

TACKING OF LAX TRANSVERSALIS FASCIA AND SEROMA FORMATION IN LAPROSCOPIC DIRECT INGUINAL HERNIA REPAIR IN A TERTIARY CARE CENTRE SOUTH KERALA: A RETROSPECTIVE STUDY

General Surgery

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ABSTRACT

Background: Total extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) techniques are the two most widely adopted laparoscopic procedures for inguinal hernia repair with favorable clinical outcomes, such as shorter hospital stay, minimal postoperative pain, and decreased surgical site infection. However, seroma formation is the most frequent complication after laparoscopic repair; the frequency and volume of seroma increased significantly in large and scrotal inguinal hernias. In the present study, we present a new method to address this problem. We commonly tack the lax transversalis fascia, with the aim to decrease dead space in laparoscopic inguinoscrotal hernia repair. We believe this technique is a reasonable, safe, reproducible, and cost-effective method to address the problem of seroma formation in Direct inguinal hernia repair. **Aim:** To assess the proportion of seroma developing among patients undergoing tacking of transversalis fascia. **Materials and methods:** A cross-sectional study of 63 patients who underwent laparoscopic direct hernia repair with tacking of lax transversalis fascia. A single experienced surgeon was done. Post-operatively, patients were evaluated on day 10, 30, 90, and data was collected. **Results:** $n = 24$, $n = 4$, $n = 35$, $Z = 0.95$, $CI: 1.96$, $P = 2.7\%$, $q = 93.7$, $d = 5$. Out of 63 samples, only two reports of seroma: one in the 30th day and other in the 90th day, both of them resolved within one week. **Conclusion:** The proposed technique found to be very effective, simple and reproducible technique in preventing seroma formation in laparoscopic direct inguinal hernia repair.

KEYWORDS

Lap inguinal hernia repair, TAPP, TEP, seroma, tacking lax transversalis fascia

INTRODUCTION

Laparoscopic inguinal hernia repair has the advantage of lower postoperative pain and earlier return to work compared with open repair [1, 2]. The complication rates for laparoscopic inguinal hernia were not higher than those reported for conventional repairs, but new and sometimes unique complications could be seen. A frequent postoperative sign after laparoscopic inguinal hernia repair is the formation of seroma, and the incidence of seroma ranges from 0.5 to 12.2%, depending on the different detection methods and definitions [3]. Especially, the incidence is higher in patients with a direct defect. And several different methods have been reported to address this problem. Procedure includes a supraumbilical incision is made for placement of the Hasson trocar. The patient is placed in a gentle Trendelenburg position.

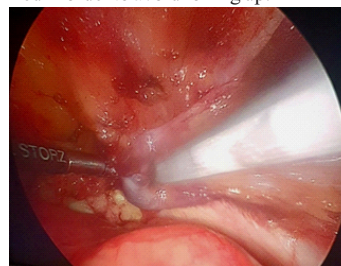
A 10-mm 30-degree laparoscope is passed. Two 5-mm trocars are placed under direct laparoscopic vision in the right and left mid abdomen at the level of the umbilicus. A diagnostic laparoscopy is performed and the hernia spaces inspected for additional hernias. Utilizing the two lateral trocars, a peritoneal flap is created using laparoscopic scissors and electrocautery. The incision is begun laterally to the medial umbilical ligament, which should not be divided, as this may cause bleeding from a vestigial umbilical artery. An incision is made in the peritoneum 2 to 3 cm above the hernia sac and carried laterally to the anterior iliac spine. The preperitoneal space is entered and blunt dissection is carried out with a laparoscopic Kittner dissector in the avascular plane between the peritoneum and the transversalis fascia. For a direct hernia, the dissection is begun laterally to expose the cord structures and epigastric vessels. As the flap is dissected, the critical anatomic landmarks from medial to lateral include Cooper's ligament, the inferior epigastric vessels, the vas deferens, and the lateral zone or fossa. The sites of an indirect and direct hernia are shown. Care should be taken to avoid dissection in the area labeled the Triangle of Pain which contains sensory nerves, injury to which may cause chronic pain in the inguinal region, testicle, or thigh. Likewise care is exercised to avoid dissection in the Triangle of Doom, the area which contains the major vascular structures. A corona mortis, a branch of the inferior epigastric may be seen on the lateral edge of Cooper's ligament in 30% of patients. This must be avoided when dissecting Cooper's ligament or tacking the mesh in order to prevent troublesome bleeding. The indirect sac is carefully teased and dissected away from the cord structures as it is brought back into the preperitoneal space. A small indirect sac may be completely reduced,

but a larger sac that extends into the scrotum may need to be divided. Downward traction on the cord structures facilitates dissection of fatty tissue in the spermatic cord (cord lipoma). The iliopubic tract is identified. The peritoneal flap is developed inferiorly. Care is taken to avoid injury to the genital branch of the genitofemoral nerve and the lateral femoral cutaneous nerve. After an inferior flap is created, the following structures are identified: the inferior epigastric vessels, the symphysis pubis, and the rectus abdominis.

Dissection is then carried medially to the contralateral pubic tubercle to allow sufficient overlap for the mesh placement to cover all of the potential hernia spaces. This demonstrates the final peritoneal flap and space.

The mesh is introduced through the 10-mm trocar. For a unilateral repair, the mesh is placed over the peritoneal opening so that it covers all of the hernia spaces (direct, indirect, and femoral). A wide overlap is necessary and extends from the contralateral pubic tubercle medially to the ipsilateral anterior iliac spine. The mesh is unrolled and positioned with generous overlap in all directions. A slit may be made for the cord structures.

Tacking devices are applied medially to the superior edge and inferior one edge. This is facilitated by direct counter-pressure by the surgeon's nondominant hand. The lateral edge aspect of the mesh is usually generally not tacked into place because of potential nerve injury (lateral femoral cutaneous and the femoral branch of the genitofemoral nerve). The mesh is secured medially to the tissues immediately adjacent to the contralateral and the ipsilateral pubic tubercle and Cooper's ligament. Any redundancy in the inferior edge of the mesh should be trimmed in order to avoid rolling up.



The next step is to close the redundant peritoneum over the mesh. The

mesh needs to be completely covered. The lax transversalis fascia is anchored to iliopubic tract. Once the mesh is in place, the patient is taken out of the reverse Trendelenburg position. Desufflation to 10 mmHg is accomplished. The peritoneal flap is then tacked to the anterior abdominal wall or sutured closed.

OBJECTIVE

Objectives: To assess the proportion of seroma developing among patient undergoing tacking of transversalis fascia in laproscopic direct hernia repair

Study Setting: Department of general surgery, Pushpagiri Institute Of Medical Science, Thiruvalla.

Study Population: Patients undergoing laparoscopic direct inguinal hernia repair with tacking of lax transversalis fascia at PMCH.

Study Period: February 2016 to August 2018.

Inclusion Criteria: 1. All cases of direct inguinal hernia planned for laproscopic repair

Exclusion Criteria: 1. Patient not fit for laproscopic procedure

METHODOLOGY

Study Design A cross sectional study of patients admitted from February 2016 to August 2018 for undergoing laparoscopic direct hernia repair was used.

Work Up

Proforma

1. Name :
2. Age in years :
3. Sex: Male/Female :
4. MRD Number :
5. Type of hernia :
6. Day of surgery :
7. Post op day 10 : Seroma - Present Absent
8. Post op day 30 : Seroma - Present Absent
9. Post op day 90 : seroma - Present Absent

SEROMA90					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	absent	62	98.4	98.4	98.4
	present	1	1.6	1.6	100.0
	Total	63	100.0	100.0	

Seroma30

SEROMA30					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	absent	62	98.4	98.4	98.4
	present	1	1.6	1.6	100.0
	Total	63	100.0	100.0	

RESULTS

CONCLUSION

Tacking of transversalis fascia iliopubic tract shows one of the most effective method for prevention of seroma which shows preventive rate of 98.6. The proposed technique found to be very effective, simple and reproducible technique.

SEROMA10					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	absent	63	100.0	100.0	100.0

SAMPLE	10 th DAY	30 th DAY	90 th DAY
63	0	1	1

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