Dear Editor,

we read with interest the recently published paper by Matayia et al. (1) comparing the cost of conventional laparoscopic cholecystectomy with that of single incision laparoscopic cholecystectomy (SILC) performed with the use of a SILS port and the ‘no-port’ SILC. Although SILC is a definitive advance, use of a specialized port or instruments (which are often disposable) adds significantly to the cost and makes the surgeons reluctant to learn it and use it in their patients. In an increasingly cost-conscious health environment the authors are to be commended for carrying out this study to address this important issue. Having used the “puppeteer technique” of SILC with two sutures in over 550 cases (data under review for publication) we would like to share the modifications and solutions used to make SILC cost-effective. A video depicting our technique is available on YouTube (2).

We utilize a 2-cm transumbilical incision and after abdominal insufflation introduce one 10-mm reusable metal trocar along with a 5-mm, low profile trocar (used in thoracoscopy surgery) side-by-side through separate fascial incisions. Two 2-0 Nylon sutures (Ethilon, Johnson and Johnson, Mumbai, India) on a curved needle partly straightened to convert it into a “ski” shaped one are used. For fundal retraction a 30-cm suture with a tuft or bun of multiple knots fashioned at its free end is used. The needle and suture assembly is introduced inside the abdomen via the 10mm port, picked up with a laparoscopic needle holder and passed through the fundus of the gallbladder. The suture is pulled till the bunch of knots abuts against the wall of the gallbladder and acts as a stopper (fig. 1A). The needle then takes a bight of the peritoneum under the right dome of the diaphragm and is passed out on to the abdominal wall in the subcostal area. External traction applied to the suture retracts the fundus cephalad towards the point where the suture has passed through the peritoneum underlying the diaphragm (fig. 1B). Securing the suture near the skin with a hemostat ensures sustained cephalad traction throughout the procedure.

The suture on the Hartmann’s pouch (which we refer to as the dynamic traction suture) is

Fig. 1A, B. Bunch of knots abuts against the fundus (A) and cephalad fundal traction (B)
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crucial in allowing medial and lateral manipulation of the gallbladder. A 40-cm length of suture attached to a “ski” shaped needle is introduced below the level of the edge of the retracted liver just to the right of the falciform ligament. The needle is grasped inside the abdomen with a laparoscopic needle holder. The needle is then passed through the left side of the Hartmann’s pouch, retrieved on the right side, released and a length of suture is pulled to the right. The needle is re-grasped and a second pass is made through the Hartmann’s pouch. As the needle is retrieved again it is passed through the loop made by the previously retrieved long length of suture. The needle tip is then passed out through the abdominal wall in the right subcostal area. As the exiting suture is pulled, the knot gets locked on the Hartmann’s pouch and grips it (fig. 2A). Traction on the laterally exiting suture splies open the anterior aspect of the Calot’s triangle and traction on the medial end turns the Hartmann’s pouch medially to allow safe posterior dissection (fig. 2B). Once the “critical view of safety” is obtained the cystic artery and duct are controlled with clips or ligature. The gallbladder is then excised and retrieved in a plastic bag.

Safety of dissection of the Calot’s triangle during multi-port cholecystectomy depends on two key factors – uniform cephalad retraction of the fundus and ability to retract and alternately rotate the Hartmann’s pouch laterally and medially. We find that our method of gallbladder retraction meets both these requirements. In addition, it allows the surgeon to perform a “two-handed” dissection (by controlling the ends of the dynamic traction suture with the left hand) in a manner very similar to a multi-port cholecystectomy. Thus, no special ports or roticulating laparoscopic instruments are required to perform SILC with this technique. The puncture marks caused by the needle neither result in any pain nor leave scars. The bile spillage sometimes caused by the needle puncture is insignificant and can be cleared by a thorough lavage at the end of the procedure. We have observed no surgical site or intra-abdominal infective complications in our cases.

The technique described here is simple, reproducible and cost-effective thus making it attractive for use in patients undergoing SILC in any part of the world. We commend it for a wider use.

REFERENCES


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