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Technique of double incision laparoscopic cholecystectomy (DILCH) as an alternative to SILS

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ABSTRACT

Background. Single incisions laparoscopic surgery (SILS) applied for cholecystectomy can ensure a good cosmetic effect expecting without no visible scarring cosmetic effect after surgical procedures, but needrequires implementation of special ports, as well as articulating and banked instruments to be more comfortable for the surgeon. The aim of this paper is to present three three-ports cholecystectomy through two well hidden incisions – umbilical and suprapubic, – performed by with typical laparoscopic instruments.

Methods. Ten consecutive elective patients with typical, symptomatic cholelithiasis were qualified for DILS cholecystectomy. All acute cases were excluded from intervention. Typical CO2 pneumoperitoneum was done after umbilical skin incision. Two ports, 5 mm and 11 mm, were inserted in the maximum external edges of this incision. The second incision for 11 mm optical trocar for optic was performed in the suprapubic median line, just in the hairy zonewithin the hair line, to hidden conceal himit.

Results. DILCH were performed without any conversions to classical LCH or open cholecystectomy. Each procedure was different according to technical improvement of access and manipulation of instruments manipulations. Time of interventions ranged between from 2 hours for the first patients to 1 hour for the last according to the learning curve. No complications were observed and all patients were discharged as after conventional LCH.

Conclusions. DILCH as a three three-port laparoscopic intervention, performed with typical laparoscopic instruments, is more convenient for the surgeon than single incision LCH. Transfer of the optic from the umbilical port site to hidden the concealed suprapubic hairy region gives thereprovides more space for instruments but didn't did not spoil theed good cosmetic effect of intervention. This procedure is easy to learn and in case of technical problems we can always apply additional ports like foras in typical LCH.

The concept of NOTES ideas gave the surgeons the possibility to modify typical laparoscopic techniques in the direction to of surgery with no visible scars surgery. SILS cholecystectomy (SILS – single incision laparoscopic surgery) is one of the example, but needs also requires implementation of three special small three ports or special multi-channels ports (e.g. Covidien SILS port Covidien, Olympus LESS port,- Olympus and many new others) and new, recently introduced recently bent instruments to provide make this intervention more easyier for the surgeon. [1-6].

The aim of this paper is to present three three-ports cholecystectomy through two well hidden incisions performed by with trocars and instruments typical for

laparoscopic cholecystectomy (LCH) trocars and instruments. Two ports were introduced in the umbilicus and a third one for the camera, through an additional suprapubic additional 1.5 cm incision. This modification of SILS gives the surgeon more space in the umbilical region and makes this intervention more safer for the patient and more comfortable for the surgeon.

MATERIAL AND METHODS:

Ten consecutive patients, 8 women and 2 men with typical, symptomatic cholelithiasis, without the suspicion of common bile duct (CBD) stones, were qualified for DILCH. The age of the patients ranged from 18 to 72 years. All acute cases were excluded from the intervention. All the patients underwent typical for LCH general, endotracheal anaesthesia typical for LCH. The patient was placed in a 30° reverse Trendelenburg position and turned 20° laterally.

The surgeon stood between the patient's legs and the camera operator to his left side.

Typical trocars, classical for LCH, trocars were used: (5 mm Covidien, Norwalk, USA and 11 mm non-disposable Olympus, Hamburg, Germany). After a U-shape, 3 cm umbilical skin incision, 15 mmHg pneumoperitoneum was created 15mmHg with a Veress needle was done. The first trocar was inserted 5 mm inside the left edge of the umbilical incision was inserted. Through this trocar a 5 mm angled 30° telescope was placed. Under visual control a second 11 mm trocar for the camera was inserted in the suprapubic median line, slightly on to the right, just in within the hair liney zone, to hidden conceal ithim. To this trocar the camera from the umbilicus was transferred. For better vision it was changed for an angled 30°, 10 mm telescope. Last The third, 5 mm trocar was introduced inside the right edge of the umbilical incision, as far as possible to from the 5 mm, first inserted trocar.

Standard 5 mm endoclinch and dissector (Covidien, Norwalk, USA) were used. Straight needle suture 3-0 Monocryl (Ethicon, J&J) was inserted through the abdominal wall firstly in the midline to hang up the round ligament round of the liver. Second the same suture from the anterior axillary line site, just below of to the right costal margin was inserted and the fundus of the gallbladder was stitched, moved superolaterally and fixed to the abdominal wall just after moving out the straight needle outside of the abdomen. A third stitch was inserted through the abdomen 5 cm below the second one and the neck of the gallbladder was punctured to help in openning of Calots's triangle. The endoclinch from the right trocar grasped the gallbladder to open Calot's triangle for dissection. After dissection of the cystic duct and artery the 5 mm trocar in the left umbilicus umbilical pole was changed for an 11 mm metallic, no non-disposable trocar. The mentioned structures were then clipped by using a typical 10 mm clips applier and finally cut by with laparoscopic shears. The gallbladder was dissected by monopolar electrocautery like and the fixations of the them waswere released. Haemostasis of the gallbladder lodge had been done progressively by electrocouteryelectrocautery. Rinsing and suction of the abdominal cavity was done if necessary. Next the camera was translocated to the 11 mm umbilical trocar and the gallbladder was removed using a typical crocodile grasper by at the lower suprapubic trocar site. After that, through this orifice a 16 Fr Redon type drencatheter could be inserted and was placed into the gallbladder lodge if necessary. Pneumoperitoneum desufflation was followed by closure of the fascia in the umbilicus and in the suprapubic port site by 1-0 PDS (Ethicon, J&J). The skin was closed with non-absorbable separated stitches in the umbilicus and purse-string in the suprapubic incision.

RESULTS

Double incision laparoscopic cholecystectomy (DILCH) was performed without any conversion to the classical LCH or open cholecystectomy in all the patients. Each procedure was different according to

technical improvement of access and manipulation of instruments manipulations. Time of interventions ranged from 120 minutes for the first patient to 60 minutes for the last one. It was unnecessary to put apply a drain in most of cases (6/10). No complications were observed and all patients were discharged in on the second day after the intervention, like after conventional LCH. All the patients were seen within one week after the intervention. The skin stitches were removed and replaced by with steristrips. There were no visible scars on the abdomen after one month of observation. The patients' status were was found to be similar like as after conventional LCH. The pathologist described cholelithiasis with cholecystitis in 6 for of 10 patients.

CONCLUSIONS

DILCH as a three three-port laparoscopic cholecystectomy performed with typical laparoscopic instruments is more convenient for the surgeon than SILS cholecystectomy. Transfer of the camera from the umbilical port site to the hidden concealed suprapubic hairy region gives thereprovides much more space for instruments in this region than described by authors for all single access techniques [7-9]. The surgeon's work was more easyier butwhile exposition exposure of the Calot's triangle and gallbladder during DILCH was n't not as ideal as during classical LCH but much better than in SILS patients. However, in all the patients additional fixation of the gallbladder fundus by straight needle suture was applied, which considerably ameliorated a lot the exposition exposure of Calot's triangle. There were no visible scars after this operation. The additional trocar placed in the lower, suprapubic region did n'ot spoil the good cosmetic effect of the intervention. This procedure is easy to learn and in case of technical problems we can always apply additional ports like as for typical LCH. Further development of this method is will be possible when it becomes commonly possible to apply the bent laparoscopic instruments will be commonly possible to apply.. Then the surgeon will obtain much more splace then now, and DILCH will appear become the a intervention much more comfortable nvenient intervention then than now at present, and Calot's triangle preparation will be safer to avoid CBD lesions.

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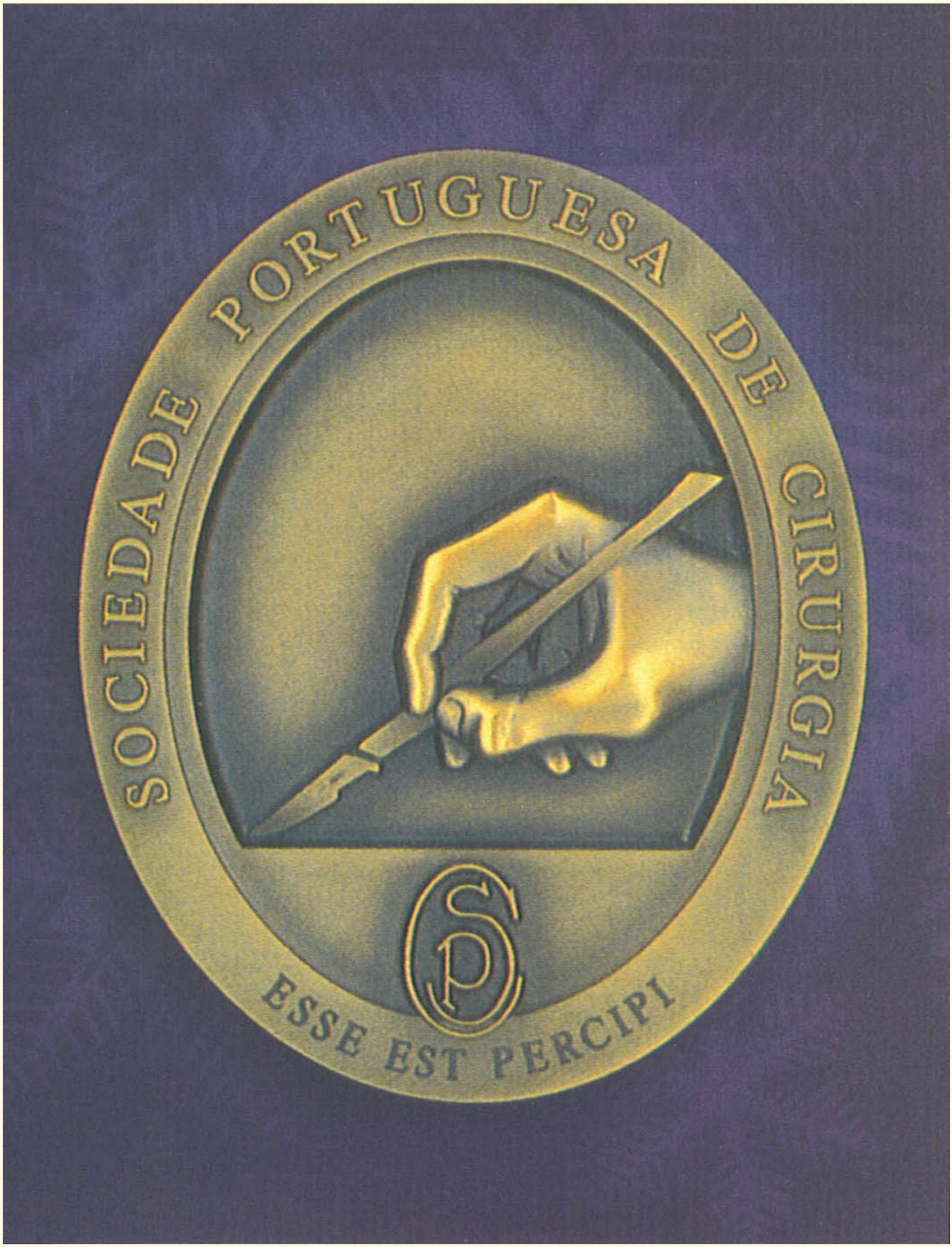
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