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Case Report

Painless Right Arm Swelling in a Female: A Case Report

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ABSTRACT

Rhabdomyosarcoma (RMS), originated from skeletal muscle, is the most common soft tissue sarcoma encountered in childhood and adolescence, although varies considerably in frequency and type among different age groups. The common sites of occurrence are the head and neck region, genitourinary tract, retroperitoneum and to a lesser extent, the extremities. RMS involving extremities is rare, particularly involving small muscle groups. Here, we reported a rare case of embryonal RMS arising from extensor surface of right arm in a 28 year old female with its clinical, radiological, histopathological and immunohistochemical findings.

Keywords: *Embryonal rhabdomyosarcoma, Immunohistochemistry, Radiotherapy.*

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INTRODUCTION

Rhabdomyosarcoma (RMS) is a malignant soft tissue neoplasm of skeletal muscle origin[1]. It was first described by Weber in 1854[1]. lt accounts for 6% of all malignancy in children under 15 years of age[1]. The most commonly affected areas are the head and neck region, genitourinary tract, retroperitoneum and to a lesser extent, the extremities[2]. On the basis of the histological findings, 4 broad subtypes of RMS had been identified like botryoid and spindle cell RMS, embryonal RMS, alveolar RMS and undifferentiated RMS[3,4]. The histogenesis of RMS is unclear, but the most widely accepted hypothesis is that, RMS arises due to proliferation of embryonic mesenchymal tissue[5]. Here, we presented a case of embryonal RMS arising from right arm muscle which was an unusual site and described the clinical, radiological, histopathological and immunohistochemical features of this RMS.

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CASE REPORT

A 28 years old female attended the Orthopaedics outpatient department of Jalalabad Ragib-Rabeya Medical College Hospital on March 2016 with a painless swelling at her right arm on extensor surface for 2 years. It was initially a small, painless swelling for which she consulted a local orthopedic surgeon and biopsy from the swelling was done. The histopathological examination revealed that, the tissue was consistent with embryonal RMS and she was advised for operative treatment but she refused to undergo surgery at that time. By the time, the swelling became larger in size and hampered her daily activities like working, writing etc. On clinical examination, a moderately large (approximately 7x9 cm), firm, globular and non tender swelling was found over her extensor surface of the right arm. The overlying skin was free but stretched with no sign of inflammation. Sensation of the overlying skin was normal and scar mark was present. Swelling was fixed with the underlying muscle. Movements of elbow specially antigravity was restricted. Magnetic resonance imaging (MRI) revealed large lobulated soft tissue intensity

mass comprising the lateral and long head of triceps muscle (Figure-1 and Figure-2). Immunohistochemistry was done for myoglobin and revealed positive for myoglobin. Standard diagnostic workup was done by performing computed tomography (CT) scan of chest, ultrasound sonography (USG) of whole abdomen and bone scan. There were no foci of metastases. Pre-operative workup and nerve conduction study of the affected limb were done which came out normal. Excisional biopsy of the lump was planned. After all aseptic precautions, under general aneasthesia and a longitudinal posterior incision the swelling was explored (Figure-3). The lump appeared to arise from soft tissue. Radial nerve was free from the swelling. The lump was also extended to the ventral surface; complete excision was not possible due to its attachment to the surrounding structures. So, near total excision was performed. Then the specimen was sent for histopathology. The histopathology report showed a malignant tumour composed of atypical cells having round to oval hyper-chromatic nucleus, coarse nuclear chromatin, and prominent nucleoli with abundant cytoplasm. These cells were arranged in solid sheets and alveolar pattern. Following the operation and confirmation of diagnosis, the patient was advised to undergo chemotherapy. She underwent chemotherapy and was reported healthy without recurrence in December 2020. (This information was obtained before the manuscript goes for printing which was later than volume and number of journal).

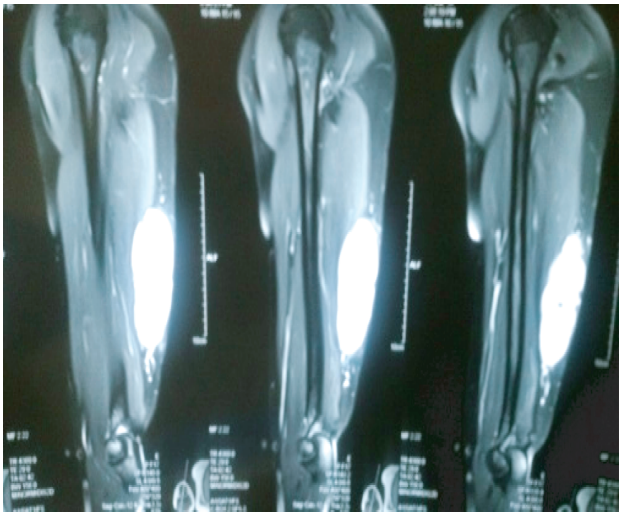

Figure-1: *MRI reveals large lobulated soft tissue intensity mass comprising the lateral and long head of triceps.*

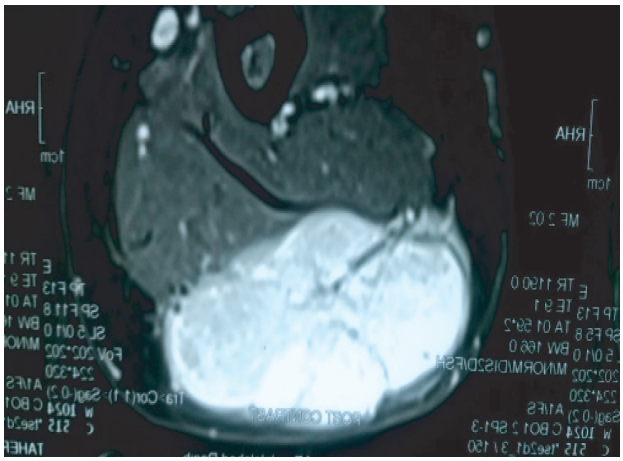

Figure-2: *MRI reveals large lobulated soft tissue intensity mass comprising the lateral and long head of triceps.*

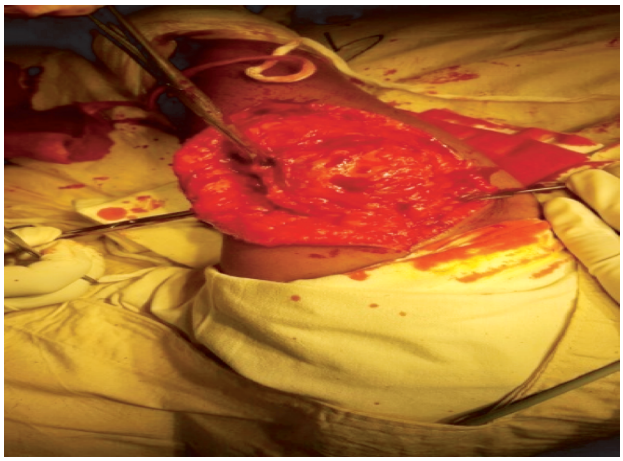

Figure-3: *Per operative photograph.*

DISCUSSION

Embryonal rhabdomyosarcomas usually are located in the head or neck or in the genitourinary tract. They often are soft and gelatenous and microscopically are composed of long spindle cells with hyperchromatic nuclei and cytoplasm. The cells may be arranged in parallel bundles and myxoid areas may be prominent, gaint cells may be present[6]. Our patient was 28 years old which was not a very common age to have RMS. The site of involvement was right arm muscle which was a very unusual site for RMS to arise from. ln general, most patients have an advanced disease even at the stage of initial presentation because RMS are known to show rapid growth and the patients generally tend to delay medical consultation[3,4].

In our patient, though the diagnosis was delayed and primary site showed extensive involvement, there was no metastatic involvement even after 1 year of onset of disease. An early and accurate diagnosis of the tumour and a combined therapeutic approach involving surgery, chemotherapy and radiotherapy were known to improve dramatically the survival rates, as seen in cases recorded over the past 20 years[6]. The diagnosis was delayed and curative surgery could not be done due to extensive local involvement. The tumour came out to be chemo-resistant, which was also unusual. But following radiotherapy there was no recurrence within last 12 months of follow up.

CONCLUSION

Rhabdomyosarcoma frequently has a rapid and aggressive clinical course. Metastases occur in the lungs, lymph nodes and bone marrow. Treatment is multimodal consisting of surgery, radiotherapy and chemotherapy.

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