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Case Report

Omental Inflammatory Myofibroblastic Tumor, Masquerading as Adnexal Pathology in a Child: A Case Report

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ABSTRACT

An inflammatory myofibroblastic tumour (IMFT) is a rare neoplasm with unpredictable malignant potential occurring throughout the body. Omental IMFT is exceedingly rare, with fewer than 15 reported cases. We present a case of a 9-year-old female patient with a freely mobile pelvic mass, initially resembling an adnexal mass on imaging. The patient underwent tumour resection with omentectomy. Histopathological examination confirmed the diagnosis of omental IMFT. This case underscores the rarity of omental IMFT, particularly in paediatric patients, and its atypical presentation as an adnexal mass. The diagnostic challenges and implications for management are discussed.

Keywords: Children, Inflammatory myofibroblastic tumour, Pseudotumor

INTRODUCTION

Inflammatory myofibroblastic tumour (IMFT), or Inflammatory Pseudotumor, is a rare neoplasm with variable malignant potential, primarily affecting children and young adults.[1, 2] IMFT has been reported in various locations, with a predilection for the lungs, mediastinum, and orbits. Intraabdominal IMFT typically involves the liver, stomach, bowel, and spleen. Exceptionally rare, omental IMFT has been documented in fewer than 15 global cases. Due to its rarity and nonspecific presentation, preoperative diagnosis poses significant challenges. We report a unique case of omental IMFT masquerading as an adnexal mass, highlighting diagnostic complexities and the crucial role of histopathological confirmation. This manuscript was prepared following the consensus-based clinical case reporting (CARE) guidelines.

CASE REPORT

A 9-year-old girl presented with a 4-month history of incidentally detected lower abdominal mass and loss of appetite without systemic symptoms. Clinical examination revealed a freely mobile, lower abdominal pelvic mass with no palpable lymphadenopathy. Laboratory tests, including haemoglobin, total leukocyte count, erythrocyte sedimentation rate (ESR), serum proteins, and tumour markers [CA-125, Alpha feto protein (AFP), and Beta human chorionic gonadotropin (HCG)], were within normal limits. Imaging studies (ultrasound and computed tomography (CT) showed a well-defined, heteroechoic, predominantly solid lesion (5.9 × 5.2 cm) in the left adnexal region [Figures 1 and 2].

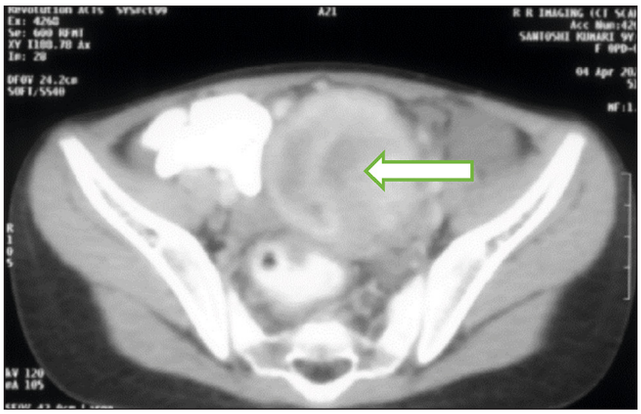

Figure 1: Contrast-enhanced computed tomography—axial cut scan showing a well-defined, heteroechoic, predominantly solid lesion (5.9 × 5.2 cm) in the left adnexal region (white arrow).

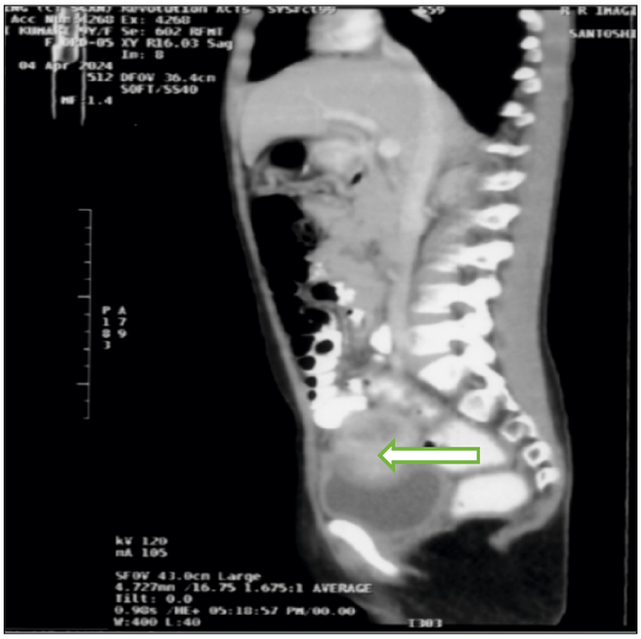

Figure 2: Contrast-enhanced computed tomography—sagittal cut scan showing a well-defined, heteroechoic, predominantly solid lesion (5.9 × 5.2 cm) in the left adnexal region (white arrow).

Intraoperatively, a well-capsulated, vascularised, multilobulated hard tumour (4 × 5 cm) arose from the greater omentum [Figure 3] with mesenteric lymphadenopathy and minimal ascites. The histopathological evaluation confirmed IMFT, with immunohistochemistry (IHC) revealing diffuse strong staining for anaplastic lymphoma kinase (ALK) [Figure 4] and smooth muscle actin (SMA) [Figure 5], patchy moderate staining for desmin, and negativity for DOG1 and CD117. The patient underwent an omentectomy with tumour excision and mesenteric lymph node biopsy. Given the tumour's benign nature, no further treatment was offered, and the patient is currently under surveillance.

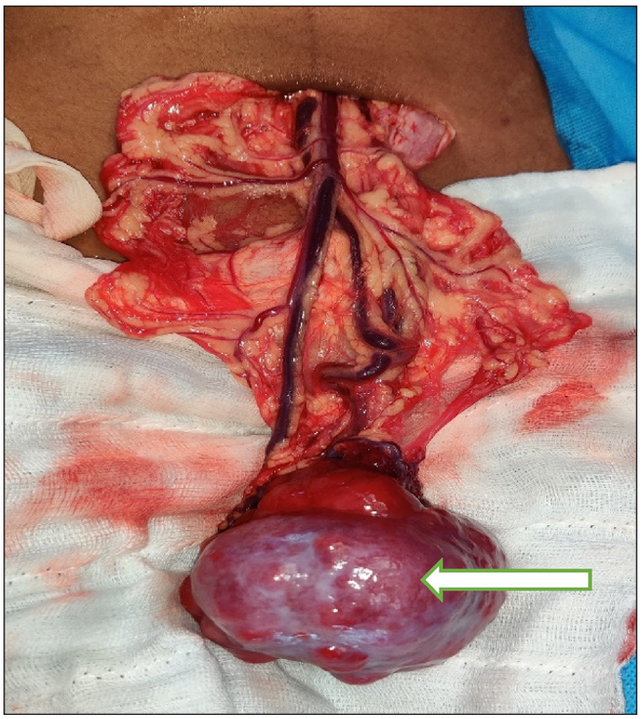

Figure 3: Intraoperative image showing tumour arising from omentum (white arrow).

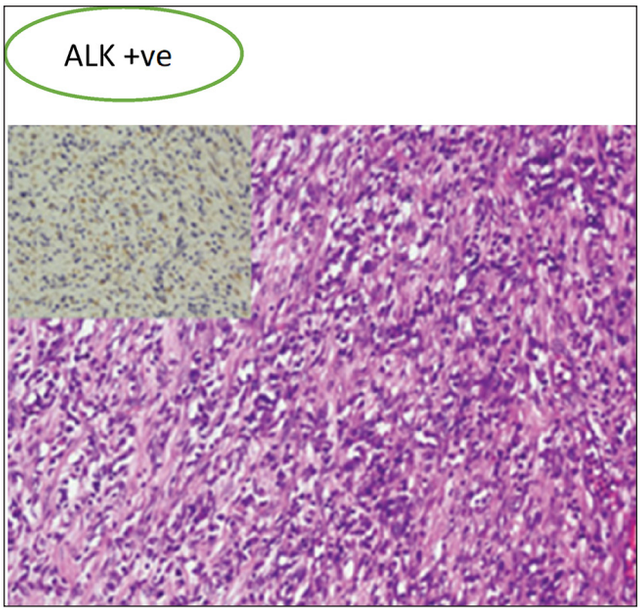

Figure 4: Histopathology—spindle cell populations with plasma cell infiltrate with the tumour cells showing cytoplasmic anaplastic lymphoma kinase (ALK) positivity (H&E, 10X).

DISCUSSION

IMFT is a rare, intermediate-biology tumour characterised by variable clinical presentations, posing significant diagnostic

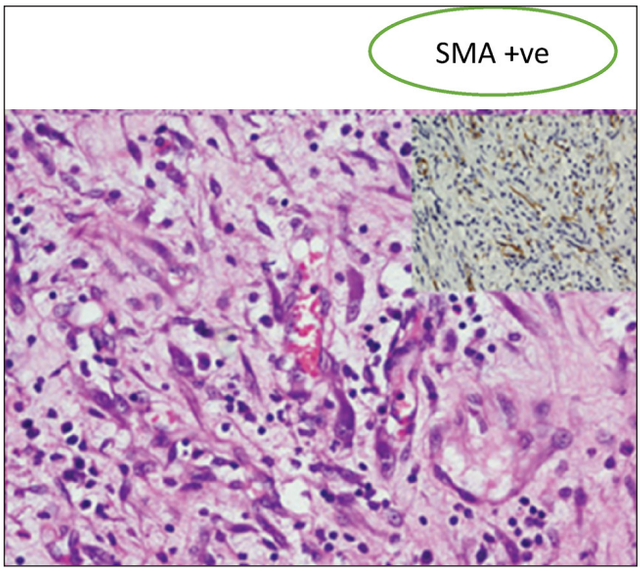

Figure 5: Histopathology—spindle cell populations with plasma cell infiltrate with the tumour cells showing cytoplasmic smooth muscle actin (SMA) positivity (H&E, 40X).

challenges.[1] Initially considered benign, IMFT's potential for recurrence and metastasis is well-documented, emphasising the need for accurate diagnosis and optimal management. IMFT can occur in various extrapulmonary locations, including the abdomen, liver, and omentum, and presents with nonspecific symptoms such as fever, weight loss, abdominal pain, and palpable masses. Abdominal IMFTs are frequently mistaken for malignant tumours, including peritoneal carcinomatosis, sarcoma, or lymphoma. Laboratory findings are nonspecific, and radiologic features overlap with malignant lesions.[3] Histology and IHC are crucial for diagnosis. Histologically, IMFT is characterised by diffuse inflammation, prominent plasma cells, and positivity for actin and vimentin on IHC.[4] The tumour's cellular composition and immunophenotypic features are crucial for distinguishing IMFT from other malignant entities, such as sarcomas, lymphomas, and peritoneal carcinomatosis.[5, 6] Prognosis is influenced by features such as multifocality, retroperitoneal location, incomplete excision, and tumour size, while ALK positivity predicts lower metastasis risk.[7] Treatment involves complete surgical excision of the tumour, which is the primary therapeutic approach. The role of radiotherapy and chemotherapy is limited, and their effectiveness is not well established. Regular follow-up is essential for detecting late recurrences, which can occur even years after initial treatment. Overall, IMFT's rarity and nonspecific presentation underscore the importance of histopathological diagnosis and multidisciplinary management to ensure optimal patient outcomes.

CONCLUSION

Omental IMFT's rarity and nonspecific presentation pose diagnostic challenges. Accurate histopathological diagnosis is crucial for optimal management and patient outcomes.

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