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IMAGE OF THE MONTH

^{68}Ga-DOTANOC PET/CT for the detection of a mesenchymal tumor causing oncogenic osteomalacia

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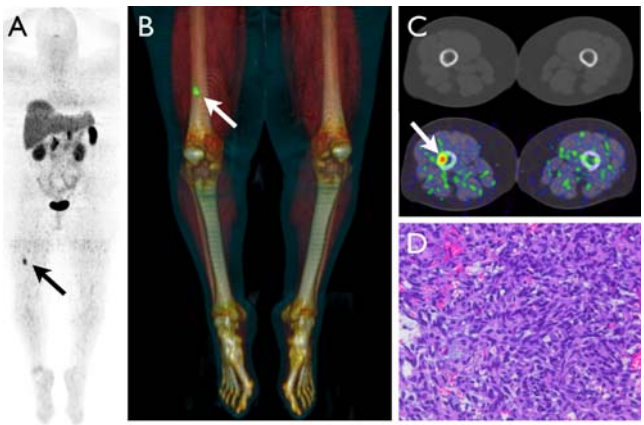
A 54-year-old female patient had presented with clinical features of hyperphosphaturia, hypophosphatemia and osteomalacia. These findings were suggestive of oncogenic osteomalacia, a rare paraneoplastic disorder that is usually associated with a phosphaturic mesenchymal tumor [1]. Conventional morphologic imaging including whole-body computed tomography (CT) failed to localise the primary tumor. The patient underwent additional positron emission tomography (PET)/CT using ^{68}Ga-DOTANOC, a highly sensitive and specific tracer for imaging of somatostatin receptor overexpression, which has recently proven potential in oncogenic osteomalacia [2, 3].

Abnormal focal tracer uptake was seen in the right distal femur (A). Using image fusion and three-dimensional volume-rendering techniques, the localisation of the suspected primary tumor was clearly visualised (B). Notably, no morphologic correlative was observed in the corresponding low-dose CT (C). Based on the PET/CT findings, the patient underwent segmental resection and



compound osteosynthesis of the distal femur. The hematoxylin and eosin-stained section (D) demonstrated randomly organised spindle cells with slight cellular and nuclear atypia and a sparse intercellular matrix. Immunohistochemistry was negative for myogenic, neural, vascular and epithelial markers. These histopathologic findings were consistent with the diagnosis of a benign phosphaturic, mesenchymal tumor.

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