A mysterious tumor in the obturator internus muscle — a case report

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Case report

A 33-year-old male was admitted to local Nuclear Medicine Department with suspected femoral head necrosis. His chief complaint was pain located in left inguinal region exacerbating during walking. He was forced to use a crutch.

Three-phase bone scan (TPBS) was performed according to the standard protocol used in our Department. ⁹⁹ᵐTc-labelled methylene diphosphonate (MDP) was used, administered activity was 740 MBq. The TBPS was followed by SPECT/CT scan of the pelvis. The results are presented in Figures 1 and 2.

Figure 1. A. TPBS — blood flow images. AP view. Note hyperperfusion in area medially to the left iliac arteries (arrow); B. TPBS — blood pool images. AP and PA views. Area of significant hyperemia medially to the left hip joint

Figure 2. A. Whole body bone scan (dual intensity projection). High MDP accumulation in the area between bladder and left hip joint. Increased radiotracer accumulation in the adjacent bone (ischium). Slightly and irregularly increased MDP uptake in the distal shaft of the right humerus was also observed — probably due to use of a crutch; B. SPECT/CT images clearly indicate radiotracer accumulation in the tumor located within the left obturator internus muscle. Slightly increased accumulation in the adjacent bones with no visible destruction of bone structure. The tumor itself is polycyclic in shape and highly calcified, compresses surrounding structures, but without signs of infiltration
Caution and further evaluation recommended as malignancy were suspected, so MRI scan was executed. The results are presented in Figure 3.

Basing on clinical appearance and obtained images the decision of surgery was made. The surgeon removed a brown tumor. Primary histopathological verification stated: mesenchymal chondrosarcoma, however, further and more detailed evaluation, including immunohistochemical reactions, suggested fibroblastic osteosarcoma rather than chondrosarcoma.

Six months after the surgery and chemotherapy the patient underwent 18F-FDG-PET/CT scan to rule out local recurrence or distant metastases. The results are presented in Figure 4.