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RESEARCH ARTICLE

UNUSUAL PRESENTATION OF A GIANT EPIDERMOID CYST IN THE ANTERIOR ABDOMINAL WALL: CLINICAL MIMICRY OF LIPOMA: A CASE REPORT

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ABSTRACT

Background: Reports of epidermoid cysts mimicking lipomas in the abdominal wall are exceedingly rare.Epidermoid cysts are common benign lesions, but giant variants in the anterior abdominal wall are rare and may clinically resemble lipomas. Giant epidermoid cysts in uncommon sites can pose diagnostic challenges, particularly when they mimic other benign soft tissue lesions. **Case Presentation:** We report a patient presenting with large, soft, mobile swellingover anterior abdominal wall swelling initially diagnosed as lipoma based on clinical and imaginative features.Surgical excision revealed a cystic lesion with keratinous debris. Histopathological examination revealed a Cystic wall lined by squamous epithelium containing keratin. **Discussion:** Giant epidermoid cysts in uncommon sites such as the abdominal wall are rarelydocumented. Clinical mimicry of lipomas poses a diagnostic pitfall, as both lesions present withslow growth and soft consistency.Imaging may be inconclusive, supporting the vitalrole of histopathology. Literature review reveals fewsimilarcases, emphasizing the rarity of thispresentation. **Conclusion:** This case highlights the uncommon occurrence of a giant epidermoidcyst over theanterior abdominal wallmimicking a lipoma. It emphasizes the importance of considering epidermoid cyst in the differential diagnosisof abdominal wall swellings and the necessity ofhistopathological confirmation for accurate diagnosis and management.

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INTRODUCTION

Epidermoid (keratinous) cysts are common benign cutaneous lesions that are usually asymptomatic and straightforward to diagnose. However, giant variants exceeding 5 cm are rare and may present significant diagnostic challenges. The occurrence of giant epidermoid cysts in the anterior abdominal wall is exceptionally uncommon, with only a few cases reported in the literature. Their clinical features often overlap with other benign soft tissue lesions, particularly lipomas [1,2], as both typically present as slow-growing, soft, and mobile swellings. Imaging modalities such as ultrasound or CT are frequently inconclusive, which can lead to misdiagnosis [3]. This diagnostic overlap highlights the critical role of histopathological examination in establishing a definitive diagnosis. Failure to recognize the true nature of the lesion may result in inadequate preoperative planning or incomplete excision, thereby increasing the risk of recurrence

CASE HISTORY

A 70-year-old male presented with a 30-year history of a progressively enlarging swelling over the right anterior abdominal wall, extending from the subcostal margin to the lumbar region. The lesion measured 16 × 10 × 16 cm, was soft, mobile, and initially painless, later associated with a dragging sensation and discomfort (Figure 1).

INVESTIGATION: Ultrasound examination revealed a large, well-defined cystic lesion measuring 13 × 14 × 9.5 cm, with dense internal echoes and heterogeneous appearance. No internal vascularity was noted, and the lesion was confined to the subcutaneous plane without intramuscular invasion, initially suggestive of a long-standing lipoma. (Figure 2)

Contrast-enhanced CT of the abdomen and pelvis demonstrated a homogeneous, non-enhancing cystic lesion (CT value: 15 HU) measuring 16 × 9.5 × 16 cm in the right subcutaneous abdominal wall. The lesion showed no calcifications, septations, or intraperitoneal extension, consistent with a benign etiology.
(Figure 3)

HISTOPATHOlOGY: Showed a cystic wall lined by squamous epithelium containing keratin material confirming Epidermoid cyst (Figure 4)

TREAMENT: The patient was placed under regional anesthesia. A transverse incision was made over the swelling and deepened up to the cyst wall, raising skin flaps all around.

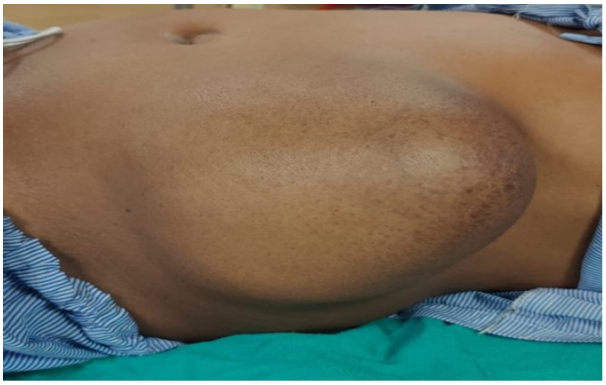


Figure 1. Showing a large swelling over right abdominal wall clinically mimicking a lipoma

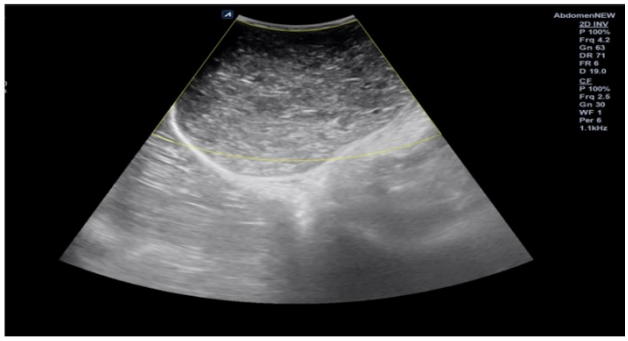
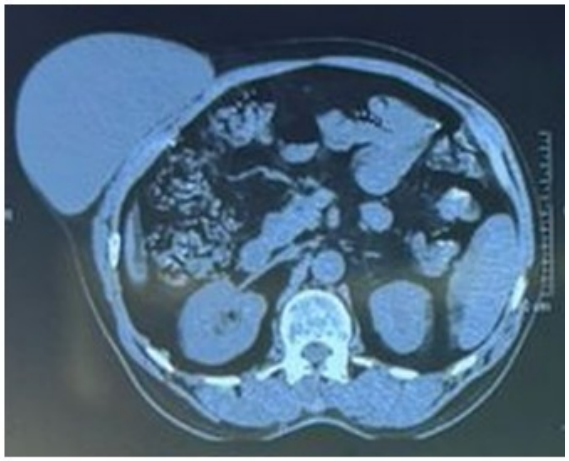


Figure 2. Abdominal ultrasound showing a well circumscribed heterogenous lesion with dense internal echoes with no obvious internal vascularity, initially suggestive of lipoma



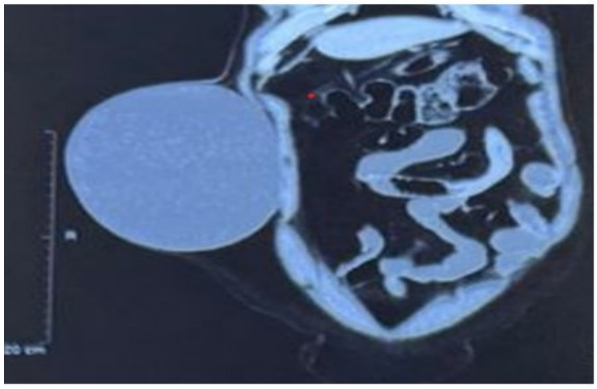


Figure 3. Axial CT and Coronalscan ofthe abdomen showing a well circumscribed homogenous hypoattenuating (low density) lesion in right lateral subcutaneous tissue distinct from underlying musclelayers, consistent with benign etiology

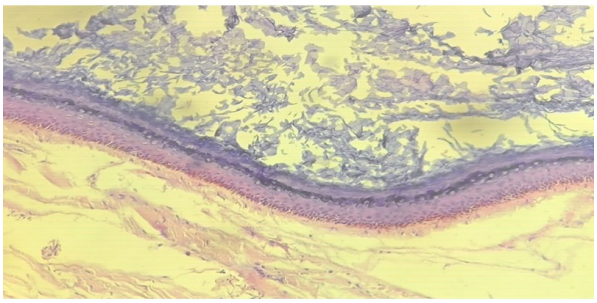


Figure 4 Showing a cystic wall lined by squamous epithelium containing keratin material

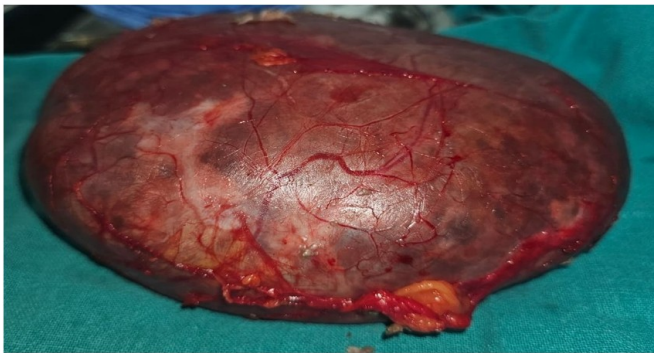


Figure 5. Showing completely excised cyst with intact wall

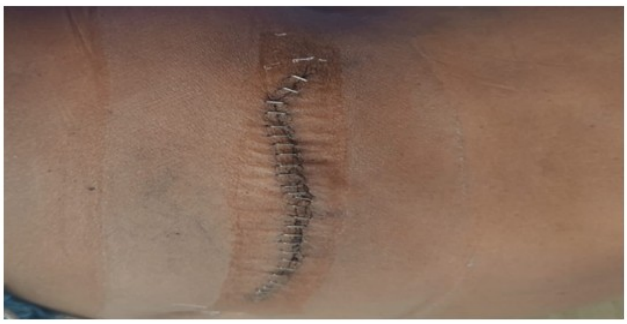


Figure 6. Showing postoperative wound after primary closure

The cyst was dissected from the underlying muscles with its wall intact[4]. (Figure 5) Hemostasis was achieved, and the excess skin was excised to facilitate primary closure and improve aesthetics. The incision was closed in layers with absorbable sutures and skin staplers. (Figure 6)

RESULTS

Patient was discharged on second postoperative day and kept in follow up. Skin staplers wereremoved on 14 postoperative day afterthe wound healed without any complications. Histopathological examination confirmed the diagnosis of aEpidermoid cyst lined bysquamous epithelium containing keratinous debris. No recurrence was noted during follow-up.

DISCUSSION

Epidermoid cyst, is a benign encapsulated, subepidermal nodule filled with keratin material containing keratin, commonly found on the face, trunk, neck, scalp, scrotum, earlobe and breast and can vary in size from a few millimeters to less than a few centimeters. Giant epidermal cyst is defined

when the size of the cyst exceeds 5 cm. The majority of epidermoid cyst cases are sporadic. Although epidermoid cysts can be found in autosomal dominant (AD) Gardner syndrome (familia[17,18]l adenomatous polyposis) and Gorlin syndrome[13,14] (basal cell nevus syndrome). Epidermoid cysts are rare before puberty but can happen at any age. Young adult males are the most common age of presentation. Epidermoid cysts occurring before puberty in unusual locations and numbers raise the suspicion of a syndrome. In elderly patients with Favre-Racouchot syndrome (nodular elastosis with cysts and comedones)[15,16], epidermoid cysts may result from chronic sun damage. They are predominantly found in males versus females (ratio 2:1). In the neonatal period, small epidermal cysts, referred to as milia[17,18], are common. Epidermoid cysts are derived from the follicular infundibulum. Generally, these cysts are the result of the plugging of the follicular orifice. Additionally, they can also occur from traumatic and penetrating injuries leading to the implantation of the epithelium.

Epidermoid typically remain small and asymptomatic. Giant cysts, defined as those exceeding 5 cm, are rare and may pose diagnostic challenges. Their occurrence in the anterior abdominal wall is particularly uncommon, with very few cases documented. *Doshi et al.[6] further highlighted the unusual presentation of a giantsebaceous cyst over the back, reinforcing the potential for misdiagnosis when clinical and imaging features overlap."*

Clinical features often overlap with lipomas, as both present as slow-growing, soft, mobile swellings. Imaging modalities such as ultrasound and CT may not reliably differentiate between the two, making histopathology essential for definitive diagnosis. Epidermoid cysts with increased sizes are more brittle and prone to secondary infection. Importantly, there are reports of malignantchanges in epidermoid cysts in the literature[5]. In our case, the Histopathology revealed no malignancy. Although epidermoid cysts have a benign clinical course, there have been a few isolated reports of basal cell carcinoma, squamous cell carcinoma, epithelioid carcinoma and other malignancies being linked to these cysts.Complete excision is the treatment of choice forepidermoid cysts. Incomplete removal may lead torecurrence.Hence excision of the cyst withits intact wallis stressed upon. To get good aesthetic results for giant epidermal cysts, redundant skin must be removed. For giant cysts, careful dissection is required to avoid rupture and spillage. In the present case, both ultrasound and CT suggested a benign lesion, most consistent with a lipoma. However, intraoperative findings and histopathological examination confirmed an epidermoid cyst. This highlights the limitations of radiological modalities in differentiating between cystic and lipomatous lesions. Similar diagnostic challenges have been reported in the literature. Hu et al[7]. described a giant abdominal epidermoid cyst with squamous epithelial proliferation, emphasizing the rarity of such lesions in the abdominal wall. Singh et al[8]reported a large sebaceous cyst in the gluteal region, while Sabhlok et al[9]. documented a congenital keratinous cyst mimicking a lipoma, reinforcing the potential for misdiagnosis when clinical and imaging features overlap. Ballard et al[10]. reviewed abdominal wall masses and noted that radiologic-pathologic correlation is essential, as imaging alone may not provide definitive diagnosis. *More recently, Anan et al.[11] provided a comprehensive pictorial overview of abdominal wall masses on ultrasound, while Ferrier and Kingston[12] emphasized the role of ultrasound in differentiating palpable abdominal wall lesions, underscoring its value as a first-line diagnostic tool."*

These reports collectively underscore the indispensable role of histopathology in establishing a definitive diagnosis. Complete surgical excision with intact capsule removal remains the treatment of choice, ensuring cure and preventing recurrence. In our case, the patient recovered uneventfully, with no recurrence noted during follow-up.

This case adds to the sparse literature on giant epidermoid cysts of the anterior abdominal wall. It emphasizes the importance of considering epidermoid cysts in the differential diagnosis of abdominal wall swellings and reinforces the necessity of histopathological confirmation for accurate diagnosis and management.

CONCLUSION

Giant epidermoid cysts of the anterior abdominal wall are exceedingly rare and can closely mimic lipomas, leading to diagnostic pitfalls. Imaging may suggest benign lesions but is often inconclusive, making histopathology essential for definitive diagnosis. Complete excision with intact capsule removal remains the treatment of choice to prevent recurrence. Awareness of this rare entity ensures accurate recognition and optimal patient outcomes.

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