

Case Report

Nodular Fasciitis of the Hand - A Potential Diagnostic Pitfall in Fine Needle Aspiration Cytology

Mardi K*, Sharma J+, Kaur H#

Abstract

Nodular fasciitis is an uncommon, benign myofibroblastic soft tissue tumour. It is infrequently seen in the hand. A case of nodular fasciitis involving the thumb of a 4-year-old male child is presented. Main significance lies in clinical and pathological recognition of the lesion to avoid over-treatment. Nodular fasciitis remains a difficult diagnosis by fine needle aspiration cytology, particularly when it occurs in locations such as the hand.

Journal of Cytology 2007; 24 (4) : 197-198

Key Words : Nodular fasciitis, hand, thumb, FNAC.

Introduction

Nodular fasciitis is a benign myofibroblastic proliferation in soft tissue that is frequently misdiagnosed as a sarcoma. Most patients are middle aged, and the upper extremity is the most common localization. Nodular fasciitis is rarely diagnosed in childhood but appears in the head and neck region more commonly in children than in adults.¹ We present cytomorphological features of nodular fasciitis in a 4 year old male child, presenting with a nodule over

the right thumb.

Case Report

A 4 year old child presented with a 2-week history of a rapidly growing, painful, 2cm subcutaneous, tender nodule over the right thumb. Fine needle aspiration cytology (FNAC) of the nodule was done. Microscopic examination showed cellular smears revealing pleomorphic population of tumour cells in a myxoid background (Fig 1). The tumour cells were varying widely from spindle shaped with long cytoplasmic processes to more plump cells with abundant basophilic cytoplasm and round to oval eccentrically placed nuclei (Fig 2). The nuclear chromatin was evenly distributed and finely

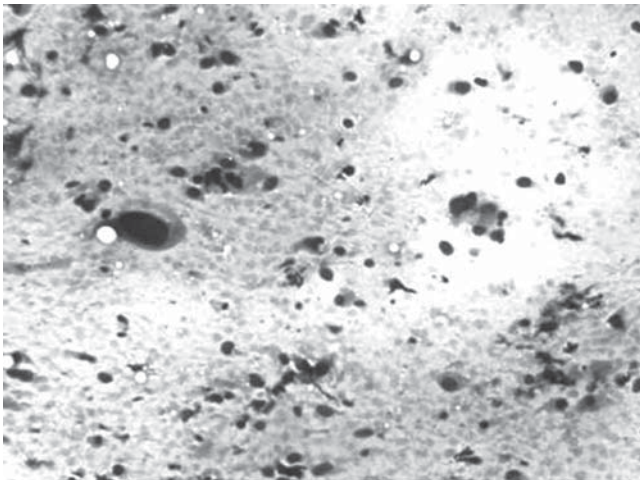


Fig. 1 : Microphotograph showing isolated pleomorphic tumour cells in a myxoid background (Giemsa, x 200).

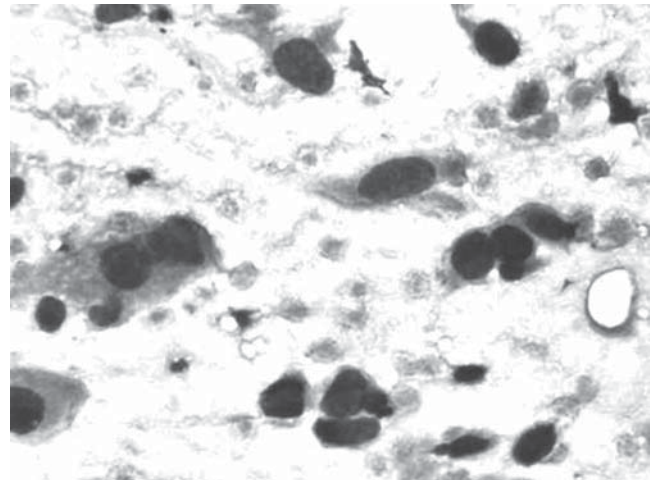


Fig. 2 : Microphotograph showing pleomorphic spindle cells as well as plumper cells with abundant cytoplasm (Giemsa, x 200).

*Assistant Professor, *Professor and Head, #Senior Resident; Department of Pathology Indira Gandhi Medical College, Shimla.

Received : 03.05.2007; **Revised :** 15.10.2007; **Accepted :** 30.10.2007

Corresponding Author: Dr.Kavita Mardi, Assistant Professor, 12-A, Type V Quarters, GAD Colony, Kasumpti, Shimla, Himachal Pradesh.

E-mail: kavitamardi@yahoo.co.in

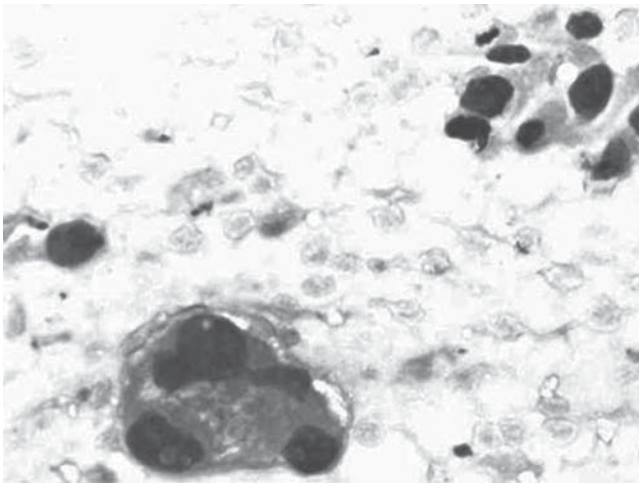


Fig. 3 : Higher magnification showing a multinucleated tumour giant cell (Giemsa, x 400).

granular with occasional one or two small nucleoli. Binucleate and multinucleate forms were also seen (Fig 3). The clinical data together with the cytomorphology were suggestive of nodular fasciitis.

Discussion

Nodular fasciitis was first described by Konwaler and Weiss² in 1955 and was called pseudosarcomatous fasciitis because of its rapid growth and histologic features.² It is a benign myofibroblastic proliferation which often begins as a solitary subcutaneous nodule that develops rapidly, reaching an ultimate size of 1-5 cm within a few weeks. The lesion is self-limited, regressing in a few months.³ The longest known duration is 26 months. Although the forearms and the arms are the most common sites, it may arise from the subcutaneous tissue, muscle or fascia at any location.⁴ It rarely occurs in the hand.⁵⁻⁷ Because of this, it is not often considered in the differential diagnosis of hand masses. Also because of its rapid growth and aggressive histologic appearance, it can be mistaken for a soft tissue sarcoma, despite its benign clinical behavior and as a result, in this location the lesion has sometimes been treated by amputation because of misdiagnosis. Cytologic diagnosis of nodular fasciitis is important since it obviates the need for surgical excision.

The etiology of nodular fasciitis is unknown. The role of trauma in initiating the lesion is doubtful. The myofibroblast is thought to be the cell of origin. Nodular fasciitis is believed to occur as an unusual proliferation of myofibroblasts triggered by local injury or inflammatory processes.⁴

The cytomorphology of nodular fasciitis is fairly characteristic, making it possible to recognize these

lesions in fine needle aspirates, as it is difficult to arrive at a correct diagnosis clinically due to lack of clear cut clinical features

Differential diagnosis includes other fibromatosis like palmar and plantar fibromatosis. However these lesions will be less cellular, predominantly consisting of spindle cells and lack nuclear pleomorphism. In addition fragments of collagen are more often seen in these lesions than the myxoid ground substance. FNA smears of extra abdominal desmoids can be quite cellular and contain single spindle cells and clusters of cells showing moderate anisokaryosis. FNA smears of early stages of nodular fasciitis may resemble schwannoma. But, schwannomas lack single, intact cells and inflammation. Schwannoma stroma is also myxoid but appears more finely fibrillar, and cell clusters are notable for alternating areas of hypercellularity and hypocellularity.

Local excision is the treatment of choice of nodular fasciitis and recurrences are rare.⁸ The condition has an excellent prognosis. Spontaneous regression has been reported. Rapid resolution of the nodule has been reported to occur with intralesional corticosteroid injection.⁴

On follow up spontaneous regression was noted in the present case also, 2 weeks after performing FNA.

References

1. Handa Y, Asai T, Tomita Y. Nodular fasciitis of the forehead in a pediatric patient. *Dermatol Surg* 2003; 29:867-8.
2. Konwaler BE, Keasbey L, Kaplan L. Subcutaneous pseudosarcomatous fibromatosis (fasciitis). *Am J Clin Pathol* 1955; 25:241-52
3. From L, Assaad D. Neoplasms, pseudoneoplasms, and hyperplasia of the dermis. In: Reedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SI, et al, editors. *Dermatology in general medicine*. 5th ed. New York: McGraw-Hill; 1999. p. 1161-75.
4. Graham BS, Barrett TL, Goltz RW. Nodular fasciitis: Response to intralesional corticosteroids. *J Am Acad Dermatol* 1999; 40:490-2.
5. Singh R, Sharma K. Nodular fasciitis of the thumb: a case report. *Hand Surg* 2004; 9:117-20.
6. Plaza JA, Meyerson J, Wakely PE Jr. Nodular fasciitis of the hand: a potential diagnostic pitfall in fine-needle aspiration cytopathology. *Am J Clin Pathol* 2005; 123:388-93.
7. Kijima H, Okada K, Shimada Y, Nanjo H, Ito H, Itoi E. Nodular fasciitis of the finger. *Skeletal Radiol* 2005; 34:121-3.
8. Odom RB, James WD, Berger TG. *Andrew's diseases of the skin: clinical dermatology*. 9th ed. Philadelphia: WB Saunders; 2000.