TWO-PORT LAPAROSCOPIC CHOLECYSTECTOMY: AN EARLY EXPERIENCE

S H WAQAR, M A ZAHID

ABSTRACT

Laparoscopic cholecystectomy is the procedure of choice in all the gall bladder diseases and there is increase in the expertise of the surgeons with newer equipment. Usually the laparoscopic cholecystectomy is performed by using three or four ports. Two ports laparoscopic cholecystectomy is a rarely performed procedure as it demands greater expertise and skills. Benefits of this technique are related to the cost this being cost effective with less scar forming as compared to the conventional approach of laparoscopic cholecystectomy. We present a series of eight cases of laparoscopic cholecystectomy performed by using only two ports. All procedures were completed successfully and no extra port or conversion to open procedure was required. Mean operation time was 50 minutes. No intra and post operative complication occurred in this series. Hospital stay was one day.

Key words Laparoscopic cholecystectomy, Gall bladder, Two ports.

INTRODUCTION:

Laparoscopic cholecystectomy is the gold standard treatment for symptomatic gall bladder disorders all over the world. This operation is conventionally performed by using four ports into the abdomen, one for the camera, two for manipulation of tissues and another for retraction.[1] Later, three-port procedure was described. Two-port laparoscopic cholecystectomy is a newer modification, and has been reported in the international literature to be safe and feasible.[2] We adopted this new two-port technique of gall bladder removal in selected group of cases. This report is based upon this experience.

METHODOLOGY:

The patient was laid supine with head end tilted 15^{o} up. The two ports used for access to peritoneal cavity included a 10 mm supra-umbilical port (for camera) and another 10 mm epigastric port (for dissection). The gall bladder was manipulated through strategically placed two traction sutures. One was placed higher up in the right hypochondrium, just below the tip of ninth costal cartilage and passed through the fundus of gall bladder. It was fixed by tying a knot. The other traction suture was placed in right flank at a lower level to hold neck of the gall bladder; this was kept free to adjust the level of traction during different steps of the procedure (Fig-1).

Correspondence:
Dr. S H Waqar
Department of General Surgery
Pakistan Institute of Medical Sciences
Islamabad

RESULTS:

The new approach was used in eight patients. Surgery was performed conveniently and successfully, with smooth and uneventful recovery in all the cases. The average operating time was 50 minutes. No procedure related complication occurred neither any conversion was required. All the patients were allowed orally after about four hours and discharged from the hospital next day.

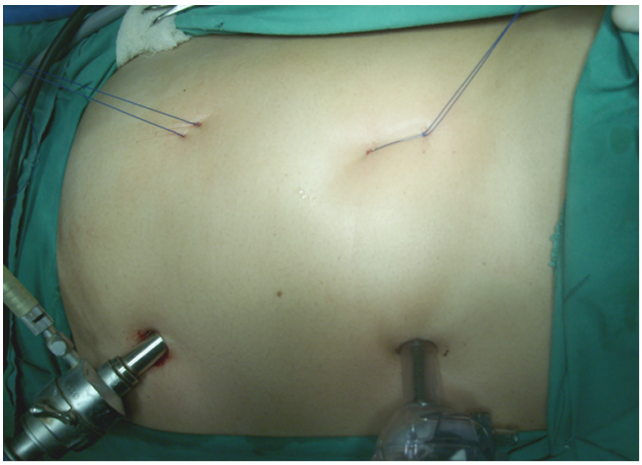

Fig 1: Two-port Laparoscopic Cholecystectomy using two traction sutures.

DISCUSSION

In the new era of minimal access surgery, the preferred outcomes under consideration are not only the safety, but also quality, which is often defined by pain and cosmetic results. Scar-less surgery is the ultimate goal for both, surgeons and the patients. Minimal invasive surgical techniques continue to evolve. As technology and instrumentation continue to improve, so are the complexity of operations that can be performed in a minimal invasive way.[3]

Two-port laparoscopic cholecystectomy has shown a higher patient's satisfaction score.[4] However, whether it offers any additional advantages remains controversial.[2] A randomized study evaluating postoperative pain in patients undergoing three versus four trocar cholecystectomy demonstrated less analgesic use in the fewer trocar group.[5] A report on two-port laparoscopic cholecystectomy has already shown that all patients would choose this technique over four-port approach, as the postoperative pain is significantly reduced and the procedure is cosmetically more acceptable to the patients. [6]

Two-port laparoscopic cholecystectomy has been reported to be safe and feasible, but it is technically difficult even in expert hands because of limited operative field. Poon CM et al have modified the operating telescope to achieve a wider field of view.[4] Using modified operating telescope they have reported initial results of two-port laparoscopic cholecystectomy. We have performed our cases by using conventional zero- degree telescopes.

Tagaya N et al reported a new technique of laparoscopic cholecystectomy by two-port approach using abdominal wall lifting method.[7] They noticed that retraction of the gall bladder is possible by the insertion of forceps through the umbilical port along the telescope which might eliminate the necessity of creating the third port. Kagaya developed a "Twin-port" system that allows a 5-mm camera and a forceps to be inserted through a single port. A 5-mm trocar is inserted approximately one cm below the xiphoid process, and the laparoscopic cholecystectomy is performed via two ports.[8] Lee KW reported a two-port needle-scopic cholecystectomy using 2-mm or 3-mm endograspers.[9] Mishra has developed a unique technique with extra corporeal knot to perform two port laparoscopic cholecystectomy. In our cases we employed two traction sutures, passed through the fundus and the neck of the gall bladder respectively, with good results.

The laparoscopic surgeons are developing and using a number of different techniques all over the world. Ng WT described laparoscopic cholecystectomy using a single, supra-umbilical incision; however, the single wound is, in fact, merely the result of combining the camera and adjacent 10-mm working ports.[10] A new operating device has been developed to further minimize the invasiveness. This is a single trocar with three channels that is placed using an open Hassan technique. It is designed to be used with flexible laparoscope. Preliminary results with this system have been reported with successful performance of laparoscopic renal surgery.[11] Laparoscopic extended stapled appendicectomy,[12] laparoscopic sigmoidectomy[13] and laparoscopic cholecystectomy[14-17] are being performed successfully by single port access.

The attempts at performing the procedures with fewer numbers of ports are especially feasible in our setup. One port usually costs around Rs. 7000 or more. Therefore using fewer ports will reduce the overall cost of the procedure. The cost is the main limiting factor to opt for laparoscopic procedures in a vast majority of our patients.

CONCLUSIONS:

Two-port cholecystectomy is technically feasible and may further improve the surgical outcomes in terms of postoperative pain and better cosmetic value. This technique can be used only for simple and uncomplicated cases of cholelithiasis. It has definite advantage over conventional four port cholecystectomy in terms of cost and patient satisfaction.

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