

An Unusual Occurrence of Metastases to Multiple Muscles in Neuroblastoma

Abstract

Neuroblastoma presenting with multiple muscles and subcutaneous tissue metastases is rarely reported in the literature. We would like to highlight such infrequent occurrences for increasing the clinical acumen of the medical fraternity with an aim to deliver proper therapy to patients.

Keywords: *68Ga-DOTANOC, metastases, muscle, neuroblastoma, positron emission tomography/computed tomography*

An 1-year-old female baby presented with swelling in the right thigh for 1 month, which was insidious in onset and nonprogressive in nature. The baby had no significant medical history previously. On examination, two additional swellings were revealed in the right scapula and the lateral aspect of the left leg region, which were firm in consistency and not attached to the underlying soft tissue or skin. Laboratory investigation revealed no significant findings. Biopsy from the leg revealed poorly differentiated neuroblastoma positive for CD56 and neuron-specific enolase markers. Magnetic resonance imaging of the right thigh showed well-defined spindle-shaped T2-hyperintense and T1-hypointense lesions in the intramuscular plane of the posterolateral aspect of the right upper thigh. Figure 1: The baseline 68 Ga -DOTANOC positron emission tomography/computed tomography (PET/CT) for staging, maximum intensity projection (a), and transaxial CT and fused PET/CT sections revealed heterogeneously tracer avid enhancing lobulated right suprarenal mass (b and f) with areas of calcifications measuring 10 cm × 7 cm with multiple retroperitoneal lymph

nodes. Interestingly, the right infraspinatus and teres minor (c and g), left obturator (d and h), left rectus femoris, and left gastrocnemius (e and i) intramuscular deposits and right iliac cortical bone deposits were visualized.

Neuroblastoma is the most common extracranial solid tumor in children worldwide.^[1,2] It usually originates from the neural crest cells of the sympathetic nervous system, specifically arising from the paraspinal sympathetic ganglia in the abdomen or mediastinum.^[3] Almost 60% of the patients present with metastatic disease^[4] with local lymphadenopathy and distant metastasis to the central nervous system, orbit, liver, bone marrow, and bones through the bloodstream.^[5,6] It rarely causes soft tissue or musculoskeletal involvement.^[7,8] We present a case of neuroblastoma with multiple muscle metastases as detected on 68Ga-DOTANOC PET/CT scan, which is not reported previously in the literature. Such metastatic presentations in neuroblastoma cases needed to be a special consideration as they can change the staging and management of the patient.

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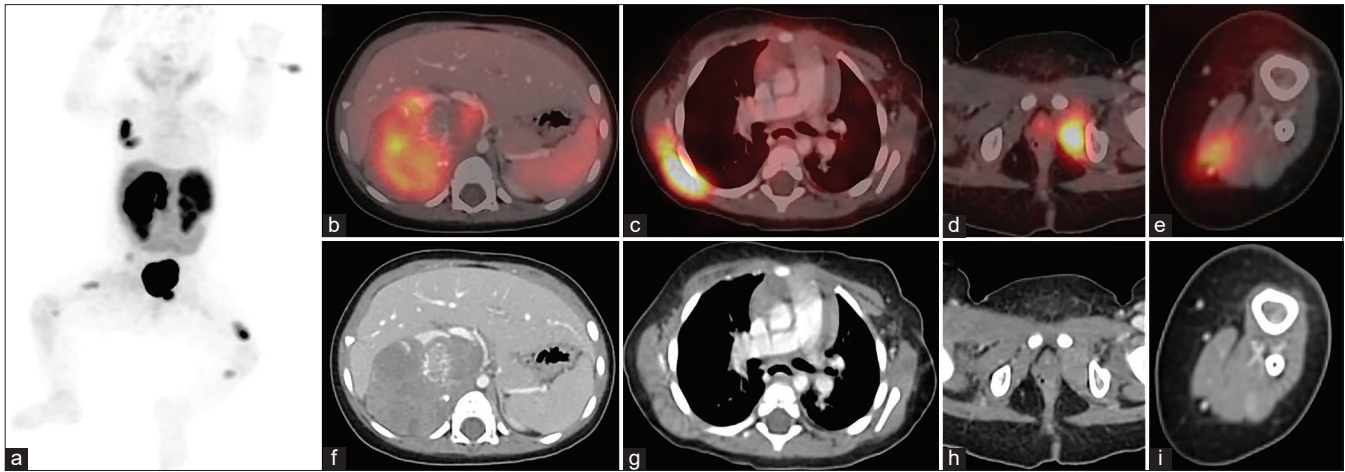


Figure 1: An 1-year-old female baby presented with swelling in the right thigh for 1 month, which was insidious in onset and nonprogressive in nature. The baby had no significant medical history previously. On examination, two additional swellings were revealed in the right scapula and the lateral aspect of the left leg region, which were firm in consistency and not attached to the underlying soft tissue or skin. Laboratory investigation revealed no significant findings. Biopsy from the leg revealed poorly differentiated neuroblastoma positive for CD56 and neuron-specific enolase markers. Magnetic resonance imaging of the right thigh showed well-defined spindle-shaped T2-hyperintense and T1-hypointense lesions in the intramuscular plane of the posterolateral aspect of the right upper thigh. The baseline ^{68}Ga -DOTANOC positron emission tomography/computed tomography (PET/CT) for staging, maximum intensity projection (a), and transaxial CT and fused PET/CT sections revealed heterogeneously tracer avid enhancing lobulated right suprarenal mass (b and f) with areas of calcifications measuring 10 cm \times 7 cm with multiple retroperitoneal lymph nodes. Interestingly, the right infraspinalus and teres minor (c and g), left obturator (d and h), left rectus femoris, and left gastrocnemius (e and i) intramuscular deposits and right iliac cortical bone deposits were visualized

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's parents have given their consent for her images and other clinical information to be reported in the journal. The patient's parents understand that her name and initials will not be published, and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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