SEROMA PREVENTION TECHNIQUE FOLLOWING ENDOSCOPIC DIRECT INGUINAL HERNIA REPAIR

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ABSTRACT: INTRODUCTION: Seroma formation in immediate postoperative period is known complication after endoscopic direct inguinal hernia repair. **AIM:** To study effect of catgut endoloop applied at neck of pseudo sac in preventing occurrence of seroma in laparoscopic direct inguinal hernia repair. **MATERIALS & METHOD:** 150 patients who underwent endoscopic direct hernia repair were included in this study. They were followed for 1 month for development of seroma. In all the patients' pseudo sac dead space was obliterated by using catgut endoloop.

RESULT: In all 150 patients it was possible to prevent clinically visible seroma. **CONCLUSION:** The primary closure of direct inguinal hernia defects with a pre-lid suture loop during endoscopic repair is safe, efficient, and very reliable for the prevention of post-operative seroma formation, without increasing the risk of developing chronic groin pain or hernia recurrence. This technique should be the preferred method over stapling of the transversalis fascia or the insertion of a closed suction drainage device in such a situation.

KEYWORD: Direct inguinal hernia, seroma, catgut endoloop, pseudo sac

INTRODUCTION: Post-operative seroma formation after endoscopic management of direct inguinal hernia either by total extra-peritoneal (TEP) or transabdominal pre-peritoneal (TAPP) is a known complication. Because it mimics a postoperative recurrence of hernia, seroma has been a concern to patients. It is suggested that fluid remains trapped between the prosthetic mesh and the transversalis fascia (TF) causing, on a few occasions, a tension seroma that may require repeated follow-up visits and needle aspiration, with a potential risk of iatrogenic infection. Incidence reported in the literature is around 4-5 %. Although techniques such as tacking the pseudo sac to Cooper Ligament or closed suction drain are described, few seem to practice any, probably because the majority of them resolve spontaneously or with repeated aspirations.

Therefore, it was proposed to adopt simple measure for seroma prevention by obliterating the pseudo sac with Catgut endoloop and reduce risk of iatrogenic injury and chronic post-operative pain at its minimum.

MATERIALS & METHODS: The study was prospective type conducted from Jan 2011 to Dec 2012. 150 patients, who underwent laparoscopic direct inguinal hernia repair, were included. Patients were reviewed in the clinic 2 and 6 weeks after the operation. A single surgeon performed all operations. Each of the M2 or M3 direct defects, according to the European Hernia Society (EHS), was included in this study, while small direct hernias were excluded.

After reduction of direct hernia, pseudo sac becomes evident. (FIGURE 1) All meshes were unfolded and under vision cavity were deflated without fixing mesh.

For Moderate size pseudo sac (M2), through one 5mm port No. 1 Catgut Endoloop is passed, through second 5mm port grasper is passed, which passing through endoloop catches fundus of pseudo sac (FIGURE 2 & 3), inverting it. Endoloop is tightened at the neck of the pseudo sac. (FIGURE 4) Assistant's index finger invaginating scrotum passing through dilated external ring and inverting pseudo sac can help to find proper fundus.

For Large pseudo sac (M3), catgut endoloop is passed through one 5mm port, knot pusher is taken out of port, still threaded on catgut and a grasper is passed alongside catgut. Second grasper is introduced through another 5mm port, passing through endoloop. With two graspers it is possible to identify the exact fundus of the pseudo sac. (Figure 5) Grasper alongside catgut is removed and knot pusher pushes the knot exactly on the neck of pseudo sac.

Alternatively if one endoloop is unable to obliterate the pseudo sac completely, second endoloop can be applied.

Age, sex, side of the hernia, type of mesh, and other associated pathologies were also recorded. Patients were initially reviewed in the clinic by the operating surgeon 2 weeks after the operation. Another follow-up appointment was scheduled 4 weeks later. All patients were advised to return to the clinic in case of delayed complication or any unexpected problems, such as chronic groin or testicular pain.

RESULT: One hundred and fifty hernia repairs were prospectively recorded during this period. All procedures were carried out endoscopically. Ninety male patients with 150 direct inguinal hernias were selected in a sequential manner with a median age of 50 year. The direct defect was left-sided in 36, right-sided in 84 and bilateral in 15 cases. In total, Endo loops of Catgut were used (52 M3 & 98 M2). Only two patients (M3 Group) (0.67%) complained of a residual seroma formation, which was still clinically present at 3 months post-operatively; but was not symptomatic. There were only two minor post-operative complications, which occurred in the same patient and were not related to the Endoloop technique. Finally, no patient complained of chronic groin pain and there was no hernia recurrence after a median follow-up of 12 months.

DISCUSSION: Seroma is a frequent complication of endoscopic mesh repair of direct inguinal hernia.¹⁻³ May cause discomfort and anxiety⁷. Its volume is proportional to the size of the preperitoneal dead space created after the reduction of the hernia. Attempts to reduce its incidence have included tacking the TF to the pubic ramus³ or closed suction drainage of the preperitoneal space³⁻⁶. Both of these techniques are not without problems. There has been no consensus on the management of this condition

If no measures are taken for prevention of seroma after TEP or TAPP repair for direct inguinal hernia, incidence reported is 4-5%.¹

The potential advantages of seroma prevention

1. In spite of adequate reassurance patient is not fully convinced when swelling develops exactly at the site of hernia. This takes away the innocent guileless joy of an eventless surgery.
2. Obliteration of pseudo sac will avoid mesh migration, leading to recurrence.
3. Obliteration of dead space will bring mesh in close contact with abdominal wall.
4. Surgeon is in dilemma as to whether it is recurrence or seroma. If patient is seen by a surgeon who is not aware of this complication, repeat surgery for recurrence can take place.
5. Aspiration of seroma can introduce infection.

6. It is quite a nuisance for a faraway patient to come for seroma aspiration.

V. M. Reddy et al tacked transversalis fascia to pubic tubercle.³Ismail M et al used closed suction drain to prevent seroma formation.⁶C. R. Berney used Ligature of PDS II endoloop for plication of defect.⁷

CONCLUSION: The primary closure of direct inguinal hernia defects with a pre-tied suture loop during endoscopic repair is safe, efficient, and very reliable for the prevention of post-operative seroma formation, without increasing the risk of developing chronic groin pain or hernia recurrence. This technique should be the preferred method over stapling of the TF or the insertion of a closed suction drainage device in such a situation as it is not time consuming, costly or complicated and hence it is urged that it should be routinely practiced.

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Fig - 1 Pseudosac

Fig---2-Fundus-of-sac

Fig---3-Catgut-endoloop-at-base-of-peudosac

Fig---4-Endoloop-being-tightened-at-base-of-pseudosac

Fig---5-Two-grasper-used-to-identify-apex-of-large-pseudosac

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