

# Uncommon solitary nasal extramedullary plasmacytoma detected by $^{18}\text{F}$ -FDG PET/CT

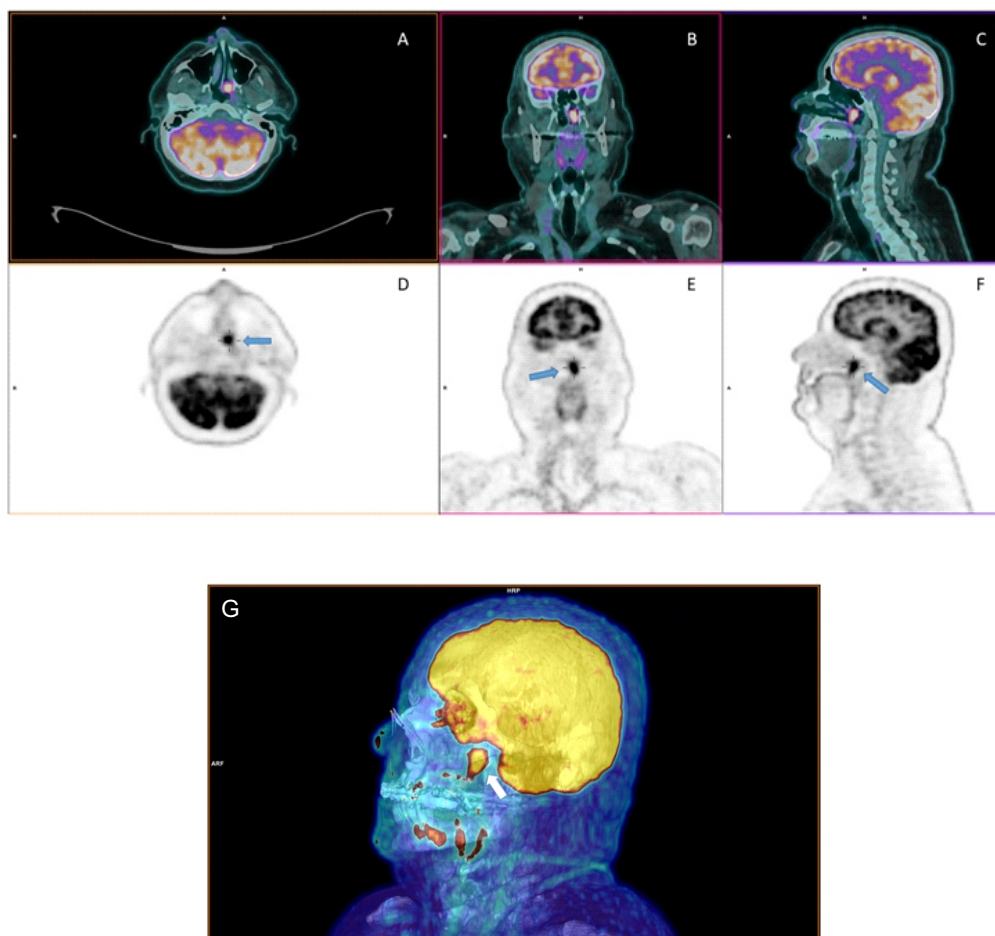
## Abstract

Extramedullary plasmacytoma (EMP) is an uncommon neoplastic proliferation of monoclonal plasma cells. Despite having a better prognosis and lower conversion rate to multiple myeloma in comparison to solitary bone plasmacytoma, EMP diagnosis can be challenging. Fluorine-18-fluorodeoxyglucose positron emission tomography/computed tomography ( $^{18}\text{F}$ -FDG PET/CT) certainly has an established role in EMP diagnostic workup. Herein, we describe a rare case of nasal cavity EMP, highlighting  $^{18}\text{F}$ -FDG PET/CT potential in the detection of EMP occurring in atypical sites and providing a useful comparison in the differential diagnosis with other  $^{18}\text{F}$ -FDG avid nasal pathologies.

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**Figure 1.** We present the case of a 60-year-old man with onset of nasal congestion and rhinolalia in the previous 3-4 months. The patient had history of papillary thyroid cancer (pT3mN1bMx) treated with surgery and radioactive iodine therapy (100mCi). Ultrasound scan of the neck was performed as a first level exam and demonstrated no pathological findings. A subsequent head and neck CT scan revealed a round lesion (d=17mm) with exophytic growth, placed in the medium and inferior meatus of the posterior left nasal cavity. Consequently, core biopsy of the mass demonstrated a malignant lesion compatible with extramedullary plasmacytoma (EMP). Subsequent serum proteins electrophoresis, immunofixation and bone marrow fine needle aspiration cytology did not show pathological findings. The patient underwent a whole body low dose CT scan that did not reveal any lytic lesions. As suggested by current guidelines, whole body  $^{18}\text{F}$ -FDG PET/CT was performed to definitely rule out any other localization of disease and to confirm the diagnosis of solitary EMP. The scan was carried out on a Siemens Biograph mCT Flow tomograph, 60 minutes after intra-venous injection of 360MBq of  $^{18}\text{F}$ -FDG. Data acquired with the CT scan were used for attenuation correction and fused with PET images. PET/CT data were reconstructed using a dedicated commercial workstation along axial, coronal and sagittal. Axial, coronal and sagittal  $^{18}\text{F}$ -FDG PET/CT fused (A-C) and PET (D-F) images showed a focal lesion of intense uptake (SUVmax 12.8) corresponding to the left nasal mass (blue arrow). No other areas of pathologic  $^{18}\text{F}$ -FDG uptake were detected. A 3D reconstruction of head and neck PET/CT scan was also generated (G). Therefore, diagnosis of solitary EMP was confirmed and the patient was referred for Guided Radiation Therapy. Volumetric Modulated Arc Therapy (VMAT) was planned for 50Gy over 25 daily 2Gy conventional fractions, as recommended by most recent guidelines [1].

Extramedullary plasmacytoma is uncommon, accounting for 3%-5% of all plasma cell malignancies [3, 4]. It consists in a neoplastic proliferation of monoclonal plasma cells and is traditionally divided into solitary or multiple [5]. Extramedullary plasmacytoma could potentially arise from every soft tissue, with upper respiratory tract as the most frequent localization. Extramedullary plasmacytoma has a better prognosis and lower conversion rate to MM in comparison to solitary bone plasmacytoma [1, 3].

Our case underlines the important role of  $^{18}\text{F}$ -FDG PET/CT in the diagnostic workup of plasmacytoma and the fact that, although uncommon, nasal plasmacytoma should be considered in the differential diagnosis with other  $^{18}\text{F}$ -FDG avid nasal pathologies, both malignant (in particular Squamous Cell Carcinoma) and benign (for example Sinonasal Schneiderian Papilloma) [6].

## **Bibliography**

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