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CASE REPORT

An Unexpected Diagnosis: Intramuscular Myxoma of Biceps Brachii

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Abstract

A 50-year-old woman presented with a longstanding, painless right upper arm swelling. Imaging and FNAC suggested a spindle cell neoplasm. Surgical excision revealed a well-circumscribed intramuscular mass. Histopathology and immunohistochemistry confirmed myxofibroma (intramuscular myxoma). The postoperative course was uneventful, with no recurrence at one-year follow-up. Intramuscular myxomas are rare benign tumors requiring surgery only for symptomatic relief. Long-term follow-up is essential due to recurrence risk and to exclude misdiagnosed myxofibrosarcoma.

Keywords: Intramuscular Myxoma, Soft Tissue Neoplasms, Upper Extremity

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Case report

A 50-year-old lady presented with a hard, non-tender swelling of 9cm X 8 cm fixed to the underlying muscle over the right upper arm with occasional pain over the swelling for more than 3 years (Figure 1). Fine needle aspiration cytology was reported as a spindle cell neoplasm. X-ray of the right upper arm showed no bony involvement. CT scan of the lesion showed a large hypodense, well-defined soft-tissue density involving the intermuscular plane over the right proximal forearm, with a provisional diagnosis of either a soft tissue sarcoma or a peripheral nerve sheath tumour (Figure 2).

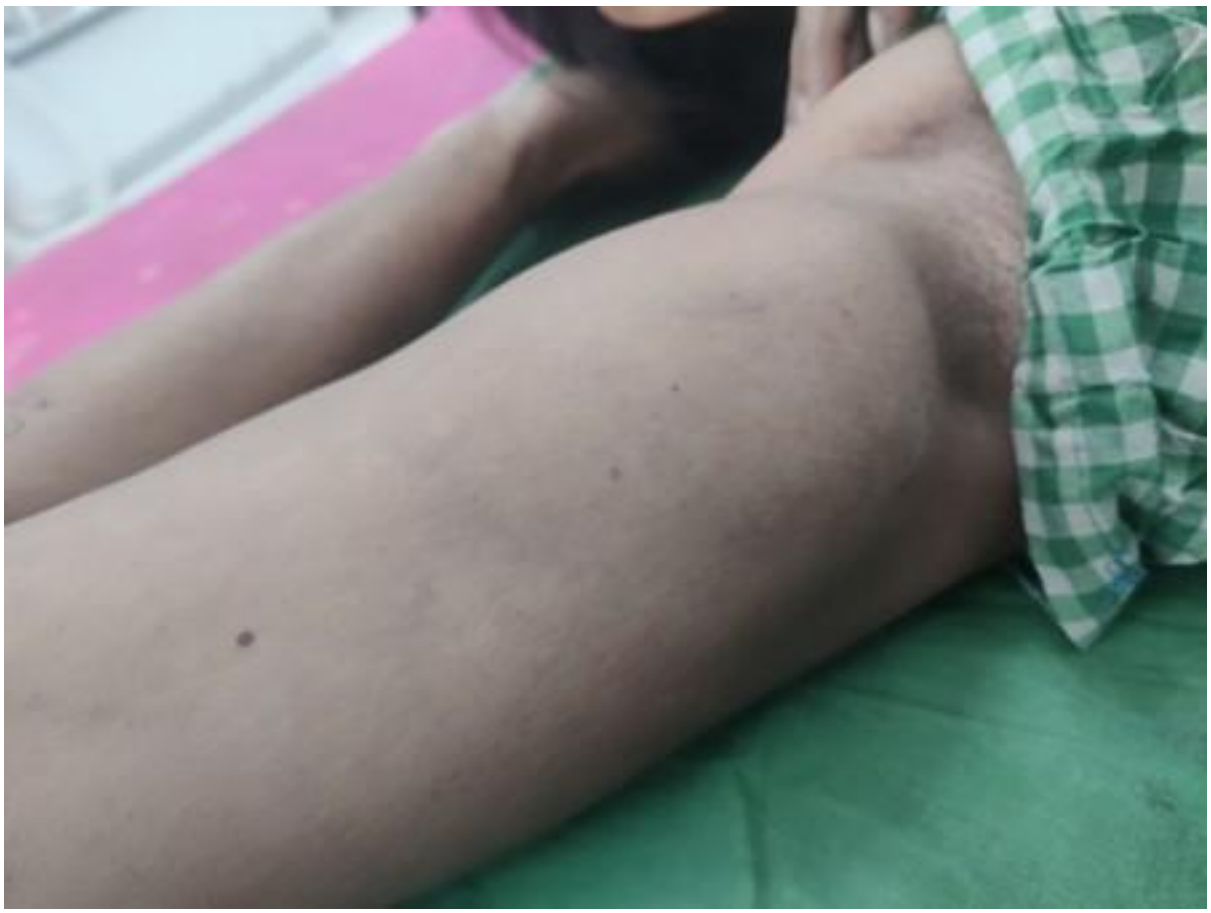

Figure 1. Intramuscular myxoma right upper arm

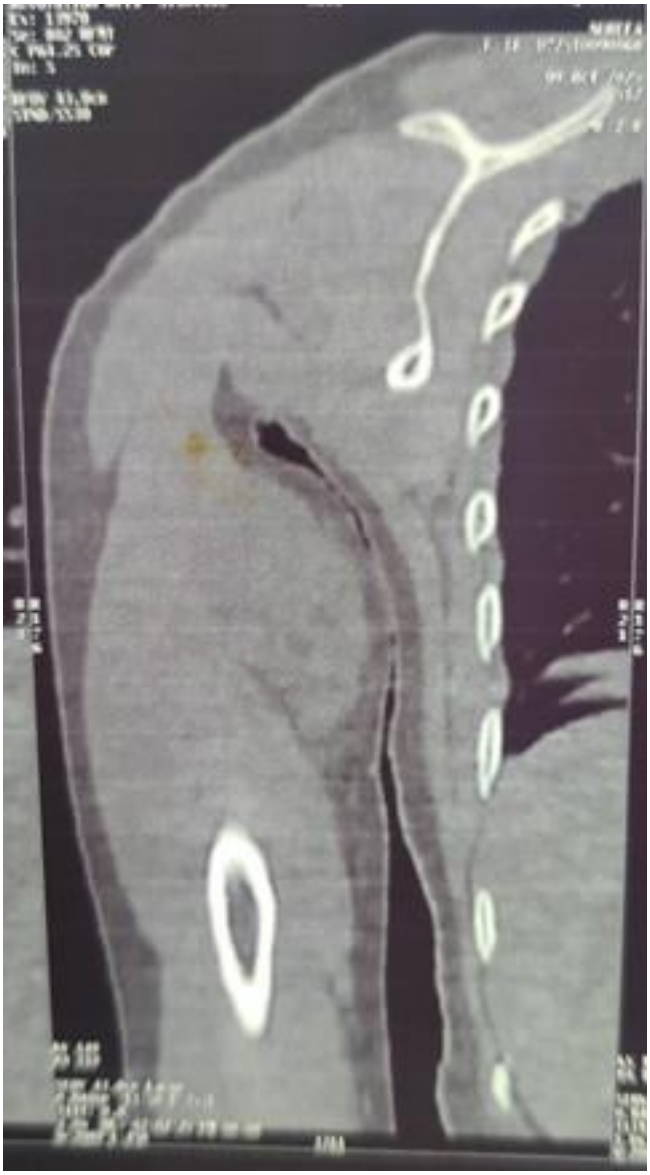

Figure 2. CT scan showing a hypodense lesion of intramuscular myxoma

The patient underwent surgery under general anaesthesia, and the entire swelling in the muscular plane of the short head of the biceps brachii was excised and sent for histopathology (Figure 3). The lesion appeared as a solid, well-circumscribed, encapsulated mass, and it was easily removed during surgery (Figure 4). The postoperative course was uneventful. The histopathology report was a myxoma of the right upper arm, which on immunohistochemistry showed Alpha-smooth muscle actin (SMA) diffusely positive, while S100 was negative (Figure 5). The final diagnosis was myxofibroma of the upper limb extremity. The patient has been followed up for 1 year.

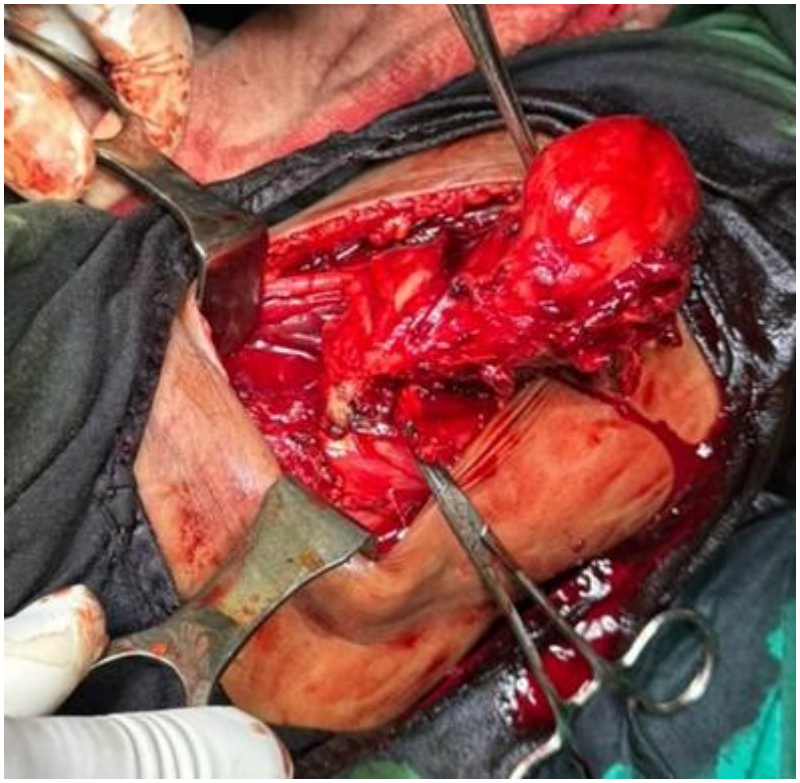

Figure 3. Intraoperative pic of Intramuscular myxoma excision from Biceps brachii

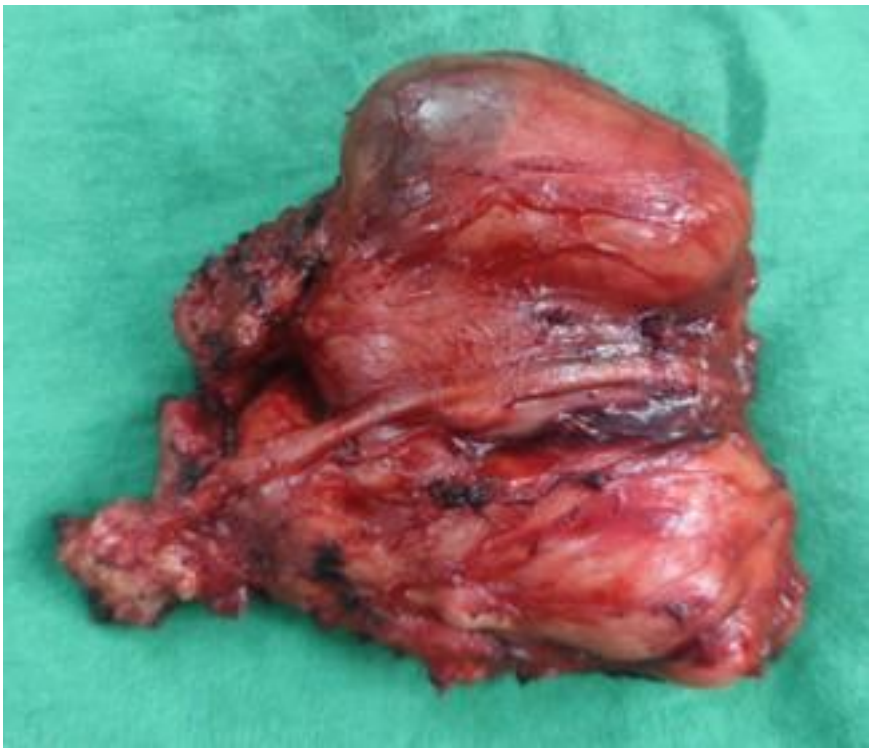

Figure 4. Resected specimen of Intramuscular myxoma

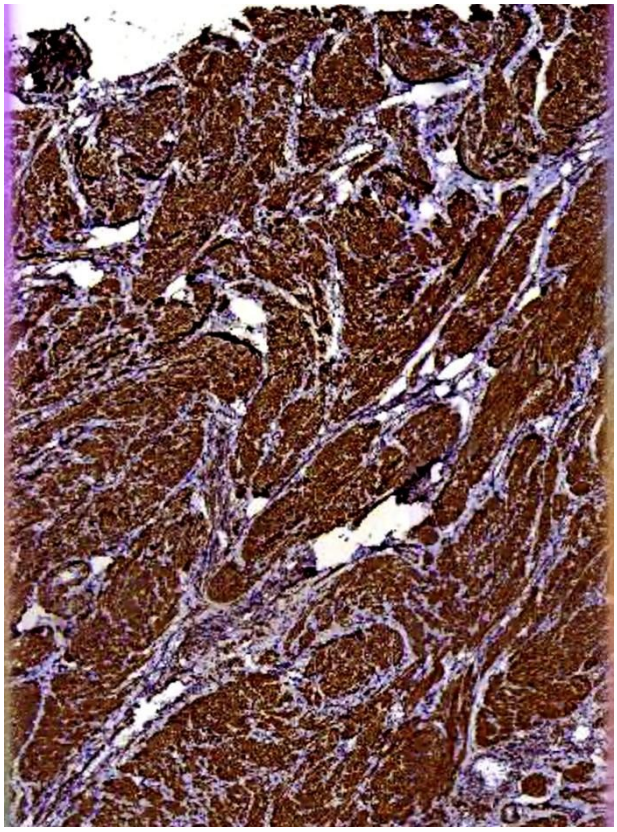

Figure 5. Immunohistochemistry showing SMA diffusely positive and S100 negative

Discussion

Intramuscular myxoma (IMM) is an extremely rare, benign soft-tissue tumor with a reported incidence of 0.1 to 0.13 per 100,000 population [1]. This is a very rare benign soft tissue tumour originating from mesenchymal tissue and confined within skeletal muscle. It is a hypocellular, hypovascular neoplasm composed of bland spindle or stellate cells embedded in abundant myxoid stroma without nuclear atypia, mitotic figures, or necrosis. It is often referred as Cellular Myxoma**.** The incidence is mostly seen over the large muscles of the thigh in 50–60% of cases and over the shoulder and upper arm in 9% to 11% cases. IMM can be solitary or multiple, but when associated with fibrous dysplasia, it is called Mazabraud syndrome [2]. Mazabraud syndrome is associated with postzygotic mutations in the GNAS1 gene on chromosome 20q13.2-q13.3. The management of IMM is usually conservative, and surgery is indicated only if they cause pain, pressure symptoms, neurological symptoms, or interferes with functionality. The most common postoperative complication of myxomatous surgical excision is recurrence, which occurs in more than 30% of cases at a median of 8.5 years, which mandates a long-term follow-up.

The differential diagnosis of IMM is low-grade myxofibrosarcoma, which has characteristic curvilinear vessels with perivascular condensation of cells around vessels. Distinction may be very challenging in small biopsy specimens. There may be variable nonspecific cytogenetic aberrations (83%), no *GNAS1* activating mutations.

Another differential diagnosis is Nerve sheath myxoma, which is typically superficial, not intramuscular. The periphery has parallel rows of spindle cells with wavy nuclei representing the nerve. Typically has diffuse expression of S100, SOX10

Rudolf Ludwig Carl Virchow was the first person to use the term 'myxoma' in 1871 when he found that the pathology resembled the mucinous substance of the umbilical cord [3]. Arthur Purdy Stout defined the strict histological criteria for these tumors in 1948, describing them as neoplasms composed of undifferentiated stellate cells in a hypovascular, myxoid stroma. The long-term follow-up is necessary in view of the recurrence or an error in the initial histopathology report, missing out myxofibrosarcomas [4]. The duration between the initial excision and recurrence in benign cases is generally 2 years, but if it occurs early, a more aggressive pathology has to be ruled out. It is widely established in medical literature that IMM do not show potential for malignant transformation and do not have a tendency to metastasize.

The case report gains importance as IMMs are rare benign tumors that often are missed, being diagnosed with fine needle aspiration cytology, and should be subjected to immunohistochemistry and GNAS mutation analysis for the final result. A complete excision, along with long-term follow-up, is mandatory to prevent recurrence.

Conclusion

Intramuscular myxoma of the biceps brachii is a rare benign entity that can mimic malignant soft tissue tumors on clinical and radiological evaluation. This case highlights the limitations of FNAC and the importance of complete surgical excision followed by definitive histopathology and immunohistochemistry. Awareness of this entity helps avoid overtreatment. Although prognosis is excellent, long-term follow-up remains essential to detect recurrence and to exclude misdiagnosis of low-grade myxofibrosarcoma.

Authors contribution

Conception and design of the study, KB, SS, MK; Acquisition of data, KB, AN; Drafting of the article, KB, AD, BH; Critical revising; KB, SS, MK, AD; Final approval, KB, SS, MK, AD, BH, AN

Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

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Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Informed Consent

Informed consent has been taken from the patient for publication of the case for academic interest only.

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