A RARE CASE OF BILATERAL MULTIFOCAL BREAST MASSES IN A CHILD WITH DISSEMINATED RHABDOMYOSARCOMA

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ABSTRACT

Rhabdomyosarcoma is the most common soft tissue sarcoma of childhood and adolescence. Gross dissemination as multifocal solid masses to unusual sites such as breasts are rare, as we encountered in this case.

In this report, we will be highlighting a rare case of disseminated rhabdomyosarcoma that presented as compressive thoracic myelopathy with bilateral multiple breast masses; which was diagnosed after radiological and histopathologic examination.

KEYWORDS

Rhabdomyosarcoma, Breast, Small Round Cell Tumour, Disseminated Malignancy.

HOW TO CITE THIS ARTICLE: Sherinas Rehiman, Jineesh T, V. R. Rajendran, Dhanej M. K, Juvaina P. "A Rare Case of Bilateral Multifocal Breast Masses in A Child with Disseminated Rhabdomyosarcoma." Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 100, December 14; Page: 16588-16590, DOI: 10.14260/jemds/2015/2471

INTRODUCTION

Rhabdomyosarcoma is the most common soft tissue sarcoma of childhood and adolescence, which occurs in any anatomic location, mostly in the head, neck or genitourinary tract.[1] The usual presentation is as rapidly enlarging soft tissue masses, which on sectional imaging appears as predominantly peripherally and heterogeneously enhancing solid lesions.[2]

They cause localised pressure effects on neurovascular structures, and adjacent bony destruction seen in over 20% of cases.[2] Metastases to regional lymph nodes, lung and bones occur with advanced stages of the disease.

The imaging findings overlap with other childhood malignancies if disseminated and needs pathological correlation for accurate diagnosis.

CASE REPORT

A thirteen year old girl presented with low back ache and progressive paraparesis of one month duration. Physical examination revealed bilateral breast lumps. Neurological examination showed features of compressive myelopathy at thoracic level.

Radiological evaluation of the girl was done with chest radiography (Figure 1), breast ultrasound (Figure 2), CT thorax (Figure 3,4) and MRI spine (Figure 5,6,7).

The constellation of findings noted were bilateral multiple breast masses of which largest of approximately 10x10cm was noted on the right side, bilateral axillary lymphadenopathy, right pleural effusion, right posterior chest wall mass with features of rib infiltration and a right paraspinal posterior mediastinal mass with spinal invasion.

The masses were heterogenous with infiltrative margins and showed strong inhomogenous post contrast enhancement.

Radiological features favoured an aggressive disseminated malignant process.

A biopsy (Figure 8) was taken from the largest lesion in the right breast, which showed evidence of metastases from small round cell neoplasm. Immunohistochemistry (Figure 9) was done that found the cells to be positive for desmin and myogenin. Thus the diagnosis of disseminated rhabdomyosarcoma was confirmed.

DISCUSSION

Rhabdomyosarcoma though the most common soft tissue malignancy of childhood, presenting as multiple solid masses involving bilateral breasts, chest wall and paraspinal region is extremely rare. The imaging findings are nonspecific with non-descript aggressive looking infiltrative solid masses.

Accurate diagnosis and estimation of disease load requires a thorough radiological evaluation and histopathological examination.

Disseminated multifocal solid maligancy in childhood and adolescence is a diagnostic challenge. The curious feature is that most of the diagnostic entities share a common cytological appearance of small round cells. The more common ones that can be counted as differentials in our case include peripheral neuroectodermal tumor, rhabdomyosarcoma, non-Hodgkin's lymphoma, neuroblastoma, nephroblastoma and desmoplastic small round cell tumour.[3] So the definitive diagnosis of most pediatric solid tumours requires extensive immunohistochemical markers because they often exhibit a nonspecific small round cell tumour phenotype.[4]

Financial or Other, Competing Interest: None.
Submission 05-11-2015, Peer Review 06-11-2015,
Acceptance 06-12-2015, Published 14-12-2015.
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DOI:10.14260/jemds/2015/2471

CONCLUSION

Rhabdomyosarcoma is to be considered among the differentials of disseminated malignancies in childhood as was seen with our case.

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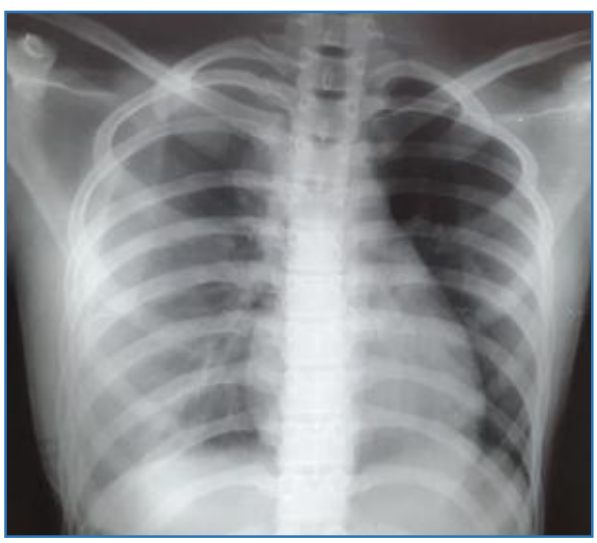


Fig. 1: Chest radiograph revealed right sided paraspinal opacity with widening of posterior 3rd intercostal space on right. There was also right pleural effusion associated with an ill defined opacity along the right lateral hemithorax extending into the soft tissues of breast

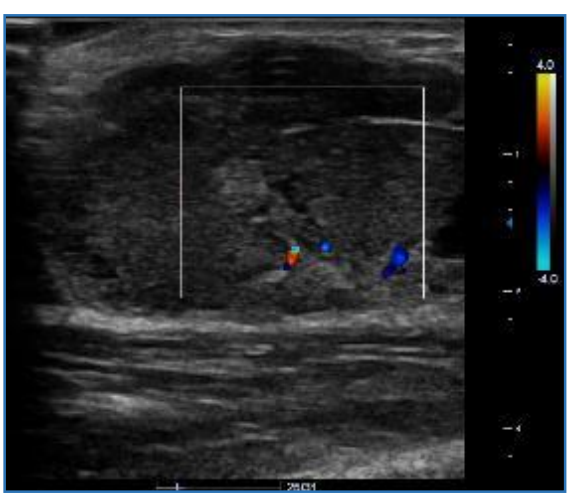


Fig. 2: Ultrasound doppler examination of right breast showing a large heterogenous solid mass with vascularity

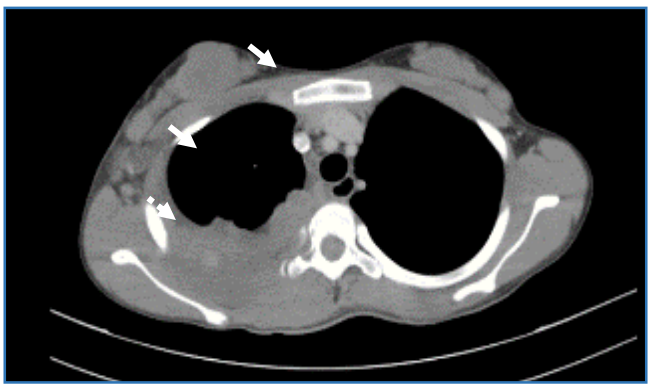


Fig. 3: Axial post contrast CT images showing right posterior chest wall mass (Arrowhead), bilateral breast masses (Solid arrows), and necrotic right axillary lymph nodes (Dotted arrow)

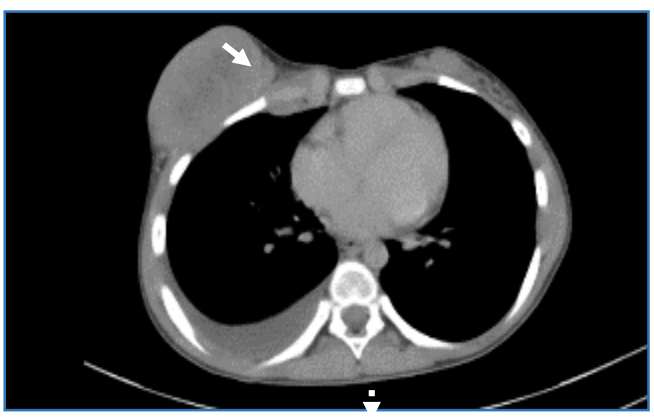


Fig. 4: Axial post contrast CT images showing bilateral breast masses (larger on the right side) (Solid arrows). Right pleural effusion (dotted arrow) is also noted

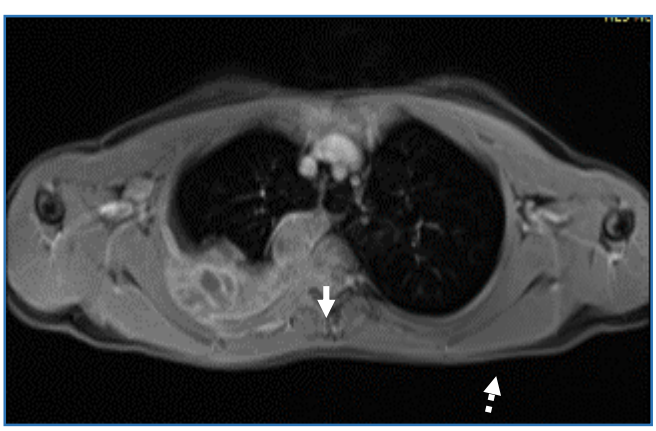
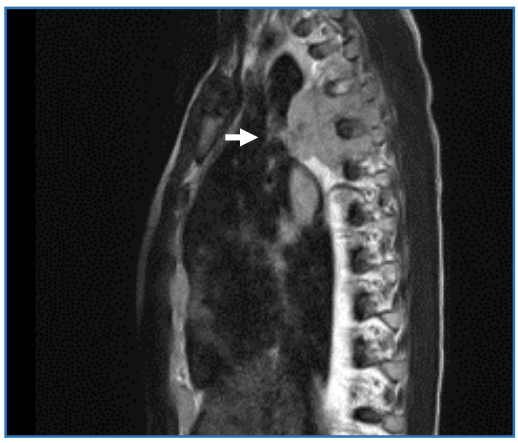


Fig. 5: Axial post contrast T1 images showing right posterior chest wall mass (Solid arrow) with rib infiltration and paraspinal and intraspinal extension (Dotted arrow); displacing and compressing the spinal cord



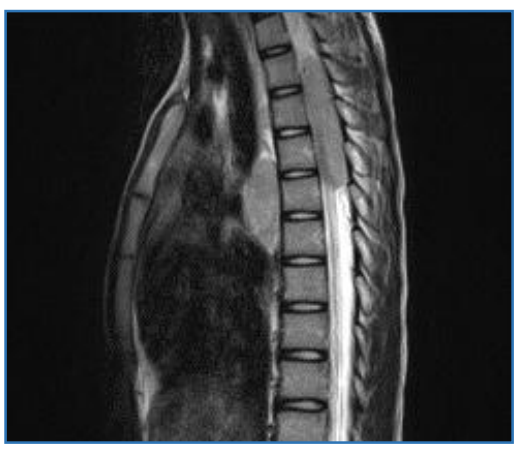


Fig. 6,7: Sagittal T2 images showing paravertebral (Solid arrow) and intraspinal (Dotted arrow) extension of the lesion

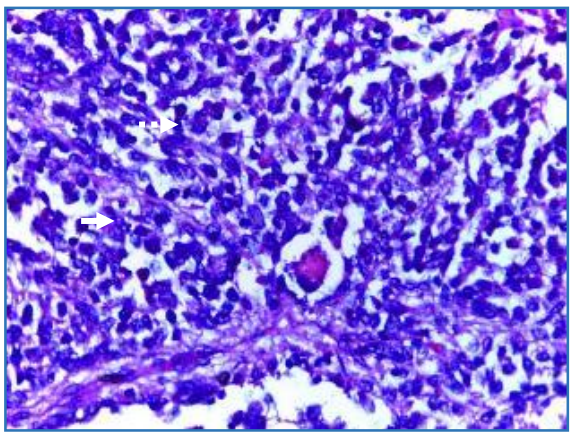


Fig. 8: Axillary lymph node biopsy showing evidence of small round cell with hyperchromic nucleus–suggesting small round cell neoplasm

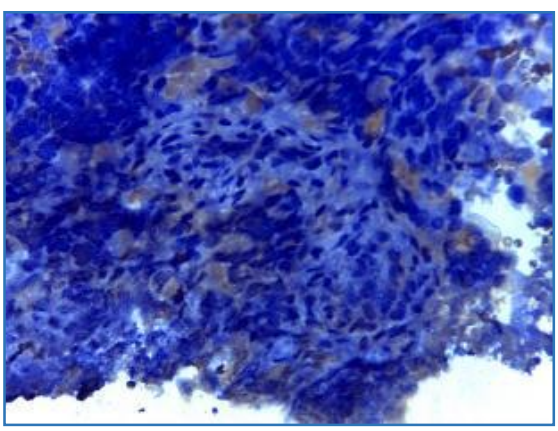


Fig. 9: Immunohistochemistry showing desmin positivity