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Case Report

INTRAMUSCULAR NODULAR FASCIITIS (PSEUDOSARCOMATOUS FIBROMATOSIS) OF THIGH: A CASE REPORT

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ABSTRACT
Nodular fasciitis is a mass-forming fibrous proliferation that usually occurs in the subcutaneous tissue, also called as pseudosarcomatous fasciitis. It is an infrequent benign fibroblastic tumour characterized by rapid growth and most of the time requires its differentiation from other tumorous lesions.

Keywords: *Nodular Fasciitis, Benign, Pseudosarcomatous Fasciitis*

INTRODUCTION
Nodular fasciitis was first reported by Konwaler *et al.*, in 1955, who described it as subcutaneous pseudosarcomatous fibromatosis (Konwaler *et al.*, 1955). Later Price *et al.*, used the term nodular fasciitis, in 1961. Its diagnosis is often a challenge because it may be confused with a malignant tumor due to its aggressive clinical behaviour and histological features (Varshney *et al.*, 2012). We describe a case of intramuscular nodular fasciitis of thigh.

CASES
A 25-year-old female presented with 1-month history of slow growing lump with dull aching pain at lower part of right thigh. Physical examination revealed a mobile, irregularly round, firm palpable mass deeply seated in the thigh muscle, on anteriomedial aspect of lower thigh. Mass was associated with mild tenderness but no pathological change in the overlying skin.
Ultrasonography showed a homogenous hyperechoic soft tissue mass measuring 4x4cm located above the knee joint, in intramuscular plane. FNA was performed but yielded scanty material composed of occasional fragments of fibrocollagenous stromal material and was suspicious of benign spindle cell lesion. Excision biopsy was done and sent for histopathological examination. On gross examination, a well circumscribed, unencapsulated, globular greyish yellow mass (m/s 4x3x3cm) seen, attached to aponeurotic tissue, C/S- greyish yellow, with focal myxoid and central hemorrhagic areas [Figures 1 & 2].

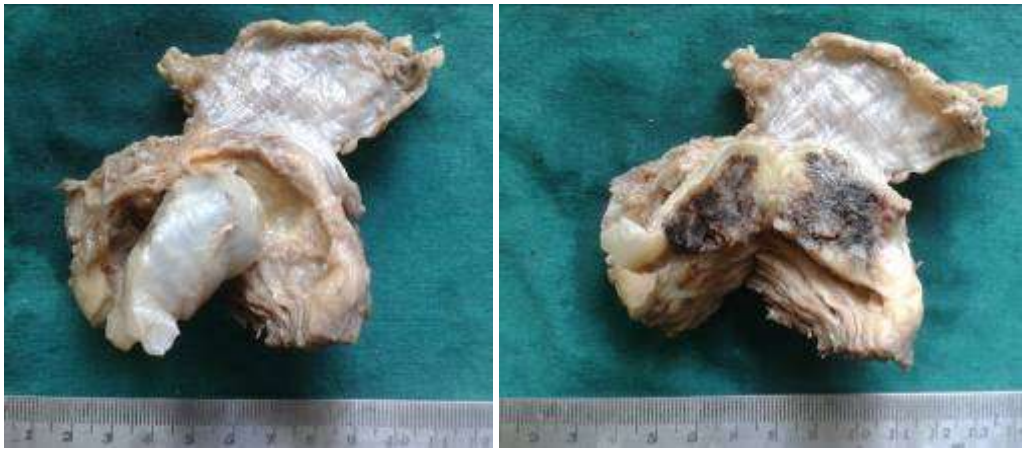
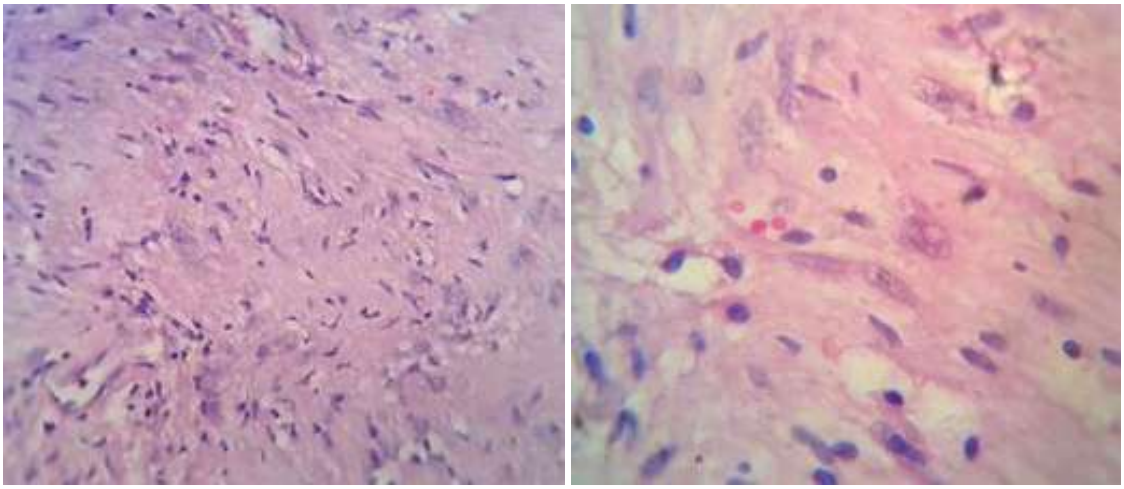


Figure 1 & 2: Intramuscular, well circumscribed, unencapsulated, globular, greyish yellow mass (m/s 4x3x3cm), with cut section showing greyish yellow, myxoid appearance and central hemorrhagic areas due to previous FNAC

Sections from lesional tissue showed benign-appearing spindle-shaped cells with bland, elongated nuclei dispersed in predominantly fibrous stroma with focal deposition of keloid type of collagen and focal myxocollagenous stroma. Tumor is interspersed with few blood vessels with extravasated RBCs, focal cystic degeneration and sparse chronic inflammatory infiltration (lymphocytes and occasional plasma cells) [Figures 3 & 4]. No evidence of necrosis, nuclear atypia or abnormal mitosis. Based on these microscopic findings, a final diagnosis of nodular fasciitis was made.



Figures 3 & 4: Plump, immature-appearing fibroblasts that are randomly arranged in irregular short fascicles with oval and pale nuclei, forming tissue culture pattern, interspersed with chronic inflammatory cells and few extravasated RBCs

DISCUSSION

Nodular fasciitis is a benign, pseudo sarcomatous proliferative lesion of the soft tissue, which is frequently misinterpreted as sarcoma, both clinically as well as microscopically (Varshney *et al.,* 2012). This lesion is most commonly diagnosed in young and middle aged adults, with a peak incidence in third and fourth decades of life (Shimizu *et al.,* 1984). Only 10% to 20% are found in those over 50 years of age (Zuber and Finley, 1994). Nodular fasciitis may occur virtually anywhere in the body, but most common site is in the upper extremity, especially the volar aspect of the forearm followed by the upper trunk then by the head and neck region (Mallina *et al.,* 2007). It typically grows rapidly and has a preoperative duration of not more than 1-2 months while the longest known duration is 26 months (Kolo *et al.,* 1997).

Nodular fascitis can be classified into three subtypes based on its anatomic location: subcutaneous, intramuscular and fascial (Krasoyec and Burg, 1999). The etiology of this benign lesion is still unknown though some patients report trauma to the site of the lesion prior to the occurrence of the tumor. One theory on its pathogenesis is due to an unusual proliferation of myofibroblasts triggered by local injury or an inflammatory process (Konwaler *et al.,* 1955).

Because of its rapid growth it can be mistaken for a soft tissue sarcoma, Cytologic diagnosis of nodular fasciitis is important since it obviates the need for surgical excision (Mardi *et al.,* 2007). Histopathologically, the lesion is characterized by a cellular spindle cell growth set in a loosely textured mucoid matrix. The fibroblasts or myofibroblasts adopt a spindle configuration. The lesion may be highly cellular, but typically it is at least partly loose appearing and myxoid, with a torn, feathery, or tissue culture-like character. Extravasated red blood cells, chronic inflammatory cells, and huge multinuclear cells are common feature of diagnostic significance. The lesion may show undulating wide bands of collagen similar to those seen in keloid scars (Kim *et al.,* 2007; Evans and Bridge, 2002; Juan, 2004).

Features like i) Absence of atypia ii) Absence of atypical mitotic figures iii) Small size iv) Short history v) Superficial location of this lesion in young adults helps to rule out malignant tumour. On

immunohistochemistry nodular fasciitis demonstrates focal smooth muscle and muscle specific actin and calponin, but not usually desmin, h-caldesmon or CD34 (Varshney *et al.*, 2012; Dahl and Jarlstedt, 1980). Local excision is the treatment of choice of nodular fasciitis and recurrences are rare (Odom *et al.*, 2000). Spontaneous regression has been reported. Rapid resolution of the nodule has been reported to occur with intralesional corticosteroid injection (Graham *et al.*, 1999).

Conclusion

Nodular fasciitis is a benign fibroblastic tumour characterized by rapid growth and requires its differentiation from other less tumorous lesions. It can pose diagnostic dilemma for pathologists due to its histological similarity with other soft tissue tumors of fibroblastic/myofibroblastic differentiation. Careful microscopic evaluation with clinical correlation required to differentiate this entity from other lesions to prevent unnecessary work ups and over treatment.

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