LETTERS TO THE EDITOR PEER REVIEWED | OPEN ACCESS

An interesting fine needle aspiration cytology diagnosis: Fibrosarcoma in an adolescent boy

S. B. Ingle, Chitra R. Hinge Ingle

To the Editors,

Fibrosarcoma (FS) accounts for about 3% of all soft tissue sarcomas. Fibrosarcoma (fibroblastic sarcoma) is a malignant mesenchymal tumor derived from fibrous connective tissue and characterized by the presence of immature proliferating fibroblasts or undifferentiated anaplastic spindle cells in a storiform pattern. It is usually found in males aged 30 to 40. It is now more reliably distinguished histologically from similar lesions, such as desmoid tumors, malignant fibrous histiocytoma, malignant schwannoma, and high-grade osteosarcoma. Herein, we are reporting an unusual case of fibrosarcoma in an adolescent young boy, diagnosis of which was made on fine needle aspiration cytology (FNAC) and confirmed by immunohistochemistry. After wide (radical) excision followed by chemotherapy, patient is doing well until date on follow-up since last six months.

A 20-year-old male was admitted in YCR hospital, Latur with a complaint of swelling over right thigh, which was gradually increasing in size since last one year. The swelling was subcutaneous measuring 4x4 cm in size, mobile not fixed to deeper tissue and skin. Ultrasonography was suggestive of benign soft tissue tumor fibroma. The FNAC was planned and performed. Cytology revealed malignant oval to spindle shaped cells with features of high grade cytological atypia and reported as spindle cell sarcoma (Figure 1). In view of young age; core biopsy was performed and sent to histopathology department to confirm the diagnosis. The core biopsy showed malignant spindle shaped cells arranged in storiform pattern with pronounced nuclear atypia and foci of myxoid change. There was no evidence of necrosis and increased mitotic activity (Figure 2). The tumor cells expressed CD 34 (Figure 3) and were immunonegative for desmin, SMA and S-100 protein. Thus, the case was finally diagnosed as fibrosarcoma and treated with radical excision followed by chemotherapy and doing well until date on follow-up since last six months.

Conventional FS accounts for only 1–3% of sarcomas arising from soft tissues falls into two main groups, the adult and infantile types, both very uncommon. Adult FS usually appears in the fourth to sixth decades of life as a painful, deep-seated mass [1, 2]. Fibrosarcoma is malignant mesenchymal tumor of fibroblast. Although it can occur in any location, the extremities are the most commonly affected site [3].

Fibrosarcomas are commonly tumors of adults, although they can occur in any age group and even can be present as congenital neoplasm [4].

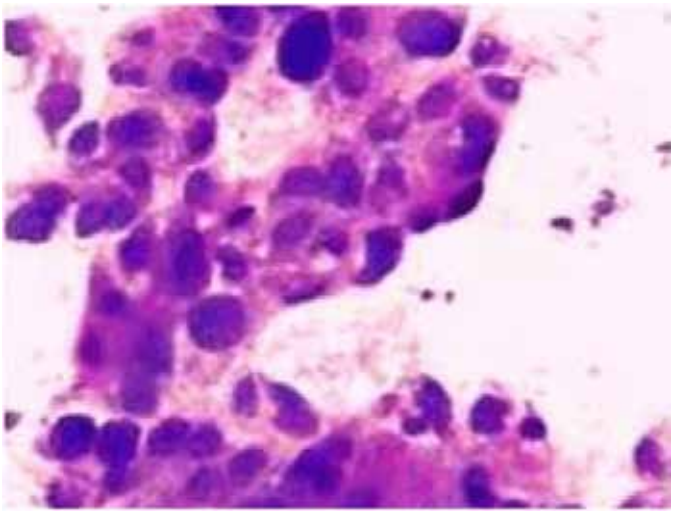

Figure 1: Malignant oval to spindle cells with marked cytological atypia (H&E stain, x100).

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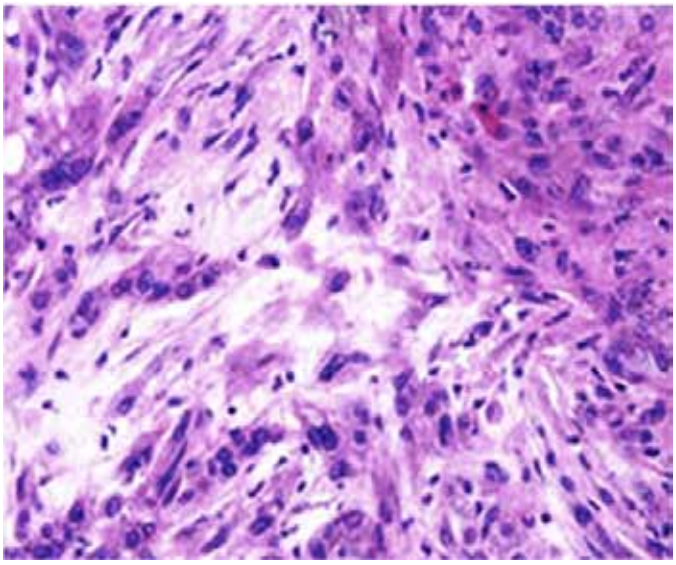

Figure 2: Malignant spindle shaped cells arranged in storiform pattern.

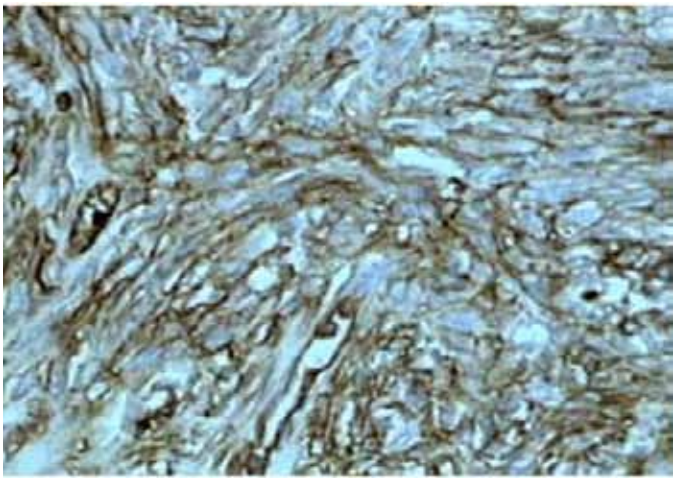

Figure 3: Showing CD 34 immunopositive tumor cells.

The classical fibrosarcoma has been characterized microscopically by uniform spindle cells distributed in interlacing fascicles with herringbone growth pattern. In case, the lesion classically composed of pleomorphic spindle-shaped cells arranged as bands or interweaving fascicles with variable collagen and focal myxoid change. Mitosis may be sparse or plentiful. The integral vascularity of fibrosarcoma with lack of proper endothelial lining has been emphasized as a differential point. In differential diagnosis, reactive fibromatosis, fibroblastic osteogenic sarcoma, pseudosarcomatous fasciitis, malignant peripheral nerve sheath tumor and cellular alveolar sarcoma must be excluded. The positive immunostaining for vimentin and CD 34 together with negativity for muscular immunomarkers will help establishing the diagnosis of the fibrosarcoma [5, 6].

The treatment of choice is radical excision with adjuvant chemotherapy and or radiotherapy (If margins are involved) [5, 7].

To conclude, the case is unusual in its clinical presentation as it occurred in a young boy. The oncosurgeon and cytologist should not miss such cases. Meticulous FNAC examination is an effective diagnostic tool to avoid untoward complications related to disease and treatment for the sake of accurate pathological diagnosis. This case clinically mimics benign but incidentally diagnosed as fibrosarcoma. So FNAC of each lump is mandatory must irrespective of age and clinical presentation of the patient

Keywords: Connective tissue, Fibrosarcoma, Fibroblastic sarcoma, Mesenchymal tumor

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Author Contributions

S. B. Ingle – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Chitra R. Hinge Ingle – Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

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Conflict of Interest

Authors declare no conflict of interest.

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