



The Role of Magnetic Resonance Imaging of the Spine in Patients with Multiple Myeloma: A Case Report

Karla Estela AB^{1,*}, Claudia Viviana BJ² and Roberto RV²

¹Resident of the Specialty of Diagnostic and Therapeutic Imaging of the Postgraduate School in Naval Health, Mexico

²Specialist in Radiology, Naval Medical Center, Mexico

*Corresponding author: Karla Estela AB, Naval Medical Center (CEMENAV), Calz de la Virgen, Presidentes Ejidales 1ra Secc, 04480 Mexico City, Mexico; Tel: +525544782544; E-mail: [abundizkarla\[at\]hotmail\[dot\]com](mailto:abundizkarla[at]hotmail[dot]com)

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Abstract

The magnetic resonance study in patients with a history of multiple myeloma helps us to assess bone marrow, in terms of spinal resonance in symptomatic patients; it allows us to rule out vertebral involvement, extra dural, intradural, spinal cord injuries and degenerative pathology. We present the case of a patient with a diagnosis of multiple myeloma, who referred long-term back pain, showing in MRI of the spine involvement of the disease, assessed by a treating physician who determined not to find pathology at this level, thus recalling that the Imaging studies must be valued by the specialist in that area, as well as always taking into account the type of injuries that we can find and above all, adequate interdisciplinary communication.

Keywords: Multiple myeloma; Magnetic resonance

Case Report

A 55-year-old male patient with a diagnosis of lambda IgG multiple myeloma, ISS category 3 and follow-up with PET / CT 2019/12 (Figure 1), undergoing chemotherapy with the KTD scheme (Carfilzomib, thalidomide, dexamethasone). He referred lumbar and dorsal pain of approximately one month of evolution and VAS (9/10), predominantly nocturnal and in dorsal decubitus position, assessed by algology in treatment with gabapentin, buprenorphine and tramadol with paracetamol without improvement.

Subsequently evaluated by radio oncology, who requested simple magnetic resonance images of the dorsal-lumbar spine (Figure 2), finding lesions of extra and intradural location at the level of T7-T11, with contact of the spinal cord.

The patient was reevaluated by an orthopedic doctor and a radio oncology doctor, after performing an MRI, indicating discharge for not observing abnormalities, without waiting for radiological interpretation. Later reevaluated by the hematology and pain clinic, due to persistent symptoms, which after seeing the

radiological report and discussing the case with neuroradiology, concluding extent of known disease (multiple myeloma), meriting new treatment (radiotherapy).

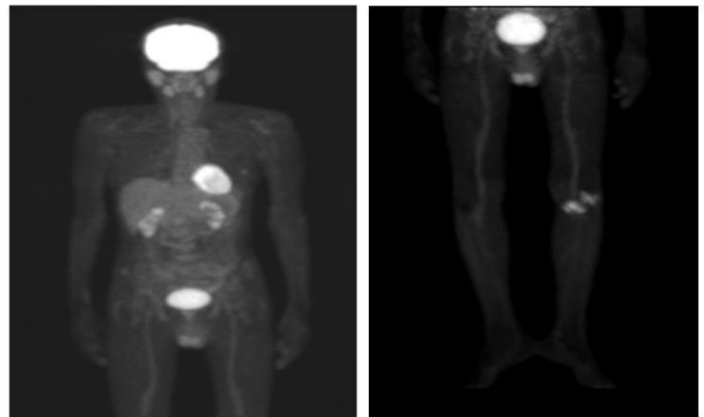


Figure 1: Whole body PET / CT with 18F-FDG, showing multiple lithic lesions in generalized bone marrow as well as in external lateral condyle and left tibial plateau with hypermetabolism associated with adjacent inflammatory changes.

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Discussion

Multiple myeloma represents the second most common hematological neoplasm behind non-Hodgkin lymphoma and the most frequent with affection to the skeleton [1], being in the imaging studies the first manifestations at the bone level. Since the appearance of radiography, this has been the most used throughout time and up to our time, both in developed and underdeveloped countries; the spectrum of findings associated with this pathology can range from a simple lithic lesion observable by this method. However, in some other cases this may not be evident and the use of multimodal imaging such as tomography should be resorted to, as for FDG PET / CT a sensitivity of 88.7% is accepted for detection of bone marrow involvement [2] regarding MRI images, these are useful in patients with symptoms and normal findings by conventional radiography and in suspicion of solitary bone plasmacytoma [3].

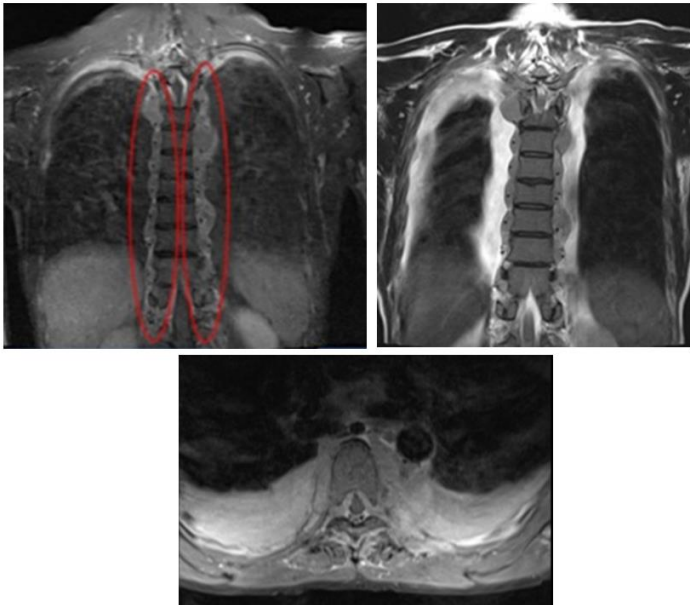


Figure 2: MRI T1 with contrast and T2 in the coronal plane, with extensive solid lesion of intra and extra dural location, contacting and shaping spinal cord predominantly at T7-T11 (T1 with contrast).

Magnetic resonance imaging is particularly suitable for obtaining images of the bone marrow, spinal resonance can give us important information from involvement of vertebral bodies, spinal cord, extradural or intradural lesions, the characteristics of the lesions will depend on whether they have been treated or not, nontreated lesions are hypointense to muscle on T1-weighted images and enhance after intravenous administration of gadolinium-based contrast material [4].

Conclusion

In our case, the use of contrast medium being important and considering that a back pain or low back pain and history

Multiple myeloma can be a manifestation of the disease, as well as having adequate interdisciplinary communication and allowing the most qualified person in image review (radiologist, neuroradiologist or with image graduates) to issue their diagnosis before making a therapeutic decision, always in favor of the patient.

Abbreviations

IgG: Immunoglobulin G; ISS: International Staging System; VAS: Visual Analog Scale for Pain; MR: Magnetic Resonance; PET: Positron Emission Tomography; FDG: Fluorodeoxyglucose

References

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