visual analog values, postoperative nausea and vomiting scores, time to return to activity, and function between the two groups. In some patients, laparoscopic cholecystectomy can be safely performed as a one-day surgery. Cystic ducts and arteries are usually closed with titanium clamps. They reported no biliary leakage or other problems with intracorporeal ligation of the duct / artery of the cyst with 2/0 silk. The time required for the draw was between two and seven minutes. Cystic ducts and arteries are usually reported to be placed with titanium clamps. Internal lasing is generally superior to extracorporeal ligation. A single ligation of arteries and tubes is safe and economical. The authors noted the more benefits of simple ligation of cystic tubes. This is easy and practical as it requires special expertise to tie a knot in the body. This is an easy and easy technique. Of course, simple relationships are always available and very economical. Another study found that intracorporeal knot tying and loop closure were safe, successful and complimentary appendage techniques. The authors observed that the silk base was a better alternative to the scan base than a harmonica-like device. Cystic duct leakage with metal clips persists even after laparoscopic cholecystectomy. An alternative to metal clips is the use of locking clips on cystic duct stump leaks after LC. One study observed the migration of two clips to the common bile duct (CBD) as maintenance of the rare complications of LC and highlighted that it was characterized by the differential diagnosis of recurrent cholangitis in post-cholestatic cases. It should be noted as. One author described intermittent migration of surgical clips to CBD after 10 years of CL, which was rare and could result in gallstone clip cholelithiasis.

#### 5. Conclusion

Ligation for cystic duct and artery is safe and effective. During this time, there was no significant difference in operation. In addition to using clipping, it is important to learn the knots in the body, especially where the bile ducts are wide and the clips are the wrong size, which should be the recommended training for basic laparoscopic surgery.

#### References

- [1] Singal R, Singal RP, Sandhu K, Singh B, Bhatia G, Khatri A, Sharma BP. Evaluation and comparison of postoperative levels of serum bilirubin, serum transaminases and alkaline phosphatase in laparoscopic cholecystectomy versus open cholecystectomy. *J Gastrointest Oncol.* 2015;6:479–486. [PMC free article] [PubMed] [Google Scholar]
- [2] Gaillard M, Tranchart H, Lainas P, Dagher I. New minimally invasive approaches for cholecystectomy: Review of literature. *World J Gastrointest Surg.* 2015;7:243–248. [PMC free article] [PubMed] [Google Scholar]
- [3] Zaman M, Singal S, Singal R, Shah A, Sandhu KS, Singh B, Khera A, Bassi S. Comparison of Open and Closed Entry Techniques for Creation of Pneumoperitoneum in Laparoscopic Surgery in Terms of Time Consumption, Entry-related Complications and Failure of Technique. *World J of Laparoscopic Surg.* 2015;8:69–71. [Google Scholar]
- [4] Shah JN, Maharjan SB. Clipless laparoscopic cholecystectomy--a prospective observational study. *Nepal Med Coll J.* 2010;12:69–71. [PubMed] [Google Scholar]
- [5] K. L. Leung, K. H. Kwong, W. Y. Lau, *et al.*, "Absorb-able Clips for Cystic Duct Ligation in Laparoscopic Cholecystectomy," *Surgical Endoscopy*, Vol. 10, 1996, pp. 49-51. doi:10.1007/s004649910012
- [6] A. J. McMahon, G. Fullarton, J. N. Baxter and P. J. O'Dwyer, "Bile Duct Injury and Bile Leakage in Laparoscopic Cholecystectomy," *British Journal of Surgery*, Vol. 82, No. 3, 1995, pp. 307-313. doi:10.1002/bjs.1800820308
- [7] Abou-Sheishaa MS, ElHadidi A, Negm A, AbdElhalim M, Beshir M, Elbahy A, Comparing the efficacy and safety of methods for securing the cystic duct in laparoscopic cholecystectomy: metallic clip versus harmonic scalpel versus suture ligation: (Prospective study). *Al-azharassiut medical journal.* 2015;13(1): 96-101.
- [8] Photi ES, Partridge G, Rhodes M, Lewis MP. Surgical clip migration following laparoscopic cholecystectomy as a cause of cholangitis. *J Surg case rep.* 2014 Apr 1; 2014(4):rju026.
- [9] Raja W, Mathai SK, Sebastian B, Ahmad A, Khan SS, George M. Surgical Clip Migration Following Laparoscopic Cholecystectomy as a Cause of CBD Stone. *In J Gastroenterol.* 2017 Jul 10;1(1):9.
- [10] Chong VH, Yim HB, Lim CC. Clip-induced biliary stone. *Singapore Med J.* 2004; 45: 533.