

# 18-PET/CT IN THE DIAGNOSIS AND RESPONSE EVALUATION OF DISSEMINATED HISTOPLASMOSIS IN AN IMMUNOCOMPETENT PATIENT - CASE REPORT

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**Introduction/Justification:** Histoplasmosis is the 5th most common opportunistic fungal disease in Brazil, caused by *Histoplasma capsulatum*, affecting mainly the extremes of age and immunocompromised patients (HIV or use of immunosuppressive medication/glucocorticoids). The fungus has a natural habitat in soil rich in bird and bat excrement, and therefore, its main form of transmission is through inhalation. In some situations, this disease can occur in previously healthy patients with no known comorbidities or exposures, as is the case in the current report. In these situations, diagnosis becomes extremely challenging due to the wide variability of possible pathologies that can present with nonspecific symptoms, jeopardizing diagnostic confirmation and appropriate therapy. This study aims to demonstrate the usefulness of PET-CT in cases like this and to highlight its fundamental role in guiding the case and appropriate management. **Report:** Female, white, 11 years old, without comorbidities or previous surgeries, started experiencing fever, myalgia, and edema in the lower limbs in August 2022. After months of investigations, consultations with doctors from different specialties, and unsuccessful treatments, she underwent a PET/CT scan. The 18F-FDG PET/CT exams showed hypermetabolism in several lymph nodes, enlarged lymph nodes, and bony focal areas. With these findings, a biopsy of the lymph node tissue of the right internal mammary chain was performed, where the diagnosis of histoplasmosis was obtained, allowing for appropriate treatment with a combination of trimethoprim-sulfamethoxazole for one year and corticosteroid therapy for four months. In a little less than six months, evaluation of the treatment of the disease through PET-CT indicated the absence of hypermetabolic lesions, thus demonstrating the importance of PET/CT studies in the diagnostic elucidation and in the evaluation of the response to a case of histoplasmosis in an immunocompetent child, even in the absence of clinical suspicion. **Conclusion:** This case report aims to highlight the role of PET-CT (positron emission tomography-computed tomography) in identifying sites of fungal infection and guiding the locations for histopathological study. Thus, the use of PET-CT was crucial for directing biopsy and accurate diagnosis, as well as for determining the therapeutic response after initiating appropriate pharmacology.

**Keywords:** 8F-FDG PET/CT, Fever of unknown origin, Histoplasmosis.

# PROLONGED AND INTENSE UPTAKE OF [177LU]LU-FAP-RTX IN MYOEPIHELIAL CARCINOMA: A CASE REPORT

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**Introduction/Justification:** We present a case of a 71-year-old male patient diagnosed with myoepithelial carcinoma of the pelvis and perineum, who underwent fibroblast activation protein (FAP)-directed radioligand therapy and presented long lasting tumor retention as detected by late whole-body scans.

**Report:** The patient had been previously submitted to neoadjuvant radiation therapy and surgery, with tumoral relapse at the surgical margins in the gluteal region. Lesions displayed a slow and progressive sarcomatoid growth pattern, with sacral osteolytic involvement, accompanied with obturator and left common iliac lymph node metastases. Immunotherapy was initiated but discontinued due to grade IV diarrhea. With progressive disease evident on FDG PET/CT and no other viable chemotherapy indicated, FAPI radioligand therapy was proposed, given significant tracer uptake observed in FAP-directed PET/CT. The patient received an intravenous injection of 200 mCi of [177Lu]Lu-FAP-RTX, which was well tolerated, with no acute side effects reported. Blood tests remained within normal range. Beyond partial hair loss, no other adverse events were observed. Imaging studies including whole-body planar and SPECT/CT scans revealed intense tracer retention in the sacral mass and mild to moderate retention in the lymph node metastases up to 15 days post-treatment. Notably, indicative of a response to FAP-directed radioligand therapy, there was a resolution of drainage from a fistula in the intergluteal region. Follow-up imaging is still pending at the moment. **Conclusion:** This case is the first report on favorably sustained tumor retention of the radiopharmaceutical in a carcinoma patient undergoing FAP-directed radioligand therapy. With tumor response assessment still pending, longer follow-up and detailed observation is still necessary for a better understanding of potential benefits and side effects of FAP-directed radioligand therapy, especially in patients undergoing subsequent treatment cycles.

**Keywords:** FAP, Myoepithelial carcinoma, Radioligand therapy, [177Lu]Lu-FAP-RTX.