



## Unusual presentation of nodular fasciitis of the hand A case report

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**Nodular fasciitis is a benign fibroblastic tumour that does not commonly occur in the hand and generally does not exceed 5 cm in size. Given the characteristics of this entity, it demands a differential diagnosis with malignant tumours and infectious processes. We present an unusual case of nodular fasciitis in the palm of the hand, producing a lesion larger than any similar lesion reported previously in this location.**

**Keywords:** benign soft-tissue tumour ; hand tumour ; nodular fasciitis.

### INTRODUCTION

Nodular fasciitis is an infrequent benign fibroblastic tumour characterized by rapid growth, a feature that requires its differentiation from other less benign tumorous lesions. Although half of the cases of nodular fasciitis arise in the upper extremity, location in the hand is extremely uncommon (3,4,6,7,8,9), and the lesions do not commonly exceed 5 cm in size (1). We describe a case of nodular fasciitis presenting as a huge mass affecting the entire palm and ulnar edge of the hand.

### CASE REPORT

A 21-year-old woman of Arabic origin had undergone surgery in another hospital 3 years previously, to remove a tumour approximately 2 × 1 cm in size in the palm of her right hand. The

lesion was resected, but histopathological study of the surgical specimen was not performed.

Five months later, the tumour had relapsed and was exhibiting rapid growth. A diagnostic biopsy was performed and the findings were consistent with a diagnosis of sarcoma of the fusiform cell type. Given the aggressive characteristics of the lesion, radical treatment consisting of amputation of the hand was recommended. The patient refused on religious and cultural grounds. She consulted at our hospital ten months after the index surgery, The mass had grown considerably (9 × 8 × 5 cm), affected the palm and the ulnar edge of the hand, and showed ulcerations of the skin (fig 1). The

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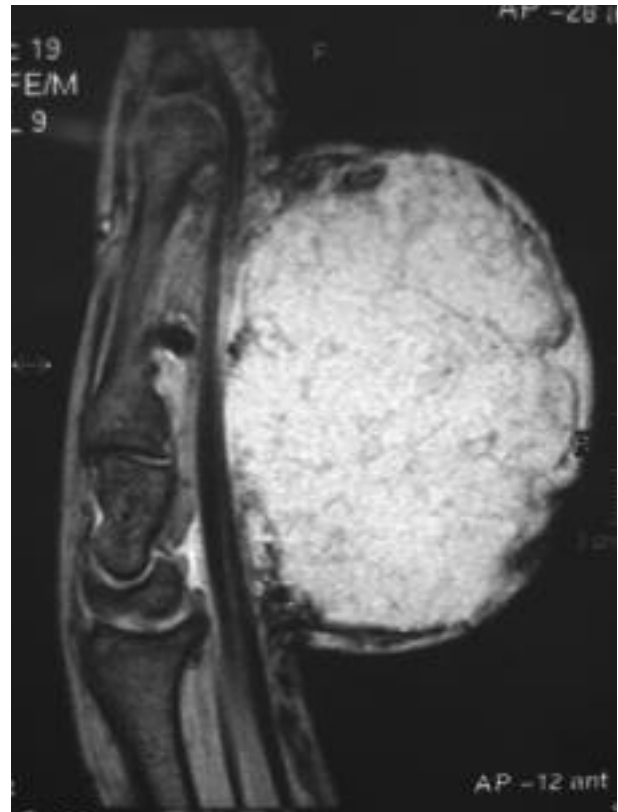


**Fig. 1.** — Clinical image of the mass, which limited flexion of the wrist for mechanical reasons. Note the cutaneous ulcerations.

patient reported faster growth in the last few weeks. She showed a mechanical limitation when flexing the wrist, due to the size of the mass. No alteration of the nerves of the fingers or the intrinsic musculature of the hand was observed.

Magnetic resonance imaging demonstrated a well-delimited mass extending to the periosteum of the little finger with no infiltration of the flexor tendons, but with displacement of the deep and superficial flexors of the same finger (fig 2). The mass did not seem to affect the median nerve or the ulnar nerve, although the superficial fibers of the latter were in close contact with the tumour. Angiography showed considerable arterial vascularization of the lesion. The bone scan was consistent with a soft tissue lesion that met the criteria for malignancy (huge, highly vascularized tumour), but there was no distant bone involvement. Chest and abdominal CT scans showed no evidence suggesting systemic spread was detected.

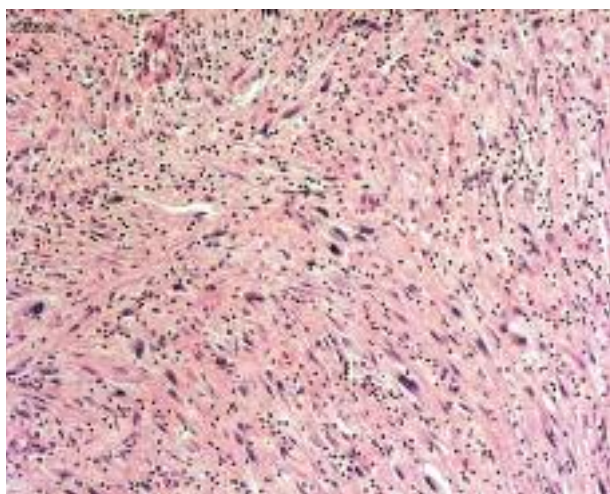
The diagnosis was oriented towards soft tissue sarcoma and radical surgery with amputation of the hand was again recommended and again refused. Hence, complete removal of the injury and subsequent cutaneous cover with the collaboration of plastic surgeons was decided. Before surgery, the arteries feeding the tumour were embolized to facilitate removal of the mass.



**Fig. 2.** — MRI aspect: T2-weighted image of the tumour showing absence of involvement of the flexor tendons and absence of deep infiltration by the mass.

Intraoperative biopsy and analysis was performed and possible soft tissue sarcoma was reported. We proceeded to remove the lesion together with the ulnar neurovascular bundle, which was encompassed by the mass. The cutaneous cover was carried out with an inguinal pedicled flap, which was divided after 3 weeks.

The definitive pathological report described an  $11 \times 8 \times 7$  cm lesion consistent with nodular fasciitis of the fascial type. Sarcoma was ruled out (fig 3). As a consequence of surgical removal of the ulnar nerve at the level of the Guyon tunnel, the patient developed an ulnar claw deformity with loss of the interosseous musculature and impossibility to adduct the thumb, together with anaesthesia in the ulnar area of the hand. She denied further palliative surgery. At 18 months follow-up, no local recurrence was detected.



**Fig. 3.** — Morphological pattern (HE, 100×) showing fusiform cells with a fibroblastic-myofibroblastic appearance, and forming lax intertwined bundles. Nuclear pleomorphism without atypia or mitoses. There is a diffuse chronic inflammatory component.

## DISCUSSION

Nodular fasciitis is a fibrous proliferation composed of fibroblasts and myofibroblasts, usually arising in the subcutaneous cellular tissue, although several cases of intramuscular localisation have been described (1,6). It typically occurs in young individuals and shows no predilection for either sex. The most common locations are the upper extremity (50%) (6), the trunk, head and neck. The lesions do not generally exceed 2 cm in size and are almost always less than 5 cm (1). Clinically, nodular fasciitis is characterized by fast tumorous growth, sometimes accompanied by pain. The aetiology of nodular fasciitis is unknown, although cases have been described in association with trauma at the site of the lesion.

On macroscopic inspection, the tumour has a circumscribed or infiltrative appearance, but is not encapsulated. On cross-section, it has a myxoid or fibrous aspect and, occasionally, central cystic changes. The microscopic features include fibroblasts or myofibroblasts which adopt a spindle configuration. Extravasated red blood cells, chronic

inflammatory cells, and huge multinuclear cells are common. There is also an important network of minor vessels. The peripheral border of the lesion is usually well delimited, but it can be infiltrative, typically with peripheral extension between the fatty cells of the subcutaneous cellular tissue or muscle fibers. Some cases of bone metaplasia have been described, and are termed ossifying fasciitis (5). Because of its rapid growth, rich cellularity with high mitotic activity, and occasionally unclear peripheral border, the mass can be interpreted as a sarcomatous lesion. Nonetheless, mitoses showing no atypia and absence of any other histopathological cellular features of malignancy can orientate the diagnosis to its benign nature.

The lesions of nodular fasciitis do not metastasize. Recurrence after surgical removal is rare and has been sporadically described after incomplete removal. For this reason, recurrence requires reconsideration of the primary diagnosis.

The differential diagnosis must be made with other spreading lesions such as neurofibroma, aggressive fibromatosis, dermatofibroma, fibrosarcoma and malignant fibrohistiocytoma.

The particularities of the case described lie in the location and size of the lesion. Presentation in the hand rarely occurs (7), with a few cases being reported in the fingers (4,9) and another in the palm of the hand, but all of small size (2,3).

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