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Metastasis Of Sarcoma To Supraclavicular Lymph Node- A Rare Phenomenon

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Abstract
Lymphatic metastasis of sarcomas is considered rare as the most common route of metastasis for sarcomas is hematogenous. The overlapping histomorphology of sarcomas can often be very challenging. A case has been reported of a 77year old female with chief complaints of dysphagia who underwent lymph node biopsy of supraclavicular lymph nodes showing metastasis of sarcoma with an unknown primary.
Keywords*:Sarcoma, metastasis*

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I. INTRODUCTION

Soft tissue tumorsare large and heterogenous entities comprising nonepithelial elements including connective tissue, skeletal muscle, adipose tissue, blood vessels, and lymphatic vessels(1).

These are mainly derived from mesoderm with very little contribution from neuroectodermal elements (1). Sarcomas generally metastasize through hematogenous routesand are very rarely known for their metastasis through lymphatic channels and have been reported in less than 5% of cases (2,3,4,5). Lymphatic metastasis of a tumor indicates biological aggressiveness and higher chances of recurrence(5). It is often associated with poor prognosis(3,6). The routes of metastasis of a tumor depend on the site, blood, and lymphatic supply, the tendency of the tumor to invade, histomorphology, and grade of the tumor (7,8).Soft tissue tumors are one of the most intriguing tumors to identify and classify on histomorphology. Most of these tumors require an immunohistochemical approach to reach a conclusive diagnosis.

II. CASE REPORT

A 77year old female came to surgery OPD with complaints of difficulty in swallowing solids more than liquids, change in voice pattern, and breathlessness for 15 days. The patient had been suffering from bilateral knee arthritis for the past 5 years. She has no other significant history of diabetes, hypertension, or asthma. There was no history of fever, nausea, vomiting, chest pain, weight loss, cough, and pain in the abdomen. The patient had undergone surgery for the excision of an abdominal lump 20 years back and she has been catheterized with foleys for 1 year. The patient is moderately built, conscious, and well-oriented to time, place, and person. On further clinical examination, cervical lymph nodes on the left side were enlarged. There was no pallor, cyanosis, edema, icterus, or clubbing. Her systemic examination of the cardiovascular system, respiratory system, and abdomen was normal. The patient came with outside reports of neck sonography and FNAC. USG of the neck suggested evidence of metastasis and small subcentimeter-sized benign thyroid nodules bilaterally (TIRADS I). The Fine needle aspiration cytology report on the cervical lymph node showed good cellularity with many lymphocytes and many sheets of the compactly arranged spindle to oval cells with hyperchromatic spindle nuclei and scanty cytoplasm. Features were suggestive of metastasis of undifferentiated malignancy? metastasis of sarcoma. The patient was further investigated in our hospital. CECT Neck was done

which suggested evidence of multiple heterogeneously enhancing lymph nodes in the left upper and lower posterior triangle of the neck and a large enhancing supraclavicular lymph node measuring 1.7 X 1.6 cm in dimension. Impression suggested metastatic lymphadenopathy in the left posterior triangle and left supraclavicular region.We received a cervical lymph node measuring 2.5 x 2 x 1.7 cm in the histopathology section. The lymph node was grossed and sections were stained and observed under microscopy. The H &E stainedsections revealed spindle cellsarranged in bundles and fascicular pattern. The cells were elongated and tapered at the ends with moderate amount of cytoplasm, the nuclei were highly pleomorphic with dispersed chromatin and prominent nucleoli. Section also showed necrosis and plenty of mitotic figures. On histopathology, the case was suspected to be of metastasis of sarcoma or spindle cell variant of squamous cell carcinoma(9)[Figure 1, 2 & 3].

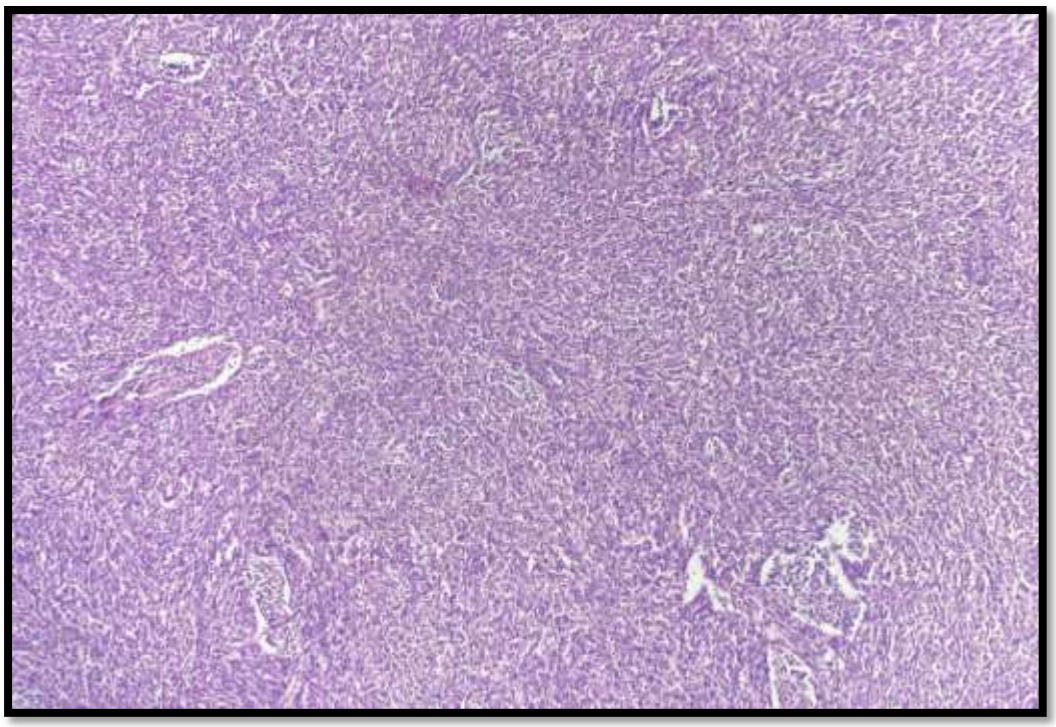

Figure 1: H & E; 10x; Sarcoma metastasis in Lymph node – Section shows spindle-shaped cells arranged in fascicles

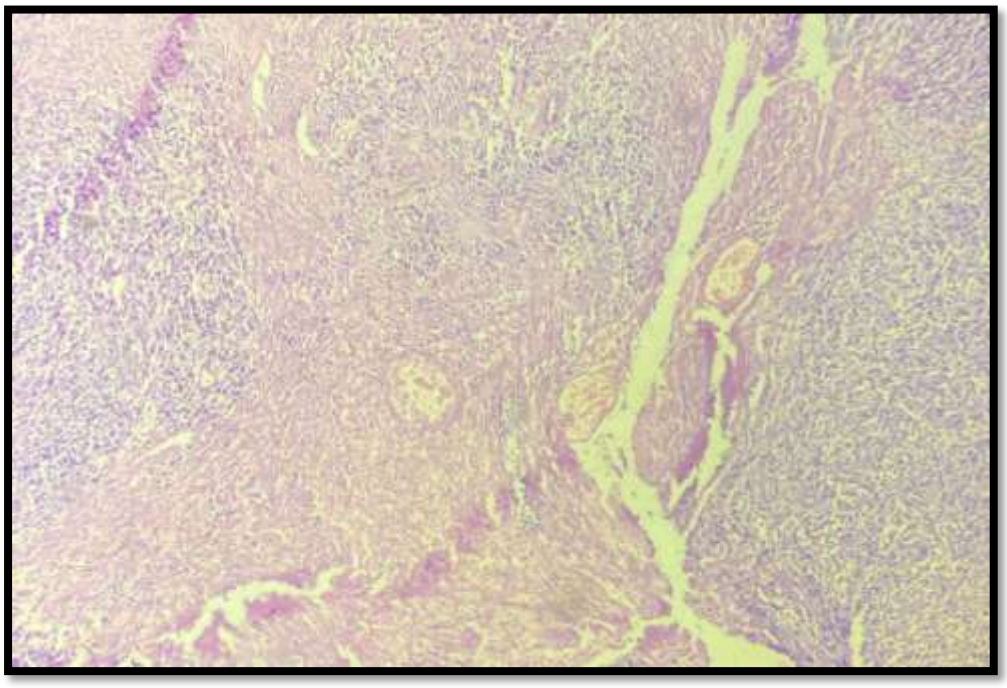

Figure 2: H & E; 10x; Sarcoma metastasis in Lymph node – Section shows tumor cells surrounding the necrotic areas.

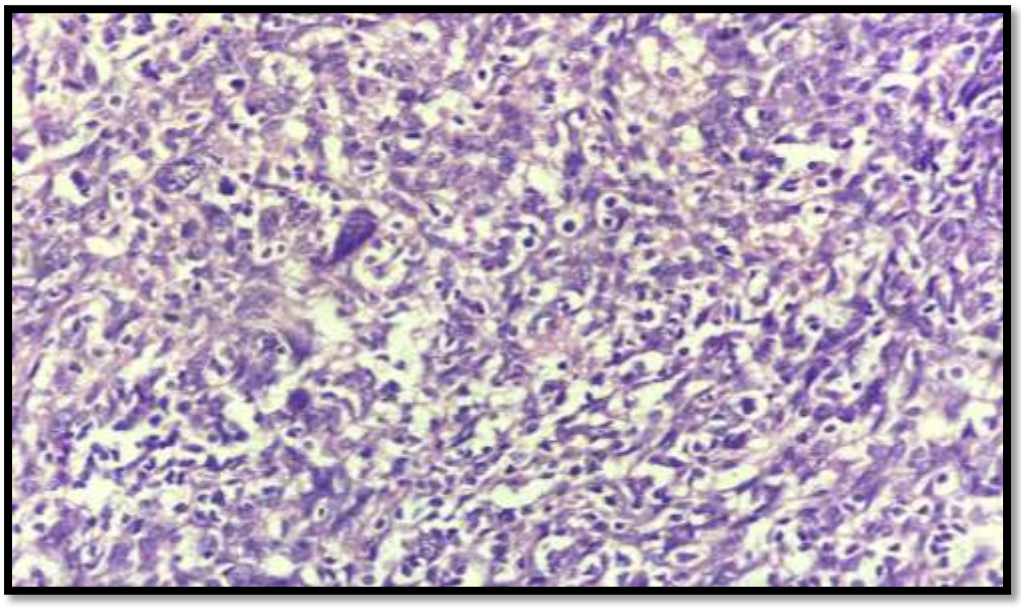

Figure 3: H & E; 40x; Sarcoma metastasis in Lymph node – Section shows spindle-shaped cells with moderate amount of cytoplasm. Nucleus is highly pleomorphic with prominent Nucleoli. Few mitotic figures are also seen.

***Figure 4* :**IHC ; 10X ; Cytokeratin : Negative staining

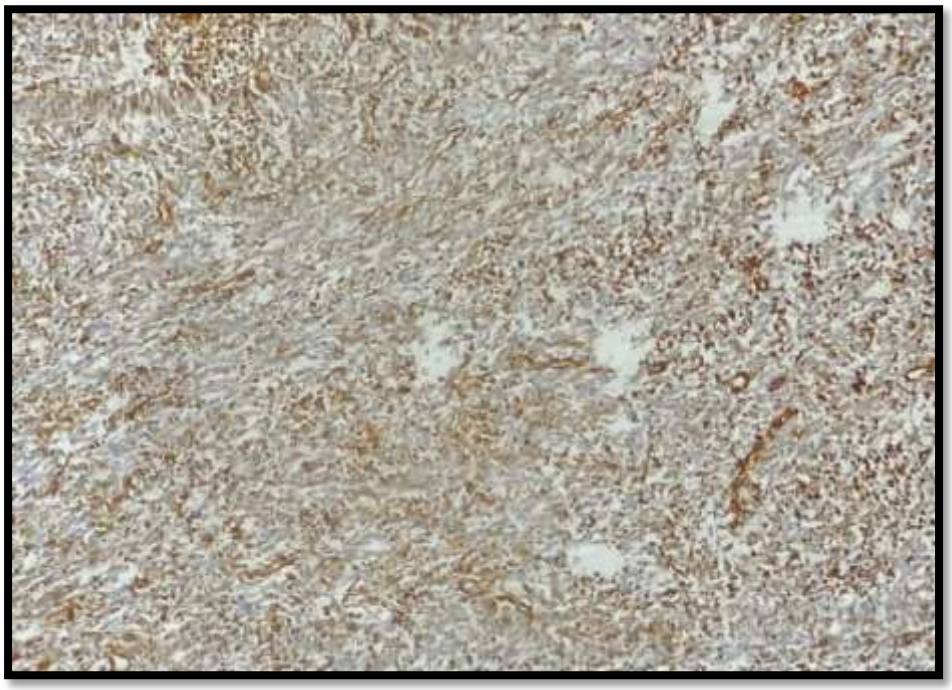

Figure 5 :IHC ; 10X ; Vimentin: Positive nuclear staining

Since the primary site of carcinoma was unknown we further performed immunohistochemistry using cytokeratin-19 and vimentin. The staining for cytokeratin came negative while vimentin showed positive nuclear staining (Figures 4 & 5).
unwilling to undergo any further investigations and opted for discharge against medical advice. Hence the primary origin of sarcoma was not diagnosed in our setup.

III. DISCUSSION

Sarcomas are a complex group of neoplasms accounting for around 21% of pediatric patients and less than 1 % in adults (10-11). Age is one of the determinant factors for soft tissue sarcomas as they are commonly seen in the pediatric age group. They are more commonly seen in soft tissues [87%] as compared to bone tumors [13%] (10).

Soft tissue sarcomas usually metastasize via hematogenous routes and very rarely by the lymphatic route hence lymph node examinations are frequently missed on clinical examinations (5).

Gandhi et al (3)conducted a cytomorphological study on 326 cases of which 21 cases were diagnosed as soft tissue sarcoma with lymph node enlargement; 19 cases showed involvement of soft tissue sarcoma in lymph nodes. Out of all the cases, rhabdomyosarcoma was the most common soft tissue tumor to metastasize to lymph nodes followed by synovial sarcoma. Very rarely metastasis was seen in cases of leiomyosarcoma, epithelioid sarcoma, MFH, and liposarcoma.

Riad et al (2) studied the impact of lymphatic metastasis of soft tissue tumorson patient prognosis and survival. 39 patients that were diagnosed with lymph node metastasis had a 5-year survival rate of 47%. 30 cases that underwent surgical resection had a 5-year survival rate of 57% and all those treated with palliative therapy died in less than 30 months of the diagnosis.

Fong et al(4)analyzed data from 1772 patients with sarcoma. In this study, lymphatic metastasis was most commonly seen in cases of angiosarcoma(13.5%), embryonal rhabdomyosarcoma(13.6%), and epithelioid sarcoma(16.7%). Lymphatic metastasis from malignant fibrous histiocytoma was associated with poor prognosis. The cases that were treated with radical lymphadenectomy had a median survival rate of 16.3 months as opposed to the cases that did not undergo lymphadenectomy with median survival rate of 4.3 months.

In the case presented here, we had an enlarged supraclavicular lymph node with metastasis of sarcoma. The primary origin of the tumor was unknown to us and the only significant history we had was that patient complained of dysphagia and hence pointing towards the diagnosis of oesophageal soft tissue tumor.

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