

November 17-18, 2025 | London, UK



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Primary Chest Wall Angiofibroma: An Exceptionally Rare Benign Tumor Expanding the Spectrum of Chest Wall Lesions

Angiofibromas are benign, highly vascular tumours that typically arise in the nasopharynx or appear as facial papules in tuberous sclerosis. Primary chest wall angiofibroma is exceedingly rare, with documented cases virtually absent from the literature, and are often misinterpreted as malignant soft-tissue neoplasms. We report the case of a 62-year-old woman who presented with a progressively enlarging, tender left chest-wall mass associated with exertional dyspnoea and nocturnal discomfort. Cross-sectional imaging with CT and PET-CT revealed a 3-cm hypervascular lesion arising from the intercostal space of the 10th rib (SUVmax 13.1) supplied by an intercostal artery, with no evidence of bony invasion. Following multidisciplinary review, she underwent complete surgical excision with segmental rib resection. Histopathological examination demonstrated a well-circumscribed, collagen-rich, paucicellular spindle-cell lesion with numerous branching thin-walled vessels, consistent with angiofibroma of soft tissue. Molecular analysis identified an in-frame AHRR:NCOA2 gene fusion between exon 9 of AHRR and exon 16 of NCOA2, a hallmark alteration of this entity. The patient remains asymptomatic and recurrence-free on interval imaging. Although benign, primary chest wall angiofibroma can radiologically mimic malignancy owing to its vascularity and avid contrast enhancement. Recognising its characteristic clinicopathological and molecular features is essential to avoid unnecessary radical resections or biopsy-related bleeding. Complete margin-negative excision is curative, and documentation of such atypical presentations broadens clinical awareness of this under-recognised tumor.

Keywords

chest wall, angiofibroma, benign tumor, surgical excision, histopathology, AHRR:NCOA2 fusion

Biography

Dr. Supraja Ramesh is a Junior Clinical Fellow in Cardiothoracic Surgery at University Hospitals Coventry and Warwickshire NHS Trust, United Kingdom. She completed her MBBS with first-class honors and distinctions in multiple subjects. Her clinical experience spans neuro-critical care, trauma, emergency medicine, and surgical specialties, providing a broad foundation in acute and peri-operative care. She has authored case reports, led clinical audits, and established a structured teaching programme for junior doctors. Her interests include thoracic oncology, surgical innovation, peri-operative optimisation and surgical education, with a long-term goal of pursuing surgical training and academic research.