ORIGINAL RESEARCH PAPER

General Surgery

EPIDERMAL INCLUSION CYST AS A RARE CONTENT OF INGUINAL HERNIA: A CASE REPORT

KEY WORDS: Epidermal inclusion cyst, inguinal hernia, rare hernial content, diagnostic dilemma, case report

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ABSTRACT

Background: Inguinal hernia is a common surgical condition, typically containing bowel or omentum. Unusual contents are rare and often recognized only during surgery. Epidermal inclusion cyst as a hernial sac content is exceptionally uncommon, with only isolated case reports documented in the literature. **Case Presentation:** We report a 77-year-old male with a gradually progressive, painless right inguinal swelling for six months. Clinical and ultrasonographic findings suggested a right inguinal hernia with bowel loops. During elective hernioplasty, a large cystic lesion was identified within the hernial sac, adherent to the spermatic cord. The cyst was excised en bloc along with the sac, and mesh hernioplasty was performed. Histopathological examination revealed a cyst lined by stratified squamous epithelium containing keratin flakes, consistent with an epidermal inclusion cyst. **Conclusion:** Epidermal inclusion cyst within an inguinal hernia is exceedingly rare and may mimic routine hernias clinically and radiologically. Awareness of this entity and meticulous intraoperative dissection are essential for safe excision and to avoid cord injury or cyst rupture.

INTRODUCTION

Inguinal hernia remains one of the most frequent pathologies encountered in general surgery. Usual hernial sac contents include bowel and omentum, whereas rare contents—such as appendix (Amyand's hernia), Meckel's diverticulum (Littre's hernia), urinary bladder, ovary, or neoplasms—are occasionally reported (Meher et al., 2016). Epidermal inclusion cysts are benign lesions arising from implantation or sequestration of epidermal tissue within the dermis, commonly located in the scalp, neck, and trunk (Yadav et al., 2017). Their occurrence in the inguinal region is rare, and even more exceptional as true contents of an inguinal hernia sac.

A comprehensive review of the English literature reveals only a limited number of cases have been reported. We present an additional case, highlighting the diagnostic challenge, intraoperative considerations, and the need for vigilance when encountering atypical hernial sac contents.

Case Presentation

A 77-year-old male presented with a painless, progressively enlarging swelling in the right inguinal region for six months. There was no history of trauma, surgery, or infection in the groin or scrotal region.

On examination, a right inguinal swelling was noted, partially reducible with a positive cough impulse. Getting above the swelling was not possible. Both testes were palpable and normal. A clinical diagnosis of a right inguinal hernia was made. Ultrasonography revealed a 27-mm defect in the right inguinal region with herniation of bowel loops demonstrating peristalsis. No cystic lesion was detected. The impression was of an uncomplicated right inguinal hernia.

The patient underwent elective open hernia repair. Intraoperatively, a large cystic lesion was found within the hernial sac, extending from the deep inguinal ring to beyond the superficial ring (Figure 1). The cyst was adherent to the spermatic cord structures, which were identified and preserved. The cyst was excised en bloc with the hernial sac, and posterior wall reinforcement with mesh hernioplasty was completed. No intraoperative rupture occurred.

Gross examination revealed a 9–10 cm well-encapsulated cystic mass (Figure 3). Histopathological evaluation showed a cyst lined by stratified squamous epithelium with keratin flakes and no atypia, consistent with an epidermal inclusion cyst (Figure 4). The postoperative period was uneventful.

DISCUSSION

Unusual hernial sac contents are rare, and their identification can be challenging both pre- and intraoperatively. Epidermal inclusion cysts as a content of an inguinal hernia represent one of the rarest variants described (Yadav et al., 2017; Meher et al., 2016).

Pathogenesis may be congenital or acquired. In our case, the absence of trauma or prior surgery suggests a possible congenital origin, with gradual enlargement over time. Clinically, such cysts are indistinguishable from simple hernias, and ultrasonography may not reveal cystic features, as in our case. These diagnostic limitations have been consistently noted across reported cases (Inguinal Epidermoid Cyst Mimicking Hernia, 2024).

Surgically, adherence of the cyst to spermatic cord structures poses a technical challenge. Meticulous dissection is mandatory to avoid cord injury. Incomplete excision or rupture can result in inflammation or recurrence. Histopathology remains the gold standard for diagnosis, differentiating epidermal inclusion cysts (lined by squamous epithelium without appendages) from dermoid cysts (containing skin adnexa) (Ba-Shammakh et al., 2023). Routine histopathological examination of atypical hernial sac contents is strongly recommended, particularly in elderly males, to rule out neoplastic transformation or rare congenital anomalies.

Comparative Review of Literature

Meher et al. (2016)	56/M	Right	Inguinal hernia	Epidermoid cyst inhernial sac	Epidermal cyst	Uneventful
Author & Year	Age/ Sex	Side	Pre-op Diagnosis	Intra-op Finding	Histopathology	Outcome
Yadav et al. (2017)	45/M	Left	Hernia	Epidermoid cyst	Epidermal cyst	Uneventful
IJSR (2024)	60/M	Left	Incarcerated hernia	Cystic lesion	Epidermal cyst	Uneventful
Ba-Shammakh et al. (2023)	15/M	Right	Irreducible hernia	Dermoid cyst	Dermoid cyst	Uneventful

Chandrakanth et al. (2013)	18/M	Left	Irreducible hernia	Dermoid cyst	Dermoid cyst	Uneventful
Present case	77/M	Right	Reducible hernia	Epidermal cyst in sac	Epidermal inclusion cyst	Uneventful

Summary:
Across all reported cases, preoperative imaging failed to identify the cystic lesion. Intraoperative discovery was universal, with complete excision yielding excellent outcomes. The current case is among the oldest reported patients and demonstrates adhesion to spermatic cord structures, emphasizing the technical intricacy of dissection.

Figure Legends

Figure 1: Intraoperative image showing cystic lesion within hernial sac extending from deep to superficial ring.

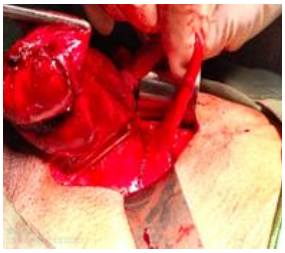

Figure 2: Intra-operative photograph demonstrating careful blunt dissection of the cyst from adherent spermatic cord structures after clear identification of cord anatomy.

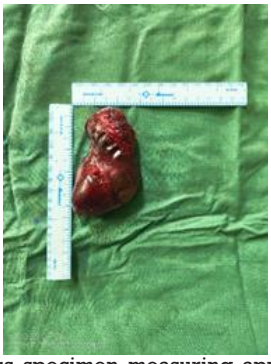

Figure 3: Gross specimen measuring approximately 9–10 cm.

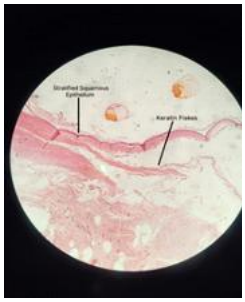

Figure 4: H&E-stained section showing stratified squamous epithelial lining with keratin flakes, consistent with epidermal inclusion cyst.

CONCLUSION

Epidermal inclusion cyst as a content of an inguinal hernia is a rare and often unsuspected finding. Preoperative imaging may be misleading, and diagnosis is typically intraoperative. Surgeons should maintain a high index of suspicion when encountering atypical hernial contents, especially in elderly males. Meticulous dissection and routine histopathological examination are vital for safe management and to rule out malignancy.

Learning Points

- Epidermal inclusion cyst may rarely present as a true content of an inguinal hernia sac.
- Preoperative ultrasonography can fail to detect cystic lesions within the hernia.
- Careful identification and dissection of spermatic cord structures are essential.
- Complete excision without rupture prevents inflammation and recurrence.
- Routine histopathology should be performed in all atypical hernia sac findings.

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