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CHRONIC ENCAPSULATED HEMATOMA/SEROMA FOLLOWING BILATERAL ROBOTIC TAPP INGUINAL HERNIA REPAIR: INTRAOPERATIVE DECISION-MAKING AND PREVENTIVE CONSIDERATIONS

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ABSTRACT

Chronic encapsulated hematoma or seroma is an uncommon complication following robotic transabdominal preperitoneal (TAPP) inguinal hernia repair. We report a patient who developed a large, persistent, thick-walled groin collection after bilateral robotic TAPP repair for long-standing complete inguinal hernias. While the contralateral seroma resolved spontaneously, the ipsilateral collection progressively enlarged over six months and required surgical intervention. Intraoperatively, dense posterior adherence of the capsule prompted restraint and subtotal subcapsular excision rather than forced complete removal. Only retrospectively was it realized that the preserved posterior wall represented the prosthetic mesh itself. The patient recovered uneventfully with complete resolution and no recurrence. This case highlights the importance of intraoperative judgment and restraint when managing organized postoperative collections after TAPP repair, as aggressive excision risks mesh injury and hernia recurrence. Preventive considerations for wide-mouthed inguinal hernias are discussed.

KEYWORDS

Robotic Inguinal Hernia Repair; TAPP; Seroma; Hematoma; Pseudocyst; Mesh Complication; Case Report

INTRODUCTION

Robotic and laparoscopic transabdominal preperitoneal (TAPP) repair has become an established approach for inguinal hernia repair, offering reduced postoperative pain and faster recovery. Seroma formation remains a common postoperative finding, with reported incidence ranging between approximately 3% and 8%, particularly in patients with large, complete, or scrotal hernias [1–3]. In the majority of cases, these collections resolve spontaneously within weeks to months.

Persistent encapsulated seromas or organizing hematomas are rare and pose diagnostic as well as therapeutic challenges. Such collections may mimic recurrence, cause patient anxiety, and are often resistant to aspiration or drainage. Literature describing optimal management of chronic encapsulated collections after TAPP repair is limited. We present a case that emphasizes intraoperative decision-making when encountering a chronic organized collection adherent to prosthetic mesh and discuss preventive considerations relevant to large inguinal hernia defects.

Case Presentation

A middle-aged male with long-standing bilateral complete inguinal hernias underwent elective bilateral robotic TAPP inguinal hernia repair. Intraoperatively, both hernia defects were wide, involving most of the Hesselbach's triangle, with long indirect sacs extending into the scrotum. Large polypropylene meshes were placed bilaterally, and the distal sacs were left in situ to avoid extensive cord dissection.

Postoperatively, the patient developed bilateral groin seromas. The right-sided collection resolved spontaneously within three months. The left-sided swelling, however, persisted and progressively enlarged over a six-month period to approximately 15 × 15 cm. The patient had resumed aspirin therapy one week after surgery, which was considered a possible contributor to hemorrhage within the seroma cavity. Ultrasonography demonstrated a thick-walled, septated, honeycombed collection suggestive of an organized hematoma or chronic seroma.

Given the persistence and size of the lesion, surgical exploration was undertaken. Intraoperatively, a thick capsule measuring approximately 1 cm in thickness was encountered as demonstrated in figure 1. Two strategies were considered: limited evacuation with curettage and prolonged drainage, or excision of the capsule. Because of the organized nature of the cavity wall, simple curettage was deemed unlikely to result in collapse and would have necessitated prolonged drainage.

Figure 1- Initial Intraoperative View Demonstrating a Well-encapsulated Sac.

Circumferential dissection of the capsule was therefore initiated, remaining close to the capsule to protect cord structures. Posteriorly, the capsule was found to be densely adherent to the underlying bed. Further dissection in this plane appeared hazardous, and a decision was made to perform a subtotal subcapsular excision, deliberately leaving approximately 1–2 cm of the posterior wall intact. Upon opening the cavity, altered brown serosanguinous fluid with multiple septations was encountered, consistent with an organizing hematoma as demonstrated in figure 2.

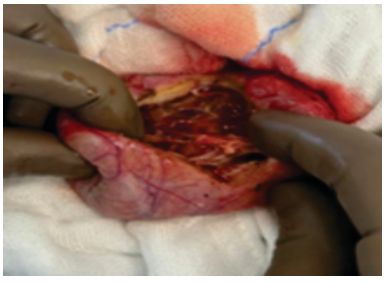

Figure 2 – Opened Sac Showing Internal Septations and Markedly Thickened Wall.

Only after completion of the procedure did it become evident that the preserved posterior wall corresponded to the surface of the prosthetic mesh. By not persisting with forced complete excision, mesh integrity was preserved (Figure 3).

Figure 3 - Surgical Bed Following Near-total Excision of the Encapsulated Sac

The postoperative course was uneventful, with complete resolution of the swelling and no evidence of hernia recurrence on follow-up (Figure 4).

Figure 4 – Post Operative Recovery

Written informed consent was obtained from the patient for publication of this case and the associated anonymized clinical images.

DISCUSSION

Seroma formation following TAPP inguinal hernia repair is common, particularly in patients with large or scrotal hernias, wide hernia defects, long-standing sacs, obesity, or early resumption of anticoagulant therapy [1,4,5]. While most seromas resolve spontaneously, chronic encapsulated collections are rare but clinically important, as they may mimic recurrence and cause persistent discomfort.

Management of such collections is not standardized. Aspiration or catheter drainage may be effective in simple collections but frequently fails in organized or septated cavities because the fibrous capsule continues to secrete fluid [6,7]. Complete excision of the capsule can be curative; however, when the posterior wall is densely adherent to prosthetic mesh, excision risks mesh injury, infection, or destabilization of the repair.

In the present case, intraoperative restraint proved critical. Although excision was initially pursued, dense posterior adherence prompted acceptance of subtotal subcapsular excision rather than forced complete removal. The retrospective realization that the preserved posterior wall was mesh underscores an important surgical principle: in chronic encapsulated collections following TAPP repair, the posterior boundary of the cavity is likely to be the prosthetic mesh itself. Aggressive pursuit of complete excision in this plane may result in inadvertent mesh damage and potential hernia recurrence.

Preventive considerations also merit attention. In wide-mouthed, long-sac inguinal hernias, the residual distal sac represents a potential space for postoperative collections. Some authors have suggested sac transection or partial defect closure during TAPP repair to reduce seroma formation [5]. While such measures may not reliably prevent seroma, closure of a wide defect could act as a barrier between the mesh and any subsequent collection, potentially simplifying secondary surgical intervention if required.

Reports describing chronic expanding hematomas or groin pseudocysts after minimally invasive inguinal hernia repair are scarce [6,8,9]. Few emphasize the role of intraoperative restraint and the recognition of mesh as the posterior boundary of such cavities. This case contributes to the literature by highlighting that conservative judgment during re-exploration can prevent significant downstream complications.

DISCLAIMER

This manuscript was prepared with the assistance of ChatGPT (OpenAI, 2024) to support the author in structuring, editing, and refining the scientific narrative. All clinical content, surgical details, and final interpretations are original, based on the author's direct experience and expertise. The AI tool was used strictly as an editorial aid and did not contribute to the generation of medical data, analysis, or clinical decision-making.

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