LETTER TO THE EDITOR

An Analysis of 3-Port Laparoscopic Cholecystectomy: How often 4th Port is Required?

Sir,

Laparoscopic surgery has become the gold standard treatment of gallstones. It has the advantages of less pain, smaller incision, minimal scarring, shortened hospital stay, early return to work and decreased total cost. However, it is associated with certain complications including haemorrhage, major vessel laceration, bile duct injuries, bowel perforation, bile leakage, cardiovascular pulmonary complication, wound infection, and trocar site hernia. Standard Laparoscopic Cholecystectomy (LC) is being performed using 4 ports both in American and French position. There is a change of trend towards reducing number and size of the trocars. LC can be performed using 2 ports, 3 ports and single incision. The use of the most lateral 4th port in the American technique, utilized to retract the gallbladder fundus, was challenged. Recently published studies have shown that 3-port technique did not compromise the procedure safety.

We conducted a study to assess the feasibility and safety of 3 port technique and the frequency of 4th port insertion necessitated to complete the procedure. Out of 208 patients with gallstone disease, LC was attempted in 203 cases. After both 3 port and 4 port LC procedures were explained in details, patients were given the option of choosing the operation to be performed by 3 port laparoscopy technique with consent for 4th port, if it was deemed necessary. Open Cholecystectomy (OC) was only performed electively in five cases that did not consent for LC. Those cases were excluded from the study. Three patients undergoing LC who were converted to OC (two cases were converted due to dense adhesions and difficult anatomy at Calot's triangle and third case due to avulsion of cystic artery) were also excluded. Seven cases that had stones in CBD diagnosed preoperatively, were also excluded. In all 200 cases with uncomplicated or complicated gallstone diseases were selected for LC, 3-port technique was attempted. A 5 mm 4th port was inserted on right side of abdomen as used in standard technique, when its requirement was considered necessary. The main reasons of using 4th port were acutely inflamed gallbladder, hepatomegaly, dense adhesions and difficult anatomy at Calot's triangle, spillage of stones due to perforation of gallbladder and bleeding from the gallbladder fossa. Out of 200 patients, 158 were females and 42 were males (F:M ratio 3.7:1). The age ranged from 17 to 90 years, with a mean age of 45.59 ±14.62 years. The 4th port was required in 15 (7.5%) patients. Three-ports LC were successfully completed in the rest 185 (92.5%) patients. Complications in the laparoscopic cholecystectomies were sub-phrenic collections (0.5%), acute respiratory distress syndrome (0.5%), umbilical port hernia (1%) and umbilical port infections (2.5%). In one case of empyema gallbladder and septicemia (0.5%) death occurred despite the use of the 4th-port. The mean operating time was 37.85 ±18.15 minutes. However, operating time was prolonged to 60 ±32.07 minutes in 15 cases in which 4th port was used. Reason was difficult anatomy or condition of gallbladder. Mean hospital stay was 1.06 ±1.02 days with maximum stay of 14 days and minimum being discharged the same day.

Many surgeons questioned the necessity of the 4th-port, conventionally used for gallbladder retraction in the American technique. Several studies have reported that 3-port laparoscopic cholecystectomy is technically feasible and safe. There is one meta-analysis of randomized clinical trials and one prospective randomized study that agree in affirming no significant differences between the 3-port group and 4-port group in terms of operating time, postoperative hospital stay and success rate; the second study found some advantages in the 3-port technique such as less cost, less pain and fewer scars. The 3-port technique was found to be safe when performed on acute and chronic cholecystitis. In another study of 495 patients who underwent laparoscopic cholecystectomy, 3-port LC technique was performed on 283 (57.2%) patients, while the traditional 4-port LC technique was performed on 212 (42.8%) patients. None of the 3-port LC group needed a 4th port to complete the procedure. Furthermore, 3-port LC avoid the need of another assistant for traction at the 4th port. Three-port laparoscopic cholecystectomy results in less port-site pain and similar clinical outcomes with fewer surgical scars and without any increased risk of bile duct injury compared with 4 ports laparoscopic cholecystectomy. However, this technique has its own limitations and should only be practised by surgeons experienced in laparoscopic techniques.

REFERENCES
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