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RESEARCH ARTICLE

ARTERIOVENOUS MALFORMATION PRESENTING AS A LONG-STANDING ANTERIOR ABDOMINAL WALL MASS IN AN ELDERLY FEMALE: A RARE CLINICAL PRESENTATION

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ABSTRACT

Arteriovenous malformations (AVMs) are uncommon vascular anomalies characterized by abnormal direct communications between arteries and veins without an intervening capillary bed. They are rarely encountered in the anterior abdominal wall and may clinically mimic benign cystic lesions. We report a rare case of a 68-year-old female presenting with a long-standing, slowly progressive, painful anterior abdominal wall swelling initially suspected to be a sebaceous cyst on ultrasonography. Surgical excision and subsequent histopathological examination revealed features consistent with an arteriovenous malformation. This case highlights the diagnostic challenges posed by atypical presentations of vascular malformations and underscores the importance of histopathology in establishing a definitive diagnosis.

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INTRODUCTION

Anterior abdominal wall swellings encompass a broad differential diagnosis including sebaceous cysts, lipomas, desmoid tumors, hematomas, hernias, and soft-tissue neoplasms. According to *Bailey & Love's Short Practice of Surgery* and *Sabiston Textbook of Surgery*, vascular malformations of the abdominal wall are rare and often misdiagnosed due to their indolent growth and nonspecific clinical features. Arteriovenous malformations are typically congenital but may remain asymptomatic for years before manifesting clinically. Their presentation as a superficial, cystic, painful swelling is unusual and may closely resemble common benign conditions.

CASE PRESENTATION

A 68-year-old female presented with a lump over the right side of the anterior abdominal wall, located approximately 2–3 cm below the right costal margin. The swelling had been present for the past 10 years and had gradually increased in size with a slow rate of progression. The swelling was associated with pain but there was no history of fever, trauma, discharge, loss of weight, or loss of appetite. The patient was a known case of diabetes mellitus and was on regular treatment.

CLINICAL EXAMINATION

Inspection

- **Site:** Right anterior abdominal wall, 2–3 cm below the right costal margin
- **Size:** Approximately 3 cm × 4 cm
- **Shape:** Globular
- **Surface:** Partly smooth and partly lobulated
- **Skin over swelling:** Presence of a central punctum with slight discoloration

- **Surrounding skin:** Normal

Palpation

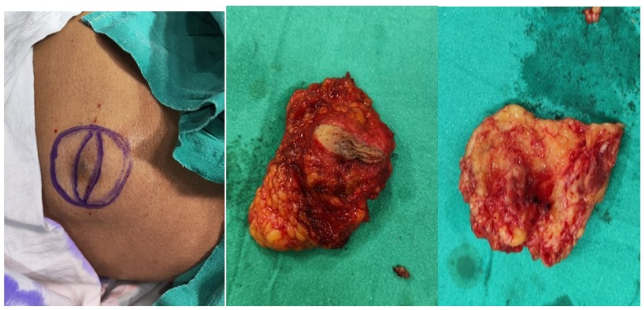
- **Local temperature:** Raised
- **Tenderness:** Present
- **Plane:** Deep-seated
- **Consistency:** Firm to cystic
- **Mobility:** Mobile but fixed to skin
- **Transillumination:** Absent
- **Reducibility:** Absent
- **Compressibility:**Present
- **Pulsatility:** Absent

Investigations

- **Ultrasonography (USG):** Revealed a hypoechoic benign-appearing cystic lesion, suggestive of a sebaceous cyst.
- **Laboratory Investigations:** All parameters were within normal limits.

Based on the clinical and radiological findings, the patient was planned for elective surgical excision.

OPERATIVE FINDINGS



The patient underwent excision of the swelling under local anesthesia with sedation. An elliptical incision was marked and taken around the punctum. The cystic swelling was dissected circumferentially. During dissection from the base, a deep fibrofatty extension arising from the lower portion of the cystic lesion was noted. This extension was located above the underlying muscle plane and fascia. The swelling was excised completely along with the fibrofatty component, which measured 6 cm × 3.3 cm × 3.8 cm, and the specimen was sent for histopathological examination. The cavity was closed using Vicryl 2-0, and the skin was closed with Ethilon 3-0.

HISTOPATHOLOGICAL EXAMINATION

Gross Examination

- Globular swelling with attached fibrofatty tissue
- Cut section revealed multiple hemorrhagic areas

Microscopic Examination

- Subcutaneous fat showed irregular proliferations of vascular channels of varying sizes
- Channels were communicating with each other, lined by flattened endothelial cells
- Vessels were dilated and congested
- Lymphocytic aggregates were present between the vascular channels
- Fibrin thrombi were noted within the vascular lumina

FINAL DIAGNOSIS

Arteriovenous Malformation

POSTOPERATIVE COURSE AND FOLLOW-UP

Postoperative recovery was uneventful. Wound healing was satisfactory with no complications. There was no clinical evidence of recurrence on follow-up. A contrast-enhanced CT scan of the abdomen was performed to rule out intra-abdominal or deeper extension, which was found to be within normal limits.

DISCUSSION

Arteriovenous malformations represent a subset of vascular anomalies resulting from aberrant vascular development. As described in *Harrison's Principles of Internal Medicine*, AVMs may remain clinically silent for decades and present later due to progressive vascular dilation, thrombosis, or local pressure effects. According to *Bailey & Love* and *Sabiston*, superficial AVMs can mimic benign cystic lesions when pulsatility and bruit are absent, especially in long-standing lesions with thrombosis. In the present case, the presence of a punctum, cystic consistency, and benign USG findings led to a preoperative diagnosis of sebaceous cyst. The true nature of the lesion was only revealed on histopathology, emphasizing its diagnostic value. Complete surgical excision remains the treatment of choice for localized AVMs without deep extension. Incomplete excision may lead to recurrence, while deeper lesions may require endovascular intervention.

CONCLUSION

This case illustrates a rare presentation of an arteriovenous malformation masquerading as a benign anterior abdominal wall cyst in an elderly female. Long-standing duration, pain, and atypical intraoperative findings should raise suspicion of uncommon pathologies. Histopathological examination remains the gold standard for diagnosis, and complete surgical excision offers excellent outcomes in localized lesions.

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