Case Report

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Case Report on Embryonal Rhabdomyosarcoma in a 7-Year-Old Male Child

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1. Abstract

Rhabdomyosarcoma is a rare and aggressive soft-tissue tumor that starts in skeletal muscle cells. It mainly affects children. Early diagnosis and treatment improve survival rates. We report the case of a 7-year-old boy with embryonal rhabdomyosarcoma who showed a progressively enlarging chest wall swelling and was treated with chemotherapy, followed by surgery. Imaging studies, biopsy, and a PET scan confirmed malignant cells. The child responded well to chemotherapy and was referred for ongoing treatment. This case emphasises the need for early detection, correct diagnosis, and teamwork in treating paediatric soft tissue sarcomas.

2. Keywords: case report1, Rhabdomyosarcoma2, paediatric cancer3, chemotherapy4, chest wall tumor5, PET scan6.

3. Introduction

Rhabdomyosarcoma (RMS) is the most common soft-tissue sarcoma in children, representing about 5-8% of all paediatric cancers. It comes from mesenchymal cells that can turn into skeletal muscle. RMS usually affects children under 10 and can appear in various body parts, including the head and neck, genitourinary tract, limbs, and trunk.

Embryonal rhabdomyosarcoma is the most common subtype and tends to have a better outlook when diagnosed and treated early. The disease often appears as a painless, growing mass, which can delay diagnosis. Treatment typically includes chemotherapy, surgery, and sometimes radiation therapy. This report details the clinical presentation, diagnosis, treatment, and outcome of a child with embryonal rhabdomyosarcoma in the chest wall.

4. Case

4.1. Patient Information

A 7-year-old boy, initially thought to have Ewing sarcoma, came to the A.V.B.R.Hospital for scheduled chemotherapy. According to his father, the child had been healthy until five months before his admission when a small swelling appeared on his chest, measuring about 2 × 2 cm.

The swelling started slowly, was painless, and gradually grew larger over months. There was no history of trauma, fever, weight loss, or loss of appetite. The child had no significant medical or surgical history, and there was no known family history of cancer.

4.2. Clinical Findings

During the physical examination, the child was awake, cooperative, and of average build for his age. His vital signs were stable. A local examination of the chest showed a well-defined, firm swelling that was non-tender and attached to underlying structures. The skin over the swelling looked normal, with no signs of inflammation.

A systemic examination showed no abnormal findings in the heart, lungs, or abdomen. There were no swollen lymph nodes. A neurological assessment was normal.

4.3. Diagnostic Approach

At 7 years old, the child was admitted to the paediatric oncology department of A.V.B.R. Hospital for further evaluation and treatment. Routine lab tests were done. The hemoglobin level

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10.8, total RBC count 4.02, total WBC count 7,600, MCV count 82.4, MCHC 33.1, total platelet count 1.57, HCT 40.9,Monocytes 03, Granulocytes 65 ,Lymphocytes 20 ,KFT- UREA 18,creatinine 0.8,Sodium 140,potassium 3.6. The erythrocyte sedimentation rate (ESR) was 22 mm/hr. Radiological evaluation with a CT scan of the chest showed a well-defined, enhancing mass on the chest wall, suggestive of a malignant spindle cell tumor. A PET scan further indicated metabolically active areas, showing residual malignant cells.

4.4. Diagnostic Assessment

Based on the clinical presentation, lab tests, imaging results, and biopsy, the child was diagnosed with embryonal rhabdomyosarcoma of the chest wall. A biopsy confirmed the diagnosis and indicated that the child had previously received chemotherapy. The histopathology showed features of embryonal rhabdomyosarcoma with about a 70% treatment effect, suggesting a good response to chemotherapy.The child completed several chemotherapy cycles before surgery to remove the tumor. The PET scan results confirmed residual cancer cells, which required further treatment and close monitoring. All other blood tests were within acceptable limits for continuing therapy.

4.5. Imaging or Other Data on Figures

Figure 1: PET (Positron Emission Tomography) Of Whole Body

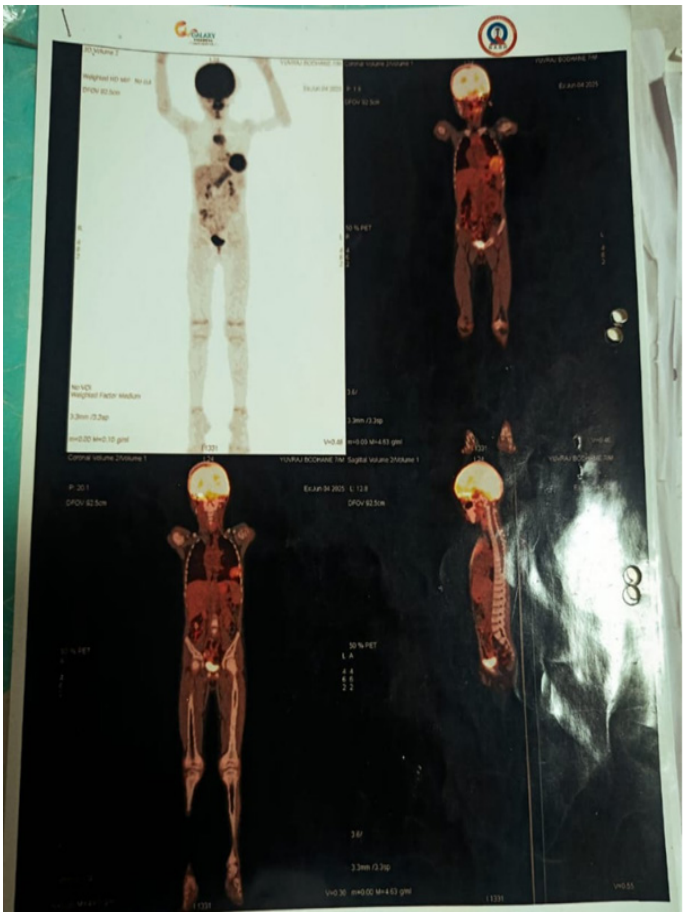
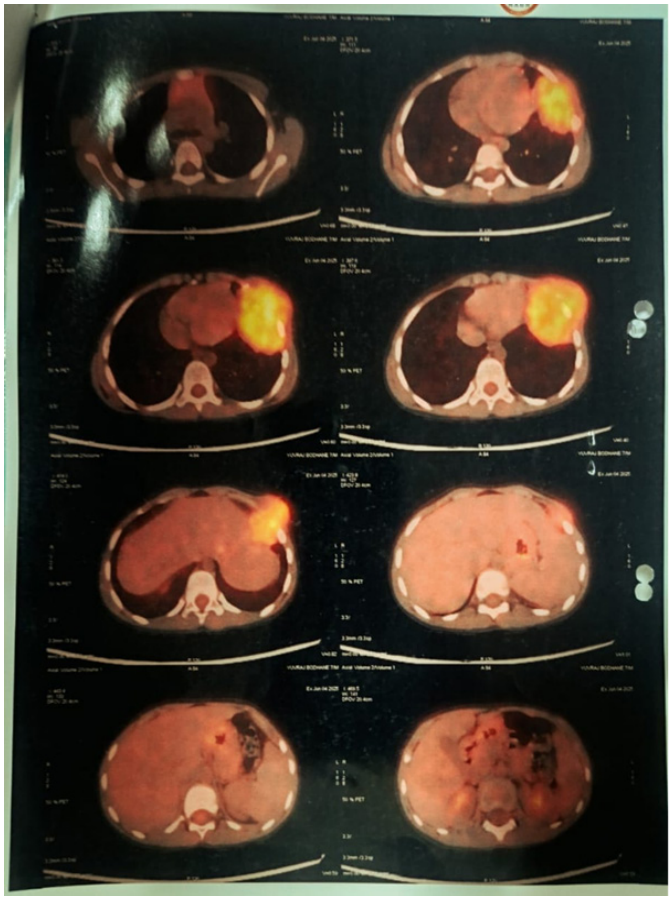


Figure 2: PET (Positron Emission Tomography) of Chest.



5. Discussion

Rhabdomyosarcoma is a highly aggressive tumor that commonly affects children. Embryonal rhabdomyosarcoma, the most prevalent subtype, generally responds well to chemotherapy and surgery if caught early. Chest wall involvement is less common and can create diagnostic challenges because of its vague symptoms.

In this case, the child showed a progressively enlarging chest wall swelling, a typical early sign of soft-tissue sarcomas. Imaging was vital in showing the tumor's extent and characteristics, while the biopsy established the diagnosis.

A multimodal approach is crucial in managing RMS. Chemotherapy helps shrink tumors, control micrometastasis, and improve surgical results. In this case, surgery followed chemotherapy achieved a significant reduction in tumor size, with a 70% treatment response. PET scanning further aided in evaluating residual disease and guiding ongoing therapy.

Early referral, parental awareness, and a collaborative approach with pediatric oncologists, surgeons, radiologists, and nursing staff are critical for the best results in pediatric rhabdomyosarcoma.

6. Conclusion

This case presents a rare instance of embryonal rhabdomyosarcoma

in the chest wall of a 7-year-old boy. Early diagnosis, proper imaging, histopathological confirmation, and combined treatment led to a positive response. Continuous monitoring and further oncological care are necessary due to the detected residual malignant cells on the PET scan. Quick identification and thorough care can greatly enhance survival and quality of life for paediatric patients with rhabdomyosarcoma.

7. Ethics Approval and Patient Consent

Formal ethical committee approval and written informed consent could not be obtained for this case report. However, all patient-related information has been completely anonymized, and no identifying data have been disclosed. This case is reported for academic and educational purposes in accordance with accepted ethical standards.

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