Acute gangrenous calculous cholecystitis was diagnosed in 5 patients, and acute gangrenous calculous cholecystitis with perivesical abscess was diagnosed in one patient. All these patients underwent laparoscopic cholecystectomy. The average time for the operation after admission to the hospital was 6 hours. All these patients spent the early postoperative period in the intensive care unit.

POSSUM-PS scores were more than 25 in all patients. The PCT level ≥4ng/mL was also determined in all patients.

In the postoperative period, one patient developed one complication, postoperative bile peritonitis, which required laparotomy. All patients subsequently recovered. The 30-day mortality rate was 0.

Conclusion

In the framework of the international multicenter study CHOLE-POSSUM PRO, we studied the applicability of the POSSUM scale in combination with determination of the level of procalcitonin in the blood. This scoring assessment of the severity of acute calculous cholecystitis can be used to determine the prognosis of this disease.

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УДК 616.381-089.844

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TRANS ABDOMINAL PREPERITONEAL PATCHY PLASTY VERSUS OPEN LICHTENSTEIN HERNIA REPAIR

Introduction

Inguinal hernia repairs are one of the most common general surgical operations and globally; about more than 20 million inguinal hernia repairs are conducted every year1. The condition is multifactorial and affects both genders at all ages [2,3]. Indirect hernia corresponds to more than 70% of cases among adults. Hernia recurrence is a significant long-term complication of hernia repair, with reported recurrence rates ranging from 1.1% to 33.0% after primary repair and 11.7–30.0% after recurrent hernia repair. Hernia repair can be accomplished through traditional open techniques or else through the minimally invasive laparoscopic approach. Over the last two decades, the laparoscopic approach has gained greater acceptance and there are two primary techniques: Totally extraperitoneal hernioplasty (TEP) and transabdominal peritoneal patch plasty (TAPP). TAPP was introduced in our department in 2017, and this study was undertaken

to compare the outcome of inguinal hernia repair using TAPP and open Lichtenstein technique of mesh repair in terms of operating time, post-operative hospital stays, complications (early and late), and cosmesis.

Goal

A study to compare the outcomes of laparoscopic transabdominal preperitoneal patch plasty (TAPP) and open Lichtenstein repair in the management of inguinal hernia was carried out at the Department of Surgery, SKIMS Medical College, Bemina, Srinagar, Kashmir, India and Emergency hospital in Gomel city, Belarus.

Material and methods of research

Sixtyeight patients with inguinal hernia participated in the study in both countries. Transabdominal peritoneal patch plasty versus open Lichtenstein hernia repair TAPP was introduced as a new tool for the management of inguinal hernia and a prospective study was initiated, total 38 patients of inguinal hernia were selected after informed consent for TAPP and Lichtenstein repair 30 patients in India and 8 patients from Belarus. The two groups were homogeneous regarding the pre-operative characteristics. The exclusion criteria included the patients with inguinal hernia demanding emergent surgery repair and the recurrent hernia. Open Lichtenstein repair was conducted under spinal anesthesia with a 5–7 cm incision and polypropylene mesh fixation with 2.0 polyglactin 910 (Vicryl) separate sutures and with no supplemental local anesthesia. TAPP was conducted under general anesthesia after gaining peritoneal access with three trocars. The same kind of mesh was positioned and fixed in the preperitoneal space. All patients received equal analgesia at induction of anesthesia and during the immediate post-operative period. The cases were studied since admission till discharge and then followed in the outpatient department for 5 years . The studied parameters included data, details of the hernia (unilateral or bilateral), operating time, post-operative hospital stay, immediate and late post-operative complications, and recurrence. Post-operative pain was recorded with Visual Analog Scale of 1–10 and the surgical site scars were measured in centimeters.

The results of the research and their discussion

There were 38 male patients in study group (TAPP, Lichtenstein)of India and Belarus varying in age from 30–60 years with unilateral (on either side) and bilateral hernia .All the patients were residents of Kashmir Valley and emergency hospital residents in Gomel city .Mean operation time between the two approaches had a significant difference for unilateral hernia repair the operation time by TAPP was 55.2 min in India ,172 min in Belarus and by Lichtenstein method was 40.8 min and 83.3min in Belarus; similarly, for bilateral hernia the operation times were 58.4 min in India ,170 min in Belarus and 75.7min..Post-operative pain experienced by the patients in the two groups, as assessed by Visual Analog Scale of 1–10, on the day of the operation and on 1stand 7thpost-operative day had a significant difference with less pain felt after TAPP for unilateral as well as bilateral hernia .The patients after TAPP for unilateral and bilateral hernia had a post-operative hospital stay of 1–3 days,1–2 days in India and 8-13 days in Belarus. The is was significantly lower than the respective stay of 1–4, 2–5 days and 8–10 days, 9 days in Belarus after the open Lichtenstein approach, as shown in table 1,2. About 23.3% of patients treated through the Lichtenstein approach had perioperative complications, whereas only 6.7% had complications in the TAPP group. the TAPP repair was associated with skin scars about 0.5 cm–20cm at the port sites and no scar in the inguinal region, while the Lichtenstein repair was associated with single large scar of around 6–8 cm.

Table 1 – comparative study of lischtenstein and TAAP repair in India

	Lichtenstein Repair		TAAP repair	
Characteristics				
Of comparison	Unilateral hernia	Bilateral hernia	Unilateral hernia	Bilateral hernia
Number of hernias according to location	26	4	25	5
Operation time	40.8	58.4	55.2	75.7
Post operative pain assessed by Visual Analogue scale from day 1–7	4.1–1.5	44.3–18.3	3.12–0.79	36.4–10.8
Post operative Hospital stay	1–4 days	2–5days	1–3days	1–2days

Table 2 – comparative study of lischtenstein and TAAP repair in Belarus

	Lichtenstein Repair		TAAP repair	
Characteristics Of comparison	Unilateral herina	Bilateral hernia	Unilateral herina	Bilateral hernia
Number of herina according to location	3	1	4	–
Operation time	83.3	170	172	–
Post operative pain assessed by Visual Analogue scale from day 1–7	3.7–7.4	33.4–20	4.7–0.8	–
		9 days		–
Post operative Hospital stay	7–9 days		6–8 days	

Conclusion

The mean operation time for unilateral as well as bilateral hernia repair was significantly higher in TAPP than the Lichtenstein approach as TAPP requires time in creation of approach through pneumoperitoneum and lacks the usual dexterity of open approach in both countries. Post-operative pain as well as post-operative hospital stay were, however, significantly lesser with TAPP in India but higher in Belarus for unilateral and lesser with bilateral hernia. Overall, the incidence of complications was significantly lower with TAPP, with 93.3% having no complications in TAPP in comparison to Lichtenstein where only 76.7% had no complications. The experience of hernia repair with TAPP was satisfactory in our surgical department of both countries and since a generally accepted single technique suitable for all inguinal hernias does not exist as yet, hence, the surgeons would use over Lichtenstein or else the TAPP, after taking into consideration the patient and the hernia-related factors. Although learning curve is steep with TAPP, it is expected that with passage of time, as experience increases, the results would improve further. The specific complication seen with TAPP was injury to inferior epigastric artery in one patient during peritoneal reflection and that might be attributed to lesser experience of the surgeons as laparoscopic surgery is known to have a steep learning curve and complications are often reported in the early phase of the learning curve. The possibility of this complication arises when while raising peritoneal lap, the peritoneum is cut beyond the medial umbilical ligament. Proper knowledge of anatomy, skills, and experience result in prevention of such complications. Wong and Merkur have suggested various methods for prevention and management of intraoperative inferior epigastric artery bleeding that includes bipolar

coagulation, tamponade, suturing, conversion to open surgery, embolization, and ultrasound-guided thrombin injection or compression. Bleeding was controlled in our series with suction followed by monopolar cautery on Maryland forceps.

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