

## Askin Tumour on Tc-99m MDP Bone Scan

Mariyam Waseem, Fatima Yousaf, Aamna Hassan, Ahmad Quraishy  
Department of Nuclear Medicine, Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore.

**Correspondence:** Aamna Hassan. e-mail: aamnah@skm.org.pk

ORCID ID. 0000-0003-0026-0729

### Abstract

Askin tumour is a rare primitive neuroectodermal tumour of the chest wall belonging to Ewing family of tumours. It is diagnosed on histopathology and imaged with CT and MRI. Typical symptoms include pain, dyspnoea and weight loss. Generally has an aggressive course and is often misdiagnosed as other blue cell tumours. Standard treatment is multidisciplinary; combining chemotherapy with surgery and/or radiotherapy. Here we present a few cases of Askin tumour imaging seen on Tc-99m MDP bone scan.

**Keywords:** Askin tumour, Ewing Sarcoma, Tc-99m MDP bone scan

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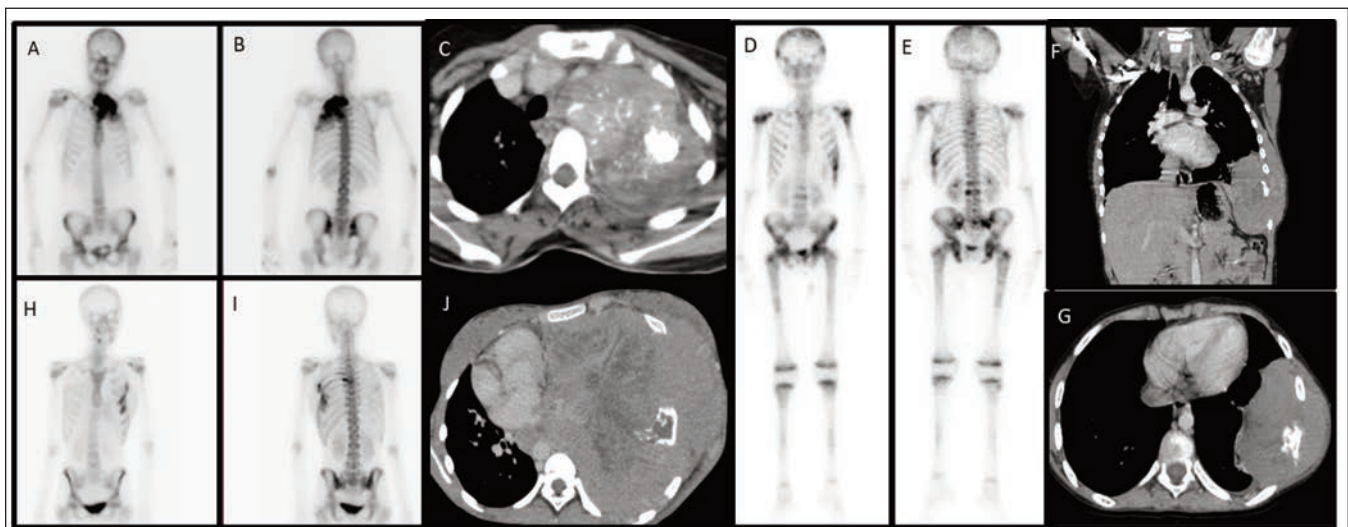
### Cases

A 14-year-old girl was diagnosed with malignant round cell tumour consistent with Ewing sarcoma on left hemithoracic biopsy. She was treated with radiotherapy. Two years later, she presented with lower limb weakness and back pain. Bone scan re-demonstrated uptake in the primary tumour [Image A, B, C].

A 12-year-old girl presented with chest pain and fever. She was diagnosed with Ewing's sarcoma on pleural biopsy Bone [Image D, E, F, G].

A 10-year-old boy presented with swelling of left side of chest for past 3 months. Biopsy of left side of chest wall showed malignant round blue cell tumour favouring Ewing's sarcoma [image H, I, J].

Askin tumour is an uncommon entity amongst Ewing sarcoma tumours/peripheral neuroectodermal tumours (PNET).<sup>1</sup>



**Figure:** [A,B,C] Tc-99m MDP bone scan showing increased uptake in the upper left hemithorax, consistent with primary soft tissue mass with internal calcification causing destruction of adjacent ribs on correlative CT scan. [D,E,F,G] Tc-99m MDP bone scan showing uptake in left-sided 5th and 6th ribs and in T7 vertebral body. Correlative CT scan showed large soft tissue mass causing erosion of adjacent left-sided ribs. [H,I,J] Tc-99m bone scan showing multiple foci of increased uptake in skull, proximal humeri, spine, lower right anterior ribs, pelvic bones, proximal femora and tibia. Correlative CT scan showed soft tissue intra and extra thoracic mass encasing 7th to 9th ribs with underlying expansile destruction of left 8th rib.

Initially reported by Askin et. al, in 1979, primitive PENT arising in the chest wall are henceforth called Askin tumour.<sup>2</sup> Askin tumour primarily occurs in younger people with female preponderance in 75% cases.<sup>3</sup> CT scan classically shows a large soft tissue mass originating from the chest wall. Ipsilateral pleural effusion and rib destruction may or may not be present. Larger lesions often appear heterogeneous, indicating haemorrhage, necrosis, or cystic degeneration. Calcification within the mass and associated lymphadenopathy are uncommon.<sup>4</sup> Typical MRI findings show hyperintensity on T1-weighted imaging compared to muscle, and a heterogeneously bright signal on T2-weighted imaging, indicative of haemorrhage and necrosis.<sup>5</sup> Histological features consists of well-organized small round cells. Traditionally, the gold standard of treatment has been radical surgery. However, disease free survival is improved with neoadjuvant chemotherapy followed by surgery and/or radiotherapy because of rapid progression of this disease.<sup>6</sup>

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