An Unusual Presentation of Giant Cell Tumor as a Giant Retroperitoneal Mass causing Aortic Pseudoaneurysm in a Pediatric Patient

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Abstract:
Background: Giant cell tumor (GCT) of the bone is a benign but locally aggressive tumor typically affecting long bones in young adults. Spinal involvement is rare, and presentation as a massive retroperitoneal mass with vascular involvement is highly atypical—especially in pediatric patients.

Case Presentation: We report the case of an 11-year-old male who presented with abdominal pain and a progressively enlarging left flank mass. Initially managed as Pott's disease with presumed psoas abscess, the patient received 6 months of anti-tuberculosis therapy. However, continued enlargement of the mass, weight loss, and anemia prompted further evaluation. Cytology revealed multinucleated giant cells and osteoid calcifications but no evidence of tuberculosis. Imaging revealed a large, complex, calcified retroperitoneal mass with vascular encasement and an infrarenal aortic pseudoaneurysm. Due to persistent severe abdominal pain and significant decrease in his hematocrit, the patient underwent exploratory laparotomy, complete tumor excision, and reconstruction of the infrarenal aorta and inferior vena cava using a bifurcated Dacron graft. Postoperatively, the patient developed acute limb ischemia requiring urgent graft and limb embolectomy. Following the second surgery, the patient had an uneventful recovery.

Conclusion: This case highlights an extremely rare pediatric presentation of GCT with atypical features, including massive retroperitoneal extension and vascular involvement forming a pseudoaneurysm. Multidisciplinary team approach and surgical management were critical to the patient's survival. This case underscores the importance of considering GCT in the differential diagnosis of persistent retroperitoneal masses in children, particularly when initial treatment fails.