

Outcome of Laparoscopic Cholecystectomy with and Without Drain

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ABSTRACT

Aim: To compare the outcome of laparoscopic cholecystectomy with and without drain.

Methods: This study was carried out in the Department of General Surgery, Multan Medical & Dental College/Ibn e Siena Hospital & Research Institute, Multan, from July 2010 to December 2013. Five hundred and seventy cases of gallstone disease were registered who fulfilled the inclusion criteria. The allocation of cases to two study groups was settled by random number table. Patients in group A underwent laparoscopic cholecystectomy with drain insertion and those in group B had cholecystectomy without drain.

Results: Patients were divided equally into Group A (with drain) and Group B (without drain). 12 hours post operatively subjective complaint of pain was assessed and projected to visual analogue scale (already defined). 65(22.8%) patients experienced severe pain in group A as compared to 37(12.98%) patients in group B. Almost equal percentage of patients (67.01% in group-A and 68.06% in group B) in both groups experienced mild to moderated pain, however no pain was experienced in 54(18.94%) patients without drain as compared to only 29(10.17%) patients with drain.

Conclusion: Laparoscopic cholecystectomy without drain is better than one with drain, with less post operative pain.

Keywords: Laparoscopic, cholecystectomy, drain, pain.

INTRODUCTION

Gall stone disease is a major health problem world wide, particularly in adult population¹. Sometimes it remains asymptomatic but most of the times it presents with right upper quadrant pain, nausea and vomiting. If not treated, it may lead to complications like acute or chronic cholecystitis, obstructive jaundice and rarely carcinoma gall bladder². The surgical management of gallstones has been revolutionalized after the advent of laparoscopic cholecystectomy since 1985 and has become one of the most common general surgical procedure³. This technique has virtually become the gold standard in the management of cholecystitis^{1,4,5}.

During last two centuries, surgeons have used drains for prophylactic purposes to remove intra peritoneal collections such as ascites, blood, bile, pancreatic and intestinal secretions. These collections might become potentially infected or, in case of bile and pancreatic juice, toxic for adjacent tissues. Theodor Billroth was convinced that prophylactic drainage of peritoneal cavity saved many lives after gastrointestinal surgery. Other contemporaries believed that drainage of peritoneal

cavity is useless^{6,7}. Drains are frequently used after laparoscopic cholecystectomy to prevent abdominal collections⁸. Majority of the patients with laparoscopic cholecystectomy are dealt with as day care cases now a day, hence the insertion of drain in every case would merely delay the patient's discharge⁹. Drains may be very uncomfortable for some of the patients undergoing cholecystectomy and may incur increased morbidity and in some cases may increase infective complications.

It was demonstrated that wound infection was significantly higher in patients who underwent laparoscopic cholecystectomy with drain. (OR 5.86, 95% CI 1.05 to 32.70)⁹. George Tzovaras et al described significantly increased postoperative pain in patients who had a drain placed; median visual analog scale (VAS) score was 5 (range 1 to 8) versus 3 (range 1 to 8), in the non-drained group ($P < .0001$). So he concluded that use of a drain in elective laparoscopic cholecystectomy has nothing to offer; in contrast, it is associated with increased pain. He suggested that it would be reasonable to leave a drain if there is a worry about an unsolved or potential bile leak, bearing in mind that drain placement, although sometimes providing a false sense of security, does not guarantee either prevention or treatment of postoperative bile collections, bleeding, or bile peritonitis¹⁰.

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Despite evidence based data, questioning prophylactic drainage in many instances, most surgeons around the world continue to use them on routine basis.⁵ This study is aimed to demonstrate the frequency of complications (post operative pain) in laparoscopic cholecystectomy with and without drain in our local perspective to select better option for routine procedure to expedite patient recovery process and shorten hospital stay, decreasing burden on health care infra structure.

MATERIAL AND METHODS

This study was carried out in the Department of General Surgery, Multan Medical & Dental College/Ibn e Siena Hospital & Research Institute, Multan, from July 2010 to December 2013. Five hundred and seventy cases of gallstone disease were registered who fulfilled the inclusion criteria. The allocation of cases to two study groups was settled by random number table. Patients in group A underwent laparoscopic cholecystectomy with drain insertion and those in group B had cholecystectomy without drain.

RESULTS

Five hundred and seventy patients with indication of Laparoscopic cholecystectomy were included in study. Minimum age was 22 years and maximum 79 years with mean 47.60 yrs. All the subjects included in study were belonging to both genders. On clinical examination of either of the inguinal area, lump with expansile cough impulse was elicited in all 70(100%) patients. 63(90%) patients had unilateral (right or left) inguinal hernia and the rest 7(10%) had bilateral inguinal hernia. Another 7(10%) patients had history of recurrence from previous surgery of inguinal hernia. Taking the treatment options in account, 35(50%) patients in group A were operated with laparoscopic (TEP) technique. While other 35(50%) patients included in group B were treated with conventional open mesh hernioplasty (Lichtenstein Repair). After 48 hours, 49(70%) patients experienced mild or no pain. However 15(21.4%) had moderate pain and 6(8.6%) had severe pain. Laparoscopic Hernioplasty group: 28(40%) patients had only mild or no pain while only 1(1.4%) patient experienced severe pain. 6(8.6) patients had moderate pain. Open Mesh Hernioplasty group: Only 21(30%) had mild or no pain. 9(12.9%) had moderate and another 5(7.1%) had severe pain.

Similarly on 7th post operative day, 60(85.7%) patients were having either no pain or mild pain. Out of remaining 10(14.3%) patents, 6(8.6%) had moderate pain while 4(5.7%) had severe pain.

Laparoscopic Hernioplasty group: 32(45.7%) had mild or no pain while only 1(1.4%) had moderate and 2(2.9%) had severe pain. Open Mesh Hernioplasty group: 28(40%) had mild or no pain. 5(7.1%) had moderate and 2(2.9%) had severe pain. Wound infection occurred in 3(4.3%) cases, out of which 2(2.9%) wounds were infected in group B (Open Mesh hernioplasty) and 1(1.4%) wound got infected in group A (Laparoscopic Hernioplasty).

Table 1: Frequency of various treatment modalities used

Group	Frequency	%age
Laparoscopic Cholecystectomy with drain	285	50
Laparoscopic Cholecystectomy without drain	285	50
Total	570	100

Table 2: Frequency of pain at 12 hours

Pain	Frequency	Percent
No Pain	83	14.56
Mild	202	35.43
Moderate	183	32.10
Severe	102	17.89
Total	570	100.0

Table 3: Comparative frequency of pain at 12 hours with and without drain

No pain	Mild	Moderate	Severe
Group A			
29(10.2%)	104(36.4%)	87(30.5%)	65(22.8%)
Group B			
54(18.9%)	98(34.4%)	96(33.7%)	37(13%)
Total			
83(14.6%)	202(35.4%)	183(32.1%)	102(17.9%)

Chi square test; 4.267

p value; Insignificant

DISCUSSION

Use of a prosthetic mesh to create tension free repair as well as the laparoscopic technique has gained popularity for repair of inguinal hernia^{5,11}. Use of mesh is common and increasing¹². With the use of mesh in open hernia surgery resulting in tension free repair, the recurrence rate as well as rehabilitation period has reduced compared to sutured repairs¹³. Mesh repair has shown to reduce recurrence by 50% no matter what technique of mesh placement is used¹⁴.

Stoppa and others have used pre-peritoneal subumbilical approach to retro-fascial space since 1969¹⁵. Advantages of this approach were the ease of separation of retro-fascial cellular space, direct access to posterior inguinal structures; clear understanding of hernial defects and clear exposure of the musculo-pectineal opening¹⁶. In laparoscopic TEP technique dissection and placement of mesh is

done in the pre-peritoneal retro-fascial as done by Stoppa in his technique by open surgery. Therefore laparoscopic TEP repair is expected to combine advantages of Stoppa's approach with that of minimally invasive surgery.

Laparoscopic TEP repair of inguinal hernia is totally extraperitoneal approach as entry into peritoneal space is avoided. While the TAPP technique is trans-peritoneal approach to inguinal hernia in which abdominal cavity is entered with the possibility of injury to intra-peritoneal contents.^{51,63} Laparoscopic hernia repair has been criticized for technical difficulties, cost and a long learning curve^{17,18}.

The study was carried out to compare early post operative outcome of laparoscopic inguinal hernioplasty with open mesh hernioplasty in terms of early post operative pain and wound infection. Seventy patients presented to out-patient department Jinnah hospital Lahore, were included in study. Patients were randomly allocated to two groups; group A for laparoscopic and group B for open mesh hernioplasty. The principal technique for group A patients was totally extra-peritoneal mesh hernioplasty (TEP) and for group B was open anterior mesh hernioplasty (Lichtenstein's repair).

Pain was measured at 48 hours after procedure and on follow up at 7th postoperative day on visual analogue scale. A difference of 37.24 versus 20.92 in mean pain score (0-100) while comparing laparoscopic trans-abdominal approach with open repair¹⁹. In this study, considerably lower pain scores were observed after 48 hours in patients operated by laparoscopic technique where only 7(10%) patients experienced moderate to severe pain, compared with open technique. In open technique 14(20%) patients had moderate to severe pain. This is comparable with the results of a study¹⁹.

This significant difference in pain scores persisted even after day 7. At 7th post operative day, 3(4.3%) patients had moderate to severe pain in laparoscopic group while in open group, 7(10%) patients had moderate to severe pain.

In a study laparoscopic compared with open repair of incisional and primary ventral hernia showing remarkably lower rate of wound infection in laparoscopic group (6 % versus 33%)²⁰. In my study, rate of wound infection was over all (4.3%) lower in both the groups.

CONCLUSION

Laparoscopic cholecystectomy without drain is better than one with drain, with less post operative pain.

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