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Case Report

Surgery Section

An Unusual Presentation of an Abdominal Wall Abscess Masquerading as Malignancy: A Case Report

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ABSTRACT

Intramuscular abscesses involving the anterior abdominal wall are distinctly uncommon. A chronic course is usually characterised by the presence of firm masses with minimal inflammatory signs, closely resembling soft-tissue tumours on clinical examination and imaging. These features can pose a diagnostic challenge and complicate their management. A 45-year-old female presented with localised abdominal pain for one month, accompanied by intermittent low-grade fever. She had been on antidiabetic therapy for the past seven years and had undergone a lower segment caesarean section 23 years earlier. Examination revealed a firm, non-fluctuant mass in the left anterior abdominal wall. Radiological evaluation demonstrated an ill-defined enhancing lesion involving the left rectus abdominis muscle, raising concern for a neoplastic process. Surgical exploration revealed a hard mass adherent to the posterior rectus sheath, grossly suggestive of a desmoid tumour. In the absence of intraoperative frozen section analysis, wide local excision with abdominal wall reconstruction was undertaken. Histopathological assessment of the excised mass confirmed the diagnosis of a non-malignant chronic intramuscular abscess. Chronic intramuscular abscesses of the abdominal wall are rare and may closely mimic soft-tissue malignancies. Histopathological evaluation and surgical exploration may be needed in patients with equivocal imaging findings.

Keywords: Abdominal wall mass, Anterior abdominal wall, Desmoid tumour mimic, Intramuscular abscess, Rectus abdominis

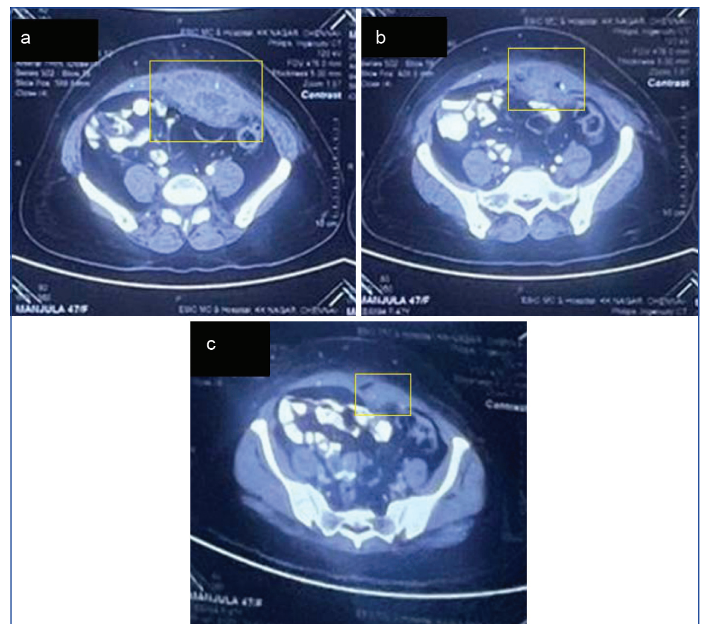
CASE REPORT

A 45-year-old woman presented with a one-month history of dull, localised abdominal pain associated with intermittent episodes of low-grade fever. The pain was insidious in onset and gradually progressive. There was no history of trauma, tuberculosis, immunosuppression, or unintentional weight loss except a history of lower segment caesarean section 23 years back. She was diabetic for last seven years, which was managed by insulin and other oral anti-diabetic agents.

On physical examination, a firm, tender, non-fluctuant swelling measuring approximately 7×6 cm was palpable in the left lumbar region of the anterior abdominal wall. The mass appeared relatively fixed to the underlying musculature. The overlying skin was normal, with no erythema, warmth, or discharge. The remainder of the systemic examination was unremarkable. Laboratory investigations revealed a white blood cell count of 12,000 cells/μL, neutrophils 11×10^9/L, and C-Reactive Protein (CRP) 50 mg/L. Blood culture was negative.

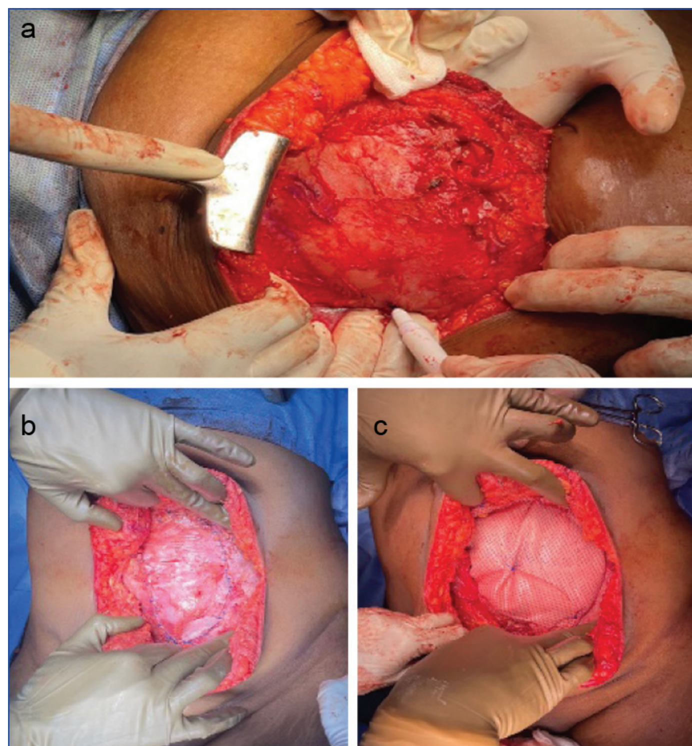
Ultrasonography of the anterior abdominal wall demonstrated a heteroechoic lesion within the intermuscular plane involving the umbilical and left lumbar regions. The lesion measured approximately 7.6×7.0×2.2 cm, with an estimated volume of ~60 mL. Contrast-Enhanced Computed Tomography (CECT) of the abdomen revealed an ill-defined, hypodense soft-tissue lesion measuring 4.2×7.8×6.0 cm, located just inferior to the umbilicus. The lesion was centred around the linea alba and the left rectus abdominis muscle, with extension into the deep subcutaneous plane. Irregular peripheral enhancement was noted. Although an evolving abscess was considered, the imaging findings were inconclusive, and a soft-tissue neoplasm could not be excluded [Table/Fig-1]. The differential diagnoses considered included a chronic abdominal wall abscess with antibioma and an organised abdominal wall haematoma with mixed degeneration; however, the provisional diagnosis was a desmoid tumour.

Attributed to the diagnostic uncertainty and concern for malignancy, the patient was taken up for surgical exploration. Intraoperatively, the lesion was found to be unusually firm and densely adherent to the posterior rectus sheath, closely resembling a desmoid tumour in gross appearance. Intraoperative frozen section analysis was not available. A wide local excision was therefore performed, including resection of the involved portion of the rectus abdominis muscle and rectus sheath. During dissection, a small amount of purulent material was encountered, suggesting the presence of an underlying abscess cavity. Microbial analysis showed negative mycobacterial growth. The excision resulted in a significant anterior abdominal wall defect. The defect measured 15×10×7 cm and could not be closed using component separation and Transversus

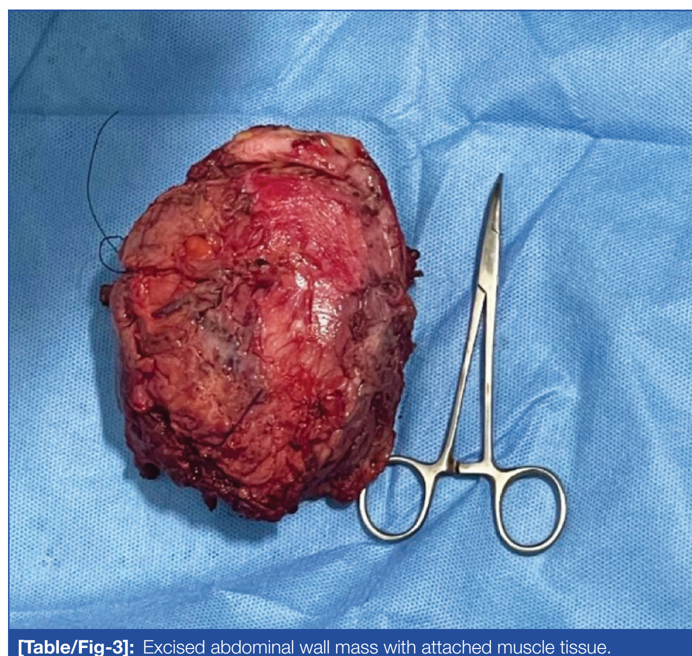


[Table/Fig-1]: Computed tomography scan; yellow box showing soft-tissue lesion centred in the left rectus abdominis muscle, with irregular peripheral enhancement and extension into the adjacent deep subcutaneous plane.

Abdominis Release (TAR) alone, as the musculature on one side was already deficit. Therefore, reconstruction was performed using a composite polypropylene mesh reinforced with a tensor fascia lata graft harvested from the left thigh as a biological component [Table/Fig-2]. Gross specimen of the excised abdominal wall mass with attached muscle tissue, appearing firm and well circumscribed was initially suggestive of a soft-tissue tumour [Table/Fig-3].

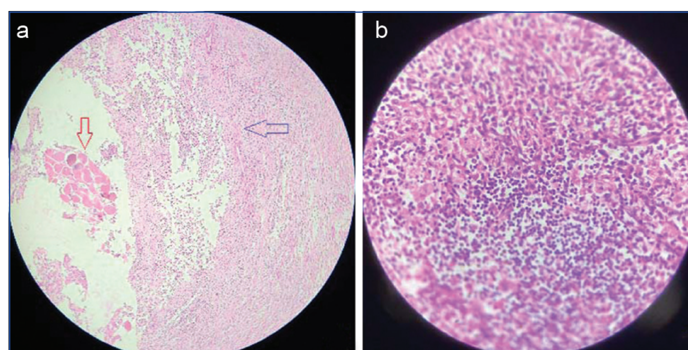


[Table/Fig-2]: a) Intraoperative photograph showing exposure of a firm anterior abdominal wall mass following skin and subcutaneous tissue incision, with the lesion appearing densely adherent to the underlying musculature; b) Anterior abdominal wall defect after wide local excision of the lesion, with the posterior rectus sheath and surrounding tissues clearly exposed; c) Abdominal wall reconstruction using a composite mesh placed over the defect and secured to the surrounding tissues.



[Table/Fig-3]: Excised abdominal wall mass with attached muscle tissue.

Histopathological examination of the excised specimen demonstrated skeletal muscle fibres at the periphery with adjacent dense mixed inflammatory infiltrates composed predominantly of neutrophils, lymphocytes, and plasma cells; consistent with a chronic intramuscular abscess. The inflammatory process was associated with areas of fibrocollagenous tissue, consistent with a chronic inflammatory response. No features of malignancy were identified, confirming the diagnosis of a chronic intramuscular abscess [Table/Fig-4].



[Table/Fig-4]: Haematoxylin and eosin staining of the excised specimen showing skeletal muscle fibre at the periphery (red arrow) with adjacent dense mixed inflammatory infiltrate (blue arrow); a) 10x; b) 40x.

The patient was prescribed intravenous Piperacillin-Tazobactam (4.5 g) administered twice daily for seven days. The postoperative period was uneventful. The wound was healthy and the sutures were removed on day 14. The patient recovered well, with no immediate complications, and was discharged in stable condition. Follow-up at three months showed a healthy wound recovery with no other complaints.

DISCUSSION

Primary abscess formation within the anterior abdominal wall is rare and poses a diagnostic challenge, as most abscesses are associated with postoperative infections and intraperitoneal spread. These abscesses have been reported infrequently and might or might not be associated with clinical presentations [1,2]. Clinical presentations such as localised pain, spiking fever, tachycardia, chills, leucocytosis, tachypnoea, and others might be observed in patients presenting with an anterior abdominal wall abscess [3]. The abscess can also be a manifestation of other pathologies. A case of a 66-year-old Asian male presented with an anterior abdominal wall abscess associated with severe acute pancreatitis. The patient had intermittent fever, abdominal pain, and progressive increase [4]. A similar presentation of gradually increasing abdominal pain with intermittent episodes of fever was noted in this patient.

Radiological modalities such as X-rays, USG, CT, and Magnetic Resonance Imaging (MRI) can help assess the location and extent and rule out malignancy. Though USG can be the primary screening tool, it might not be competent for deep lesions [3]. MRI can be helpful in diagnosing soft-tissue tumours and CT can further provide insights into the relationship with adjacent tissues, facilitating the diagnosis of distant metastasis. Li M et al., reported that chronic inflammatory masses of the abdominal wall frequently demonstrate irregular margins and enhancement patterns on CT and MRI, which may be indistinguishable from soft-tissue tumours [5]. Radio-imaging is valuable for defining lesion extent and anatomical relationships; some inflammatory lesions may closely resemble neoplastic processes, and cross-sectional imaging can differentiate between neoplastic and non-neoplastic masses [6,7]. As noted in this case, the imaging findings might be inconclusive and intraoperative findings, along with histopathological results, might be needed to establish the diagnosis. Kurose T et al., reported a similar case of a 70-year-old female who presented with an abdominal wall abscess caused by an unusual etiology that mimicked malignancy both radiologically and intraoperatively, ultimately necessitating wide surgical excision [8].

Additionally, image-guided biopsy using ultrasound, computed tomography or MRI might be helpful to study the neoplastic masses, but it has its own set of limitations related to target location and inability to sample necrotic or cystic areas efficiently, prolonged radiation exposure, inadequate sample quantity, bleeding or organ

injury [9]. Intramuscular abscesses are rare owing to the relative resistance of skeletal muscles to infection, given their rich vascular supply, and are therefore often marked by a low index of clinical suspicion [10]. Crum-Cianflone NF further noted that chronic or subacute presentations of infectious myositis may diverge significantly from classical descriptions, increasing the risk of diagnostic error and overtreatment [11]. As noted in this patient, firm consistency of the lesion, irregular imaging characteristics, and intraoperative appearance strongly suggested a neoplastic process, leading to wide excision in the absence of a definitive preoperative diagnosis. Histopathological evaluation ultimately confirmed a chronic intramuscular abscess, underscoring the indispensable role of tissue diagnosis in resolving such diagnostic dilemmas.

This case report describes a rare presentation of a chronic intramuscular abscess of the rectus abdominis muscle masquerading as a malignant anterior abdominal wall tumour. It highlights the diagnostic challenge, radiological pitfalls, and surgical decision-making involved in its management in patients with inconclusive preoperative imaging. Image-guided biopsy or cautious surgical exploration might be helpful in such patients and also prevent unnecessary extensive resections.

CONCLUSION(S)

Chronic intramuscular abscesses of the anterior abdominal wall are rare and may present with atypical clinical and radiological features that mimic soft-tissue malignancies. This case highlights the limitations of imaging in reliably differentiating chronic inflammatory lesions from neoplastic processes. Awareness of this uncommon entity can aid in timely diagnosis and appropriate treatment, preventing delay in diagnosis and managemnt. Surgical exploration with histopathological examination remains essential for establishing a definitive diagnosis in cases with diagnostic uncertainty.

REFERENCES

[1] Shiihara M, Sudo Y, Matsushita N, Osugi H, Inoue T. Recurrent primary abdominal wall abscess: A case report and review of the literature. Cureus. 2023;15(6):e41069. Doi: 10.7759/cureus.41069.

[2] Gandhi J, Gandhi N. Abdominal wall abscess: More than meets the eye. BMJ Case Rep. 2010;2010:bcr08.2009.2151. Doi: 10.1136/bcr.08.2009.2151.

[3] Mahajan PS, Kolleri JJ, Farghaly H. Rare case of primary anterior abdominal wall abscess: Ultrasound, CT, and MRI features. Cureus. 2021;13(12):e20618. Doi: 10.7759/cureus.20618.

[4] Jia YC, Ding YX, Mei WT, Xue ZG, Zheng Z, Qu YX, et al. Anterior abdominal abscess - a rare manifestation of severe acute pancreatitis: A case report. World J Clin Cases. 2021;9(30):9218-27. Doi: 10.12998/wjcc.v9.i30.9218.

[5] Li M, Zhang L, Xu XJ, Shi Z, Zhao XM. CT and MRI features of tumours and tumourlike lesions in the abdominal wall. Quant Imaging Med Surg. 2019;9(11):1820-39. Doi: 10.21037/qims.2019.09.03.

[6] Ballard DH, Mazaheri P, Oppenheimer DC, Lubner MG, Menias CO, Pickhardt PJ, et al. Imaging of abdominal wall masses, masslike lesions, and diffuse processes. Radiographics. 2020;40(3):684-706. Doi: 10.1148/rg.2020190170.

[7] Ahn SE, Park SJ, Moon SK, Lee DH, Lim JW. Sonography of abdominal wall masses and masslike lesions: Correlation with computed tomography and magnetic resonance imaging. J Ultrasound Med. 2016;35(1):189-208. Doi: 10.7863/ultra.15.03027.

[8] Kurose T, Inokuchi S, Tsutsumi S, Terashi T, Ikebe M, Bandoh T, et al. Abdominal wall abscess caused by small intestinal penetration that was difficult to distinguish from a malignant tumour: A case report. Surg Case Rep. 2025;11(1):25. Doi: 10.70352/scrj.cr.25-0251.

[9] Patzer TS, Müller F, Meir M, Huflage H, Müller L, Bley TA, et al. Navigating biopsy safety: Complication rates under ultrasound and CT guidance. Diagnostics (Basel). 2025;15(20):2641. Doi: 10.3390/diagnostics15202641.

[10] Fountoukis T, Tsatsanidis N, Tilkeridou M, Konstantinou I, Fytas P, Skandalos I. Abdominal rectus muscle pyomyositis: Report of a case and review of the literature. Infect Dis Rep. 2018;10(1):7522. Doi: 10.4081/idr.2018.7522.

[11] Crum-Cianflone NF. Bacterial, fungal, parasitic, and viral myositis. Clin Microbiol Rev. 2008;21(3):473-94. Doi: 10.1128/cmr.00001-08.

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