

REVIEW ARTICLE

LAPAROSCOPIC CHOLECYSTECTOMY IN THE TREATMENT OF CHOLECYSTITIS- A REVIEW ARTICLE

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ABSTRACT:

Gallbladder-related disease is now one of the commonest indications for elective and emergency surgery. Management of cholecystitis and its complications has evolved dramatically. Laparoscopic cholecystectomy is the standard treatment for symptomatic gall stone disease. The first open cholecystectomy was performed by Carl Langenbuch in 1882, who believed in the theory that the gallbladder needed to be removed not because it had gallstones, but because it was “sick”. After that, the technique was popularized through large incisions. Despite these advances, significant variability in approaches to care and outcomes in gall-bladder disease management are reported. Surgeons should be aware that the subgroup of patients whose preoperative symptoms include bloating, regurgitation and globus sensation and who have required psychotropic drugs may in fact have 'silent gall stones' and irritable bowel syndrome. Such patients are unlikely to benefit from laparoscopic cholecystectomy.

Key Words: Cholecystectomy, Laparoscopic, Surgeons, Treatment

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INTRODUCTION

Gallbladder-related disease is now one of the commonest indications for elective and emergency surgery. Management of cholecystitis and its complications has evolved dramatically¹ and there have been significant paradigm shifts in the management of patients since the introduction of laparoscopic cholecystectomy in the mid 1990.² Recently the importance of index admission laparoscopic cholecystectomy has been highlighted.³ In many large series and meta-analyses detailed patient demographics and imaging findings have been recorded. A number of international guidelines recommend pathways of care.^{4,5} Cholelithiasis is one of the most common digestive tract diseases and constitutes an important health problem in developed countries. Attempts have been made to standardize definitions particularly relating to cholecystitis.⁶ Understanding outcomes is key to advancing health care, and while conversion to open cholecystectomy will always be an essential part of

safe surgical practice, a greater understanding of the factors leading to conversion and potential post-operative complications would be essential. Despite these advances, significant variability in approaches to care and outcomes in gall-bladder disease management are reported.⁷

The introduction of the laparoscopic technique in 1985, first made by Mühe was an important factor for the large increase in the cholecystectomy, since it represented a less invasive technique, generated better esthetic result and provided a lower surgical risk compared to the conventional procedure.⁸

Dubois and Barthelot introduced in 1982, minimally invasive technique for conventional cholecystectomy, the minilaparotomy cholecystectomy, and Tyagi et al, in 1994, described a new technique for minimally invasive cholecystectomy, and this has recently challenged the role of laparoscopic cholecystectomy.

Langenbuch in 1882, who believed in the theory that the gallbladder need to be removed not because it

had gallstones, but because it was “sick”. After that, the technique was popularized through large incisions⁹. In 1985, Erich Mühe in Böblingen, Germany, performed the first laparoscopic cholecystectomy (LC), which became dominant process in the treatment of cholecystitis in late eighties.¹⁰

On the other hand, the advent of thin gauge surgical instruments and paradigms of minimally invasive surgery resulted in a gradual reduction in the length of incisions in the abdominal wall to open cholecystectomy. Subcostal oblique incision smaller than 8 cm in length is defined as minilaparotomy. Can be performed with conventional surgical instruments available in any operating room; is slowly gaining acceptance as a low cost alternative compared to LC. Moreover, minicolectomy (MC) can be more profitable than LC because it eliminates the need for sophisticated equipment and specific medical staff.⁹

The incidence of gallstones - one of the most important cause of morbidity in the world - should increase in next year's due to obesity and older age, known risk factors in the development of cholelithiasis. Currently, minimally invasive procedures, LC and MC, have largely replaced the procedure previously employed, the traditional cholecystectomy.¹¹ However there are discussions about the advantages and disadvantages of minilaparotomy surgery in relation to laparoscopic.¹²

The aetiology underlying variable outcomes from laparoscopic cholecystectomy is complex in origin, relating to disease severity, surgical experience, and available instrumentation. Laparoscopic cholecystectomy is now the gold standard replacing open cholecystectomy. It is accepted that recovery is delayed, and risk of complications compounded by both delayed emergency cholecystectomy and excessive conversion from laparoscopic to open surgery. Account needs to be taken, however, that a specialist hepatobiliary surgeon may have a lower conversion rate than general surgeons. However, comparisons between surgeons, institutions and published series are currently impossible as the denominator of the severity of cholecystitis is not only not standardized but also rarely reported. Lal¹³ and colleagues suggest that a difficult cholecystectomy is one taking longer than 90 minutes, tearing the gallbladder, spending more than 20 minutes dissecting the gallbladder adhesions, or

more than 20 minutes dissecting Calot's triangle. While time to dissection of Calot's triangle will vary on surgical skills and level of experience, it will generally be longer in patients with increasing access difficulty, inflammation and adhesions. Predicting a difficult cholecystectomy is possible with some degree of accuracy, using patient demographics, BMI, presence of a palpable gallbladder, and pre-operative ultrasound (US) or computed tomography (CT) findings. In addition, previous cholecystitis or lithotripsy has been shown to increase the likelihood of a difficult procedure.¹⁴ With increasing pressure to perform acute index admission laparoscopic cholecystectomy, an intraoperativebased scoring system will potentially allow meaningful comparison of outcomes. In addition it may provide a trigger to prompt earlier conversion or link specific outcomes measures such as bile leaks to specific operative scores.

SYMPTOMS AFTER SURGERY

A few patients continue to have gastrointestinal symptoms after laparoscopic cholecystectomy. The term 'postcholecystectomy syndrome' has been used to describe this condition although the term 'persistent postcholecystectomy symptoms' is a more accurate description.¹⁵

It is proven by many studies that patients with symptomatic gall stone disease exhibit a wide spectrum of symptom, many of which are not relieved by cholecystectomy.

The following symptoms are being related to gall stone disease: nausea, vomiting, heartburn, non typical pain, and biliary type pain. In contrast, bloating, regurgitation and globus sensation do not seem to be related to the disease and are not influenced by cholecystectomy. The varying incidence of persistent symptoms after cholecystectomy can be ascribed to the varying methods of evaluation, wording of questionnaires, and patient case mix. In terms of heartburn, removal of the gallbladder in chronically ill patients may increase the risk of perpetuating symptoms by causing a decrease in lower esophageal sphincter pressure, increasing duodenogastric reflux, or inducing sphincter of Oddi dysfunction.¹⁶ The disappearance of heartburn postoperatively may be a reflection, however, of the natural history of gastroesophageal reflux disease.

CONCLUSION

Laparoscopic cholecystectomy is the standard treatment for symptomatic gall stone disease. Surgeons should be aware that the subgroup of patients whose preoperative symptoms include bloating, regurgitation and globus sensation and who have required psychotropic drugs may in fact have 'silent gall stones' and irritable bowel syndrome. Such patients are unlikely to benefit from laparoscopic cholecystectomy.

REFERENCES

1. Murphy JB. The diagnosis of gallstones. *Am Med News* 1903;825–833.
2. Litynski GS. Erich Muhe and the rejection of laparoscopic cholecystectomy: a surgeon ahead of his time. *JLS : Journal of the Society of Laparoendoscopic Surgeons/Society of Laparoendoscopic Surgeons*. 1998;2:341–6.
3. Gutt CN, Encke J, Koninger J, Harnoss JC, Weigand K, Kipfmuller K, et al. Acute cholecystitis: early versus delayed cholecystectomy, a multicenter randomized trial *Ann Surg* 2013;258:385–93.
4. Takada T, Strasberg SM, Solomkin JS, Pitt HA, Gomi H, Yoshida M, et al. TG13: Updated Tokyo Guidelines for the management of acute cholangitis and cholecystitis. *J Hepatobiliary Pancreat Sci*. 2013;20:1–7.
5. Committee AT, Adler DG, Conway JD, Farraye FA, Kantsevov SV, Kaul V, et al. Biliary and pancreatic stone extraction devices. *Gastrointest Endosc*. 2009;70:603–9.
6. Yokoe M, Takada T, Strasberg SM, Solomkin JS, Mayumi T, Gomi H, et al. TG13 diagnostic criteria and severity grading of acute cholecystitis. *J Hepatobiliary Pancreat Sci*. 2013;20:35–46.
7. Pitt HA. Patient value is superior with early surgery for acute cholecystitis. *Ann Surg*. 2014; 259:16–7.
8. Mühe E. Die erste cholecystektomie durch das laparoskop. *Langenbecks Arch Surg*. 1986; 369-804.
9. Vagenas K, Spyrapoulos P, Karanikolas M, Sakelaropoulos G, Maroulis I, Karavias D. Mini-laparotomy cholecystectomy versus laparoscopic cholecystectomy: which way to go? *Surg Laparosc Endosc Percutan Tech*. 2006 Oct; 16(5):321-4.
10. Velázquez-Mendoza JD, Villagrán-Murillo FJ, González-Ojeda A. Minilaparotomy vs. laparoscopic cholecystectomy: results of a randomized clinical trial. *Cir Cir*. 2012 Mar-Apr; 80(2):115-21.
11. Jadad AR, Moore RA, Carroll D, Jenkinson C, Reynolds DJ, Gavaghan DJ, McQuay HJ. Assessing the quality of reports of randomized clinical trials: is blinding necessary? *Control Clin Trials*, 1996;17:1-12.
12. Harju J, Aspinen S, Juvonen P, Kokki H, Eskelinen M. Ten-year outcome after minilaparotomy versus laparoscopic cholecystectomy: a prospective randomised trial *Surgical Endoscopy* 2013 ;1-5.
13. Lal P, Agarwal PN, Malik VK, Chakravarti AL. A difficult laparoscopic cholecystectomy that requires conversion to open procedure can be predicted by preoperative ultrasonography. *JLS : Journal of the Society of Laparoendoscopic Surgeons/Society of Laparoendoscopic Surgeons*. 2002;6:59–63.
14. Kwon YJ, Ahn BK, Park HK, Lee KS, Lee KG. What is the optimal time for laparoscopic cholecystectomy in gallbladder empyema? *Surg Endosc*. 2013;27:3776–80.
15. Luman W, Adams WH, Nixon SN. Incidence of persistent symptoms after laparoscopic cholecystectomy: a prospective study. *Gut* 1996 39: 863-866.
16. Tanaka M, Ikeda S, Nakayama F. Change in bile duct pressure responses after cholecystectomy: loss of gallbladder as a pressure reservoir. *Gastroenterology* 1984 87: 1154-1159.

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