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Clinical case

PET/CT role in a MM patient presenting with a skull plasmacytoma

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Introduction

PET/CT is valuable to access bone disease and extramedullary sites in Multiple Myeloma (MM).[1] We present a patient with MM with a skull plasmacytoma at diagnosis and the role of PET/CT in response evaluation.

Case description

- **Clinical Presentation**

A 49 years old gentleman presented with a growing tumefaction in the right parietal region. He also had mild scapular pain with movement and over diagnostic work-up back pain emerged.

On physical examination he presented an exophytic fixed mass on the parietal right region with no tenderness or skin alterations. Neurological examination was normal.

- **Diagnostic Work-Up**

Cranial RM showed an expansive lesion originating from the right parietal bone, 7x4x6cm, molding the encephalic parenchyma. Incisional biopsy showed bone and soft tissue infiltration with atypical plasmocytes. Analytical work-up, including bone marrow evaluation, established the diagnosis of IgA kappa MM R-ISS I (**table 1**).

Blood tests	
Hemoglobin (g/dL)	14,4
ESR (mm/h)	47
Creatinine (mg/dL)	1,0
LDH (U/L)	97
Albumin (g/dL)	3,9
B2-microglobuline (mg/L)	2,26
Calcium (mg/dL)	10.4
Serum Imunofixation	Monoclonal for IgA kappa
Immunoglobulin (mg/dL) IgA IgG IgM	 232 852 110
Light free chain (mg/dL) Kappa Ratio k/λ	 141 150
Urinalysis	Bence Jones proteinuria (kappa light chain)
Marrow aspirate	12% plasmocytes. FISH - no alterations.
Trephine biopsy	40% CD138+CD56+ kappa light chain (6:1) plasmocytes

Table 1 – Diagnostic evaluation.

PET/CT detected several ^{18}F-FDG avid osteolytic lesions on axial skeleton, long bones, and a lytic bone lesion on the right parietal skull with a growing intra and extra-cranial mass (**figure 1**).

- **Treatment**

VRDx5 plus RT over skull plasmacytoma and affected dorsal vertebra, followed by ASCT (which is being performed at the present date).

- **Response**

CR was obtained after induction - serum and urinary fixation were negative, bone marrow plasmocytes on aspirate were < 5%.

On PET/CT metabolic response was achieved over skull plasmacytoma, despite small reduction in tumor size (**figure 2**).

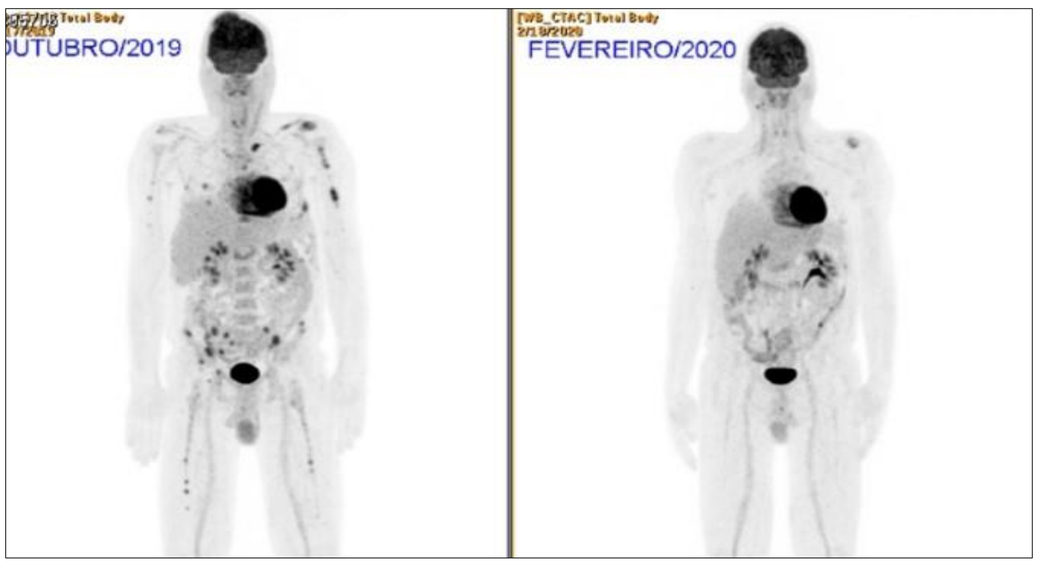

Figure 1. Right image – PET *scan* at diagnosis. Left – PET scan after induction treatment.

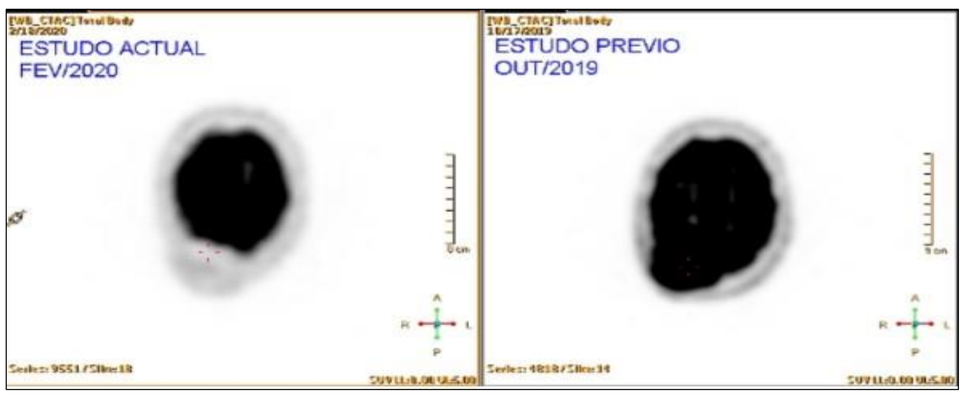

Figure 2. The right image compares brain image after treatment showing no ^{18}F-FDG captation on the right parietal bone.

Conclusion

The present case highlights the role of PET/CT in detecting active disease after treatment.

References

[1]Cavo M, et al. Role of ^{18}F-FDG PET/CT in the diagnosis and management of multiple myeloma and other plasma cell disorders: a consensus statement by the International Myeloma Working Group. Lancet Oncology. 2017 April.

Acknowledgements and Contact

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