a mínima área de dilatação biliar no segmento II devido à ausência de lesão na RNM. Paciente evoluiu bem, PET/CT realizado 3 meses após o tratamento mostrou resposta excelente na lesão do segmento IVa, resposta completa nas outras 4 lesões, porém crescimento significativo das dimensões e captação da lesão associada a dilatação biliar no segmento II não tratado. Encaminhado para radioablação da lesão remanescente. A RNM 3 meses após, apresentava ausência de doença hepática ativa, significativa redução das dimensões do lobo hepático direito e hipertrofia do lobo caudado e lobo esquerdo. Teve férias da QT por 6 meses quando foi evidenciado nova progressão de doença hepática associado a obstrução biliar e doença secundária pulmonar, sendo submetido a procedimento de drenagem biliar e reiniciado tratamento sistêmico. **Conclusão:** O sucesso do tratamento locorregional das metástases hepáticas no câncer de cólon está relacionado a um bom planejamento e entrega do itrio90 nas lesões. O caso descrito nos ensina que houve boa resposta ao itrio90 nas áreas tratadas, que focos pequenos de doença merecem atenção pois podem ser os vilões no futuro e que o PET/CT foi mais sensível na detecção precoce de lesão hepática pequena ávida a glicose. Nosso paciente superou a expectativa média de vida de 14 meses para pacientes metastáticos, ficando 15 meses sem progressão após SIRT e radioablação, com boa qualidade de vida e ganhando férias de quimioterapia. Apresentou recidiva apenas em áreas não tratadas. A armadilha pode estar nos pequenos focos de doença!

Palavras-chave: Cancer de cólon metastático, Evolução pós radioembolização hepática com itrio90, Radioembolização com itrio90;.

https://doi.org/10.1016/j.htct.2025.103814

CASE REPORT OF METASTATIC MELANOMA LESION AFFECTING AN EXTENSIVE AREA OF THE LEFT LOWER LIMB ON 18F-PSMA PET/CT AND 18F-FDG PET/CT IMAGES – INTENDING TO COMPARE THE DISTRIBUTION OF BOTH RADIOTRACERS IN THIS CANCER

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A B S T R A C T

Introduction/Justification: Positron emission tomography (PET/CT) using 18F-FDG has been widely used for staging and monitoring melanoma patients. Recent studies highlight the potential of 18F-PSMA PET/CT as an additional diagnostic modality, given the expression of prostate-specific membrane antigen (PSMA) in melanoma cells. Recent evidence indicates that anti-PSMA antibodies react with malignant melanoma neo vasculature, coupled with incidental findings reporting PSMA avidity in melanoma, the potential role of 18F-PSMA PET/CT as a novel diagnostic imaging technique in non-prostatic cancers looks promising. **Report:** We describe below a case that illustrates the potential of 18F-PSMA PET/CT in evaluate melanoma lesions: 72-year-old female patient, Caucasian, single, with medical history of chronic obstructive pulmonary disease, diabetes mellitus, hypertension, smoking for 10 years (50 pack-years), and a cerebral aneurysm clipping in 2013 (which resulting in inability to walk). In 2022, she developed a sudden and progressive lesion on her left hallux, which spread to left lower limb over six months. She underwent two biopsies, confirming the diagnosis of melanoma. In 2024, the subject presented on physical examination a lesion affecting all the posterior portion of the lower limb, associated to an ulcerated vegetative lesion of approximately 10 cm on the medial portion of the left hallux. The immunohistochemistry findings described an invasive and ulcerated melanoma (Breslow 5 mm). On 16-October-2024 she underwent a 18F-FDG PET/CT founding an extensive densification of the subcutaneous tissue throughout the entire left lower limb, associated with multiple nodules, measuring up to 6.8 × 3.2 cm (SUVmax = 36.9). Furthermore, it was found left inguinal and femoral lymphadenopathy, and multiple pulmonary and hepatic nodules (SUVmax = 30.3). On the following day (17-October-2024), it was performed a 18F-PSMA PET/CT which found uptake of the radiotracer on the primary lesion in the left lower limb (SUBmax = 22.7), in the regional lymph nodes (inguinal and femoral) and pulmonary nodules (SUVmax = 32.1). Comparatively, the 18F-PSMA radiotracer showed smoothly less intense uptake in the left lower limb lesion and pulmonary nodules compared to 18F-FDG. On the other hand, hepatic nodules did not present 18F-PSMA uptake, while 18F-FDG uptake was moderately intense (SUVmax = 9.7). Due to the patient's multiple comorbidities, advanced age, poor general condition (Karnofsky Performance Status of 40%), and high surgical risk, invasive treatment was contraindicated. Palliative care was chosen instead. **Conclusion:** Therefore, apart from the use of 18F-PSMA PET/CT in staging of prostate cancer patients, this method shows a great potential in the evaluating of metastatic melanoma, with a capacity of uptake in lesions comparable to 18F-FDG PET/CT (as demonstrated in this case), needing further and longer studies to confirm these advantages.

Keywords: FDG PET/CT, melanoma, PSMA PET/CT.

https://doi.org/10.1016/j.htct.2025.103815

MESENCHYMAL PHOSFATURIC TUMOR: A CASE REPORT OF SUCCESS

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A B S T R A C T

Introduction/Justification: Hypophosphatemia mesenchymal tumors (HMT) are rare, of uncertain origin, and may cause osteomalacia derived from paraneoplastic syndrome. The clinical manifestations are caused mainly by phosphatase secretion promoted by the tumor cells, leading to excessive kidney excretion of phosphate, fractures, bone pain, hypophosphatemia, and low calcitriol levels. HMTs are challenging to locate through anatomic imaging because they are relatively small and occult. **Report:** We describe a case that illustrates the potential of nuclear medicine to identify HMT. A 52-year-old female patient complained of diffuse pain, especially in the hips, rib cage, and feet, for over one year. Magnetic resonance imaging (MRI) of the hip demonstrated bilateral avascular necrosis of the femoral heads. To evaluate a possible osteometabolic alteration, such as hyperparathyroidism, she underwent bone scintigraphy, which did not reveal signs of hyperparathyroidism but identified (in addition to the avascular necrosis) signs of hypertrophic osteoarthropathy, suggesting paraneoplastic syndrome. Laboratory tests showed normal PTH, hypophosphatemia, and phosphaturia. The patient initiated oral phosphorus replacement, which only partially reduced bone pain. She was submitted to an FDG-18F PET/CT to search for an occult tumor, which was negative. Considering the patient's phosphaturia and reports of hypophosphatemia and osteomalacia caused by occult non-mesenchymal tumors of the soft tissues, the hypothesis of phosphate-producing HMT was considered. These tumors arise mainly in the lower limbs, generate pain and a predisposition to small fractures in subchondral bones (more common in the femoral heads), and express somatostatin receptors. Thus, a DOTATATE-68Ga PET/CT was performed to locate this somatostatin-expressing occult tumor. The images showed a 0.5 cm intramuscular nodule with hyperexpression of somatostatin receptors deep within the left thigh muscle. To prepare for surgery, an MRI of the left thigh was performed to locate the nodule with DOTA-68Ga uptake. MRI showed the nodule was quite deep within the muscle and close to the left femoral vascular-nerve bundle. Due to the lesion's small size, deep location, and proximity to the neurovascular bundle, radioguided surgery with DOTA-68Ga was performed to remove the nodule. Histopathology concluded the nodule was consistent with a hypophosphatemia mesenchymal tumor. After the removal of the tumor, the phosphate level normalized, the pain disappeared, and the patient reported improved physical and mental health. **Conclusion:** In conclusion, a bone scan was essential to identify the possibility of an occult tumor due to the imaging characteristics of paraneoplastic syndrome, and the DOTATATE-68Ga PET/CT was vital to locate the tumor.

Keywords: Case report, DOTATATE-68Ga, Mesenchymal phosfaturic tumor, Osteomalacia.

https://doi.org/10.1016/j.htct.2025.103816