Thoracic Solitary Plasmacytoma: Single Indonesian Teaching Hospital Experience

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ABSTRACT

Plasmacytoma is a rare disease, which afflicts two to three people per every 100,000 of the general population. Solitary plasmacytoma accounts for 5% of the plasma cell neoplasm. Solitary plasmacytoma of the bone appears more vividly in the axial skeleton (25-60%), which has the red marrow and usually affects the thoracic vertebrae. We report two cases who has a bilateral weakness inferior extremity. After being treated for the muscle pain, his symptoms of pain were changed into weakness and allesthesias. We checked the MRI and found a mass lesion in the T9 vertebra, but there were no significant laboratory findings, in blood and urine samples. Finally, he got a laminectomy due to the aggravation of the weakness. The result of biopsy indicated that it was a solitary plasmacytoma of the spine. After 5 months later, the weakness had disappeared.

Keywords: Laminectomy, Plasmacytoma, Solitary spinal tumor.


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INTRODUCTION

Plasmacytoma is a rare disease, which afflicts two to three people per every 100,000 of the general population. Solitary plasmacytoma accounts for 5% of the plasma cell neoplasm. Solitary plasmacytoma of the bone appears more vividly in the axial skeleton (25-60%), which has the red marrow and usually affects the thoracic vertebrae. Plasma cell (PC) neoplasms are included in the World Health Organization (WHO) classification and encompass clonal PC proliferations with a wide range of clinical manifestations and behavior, which, in most cases, are associated with the production of a monoclonal immunoglobulin, or M protein, detectable in the serum and/or urine. In the absence of disseminated bone marrow involvement, the WHO recognizes 2 types of plasmacytoma: solitary osseous plasmacytoma (SOP) and extramedullary plasmacytoma (EMP). Primary EMPs (PEMPs) are rare, constituting fewer than 5% of all PC neoplasms. Progression to disseminated PCM is infrequent, occurring in approximately 15% of cases. For unknown reasons, PEMPs have a striking propensity for involvement of the upper aerodigestive tract, while testis, dermis and retroperitoneal infiltration are very rare. The diagnosis of SOP and PEMP should be made only when there is a negative bone marrow result and no clinical or radiologic evidence of more widely disseminated disease or MM. There are no consensus guidelines for treatment, but EMP is exquisitely radiosensitive and external beam radiation provides excellent disease control in most cases, surgery may be considered for some sites and the 10 years overall survival rate is 70%. We present an unusual case of multicentric extramedullary plasmacytoma presenting on different occasions at four separate sites.

CASE REPORTS

Case 1

A 49-year-old man was presented to the outpatient clinic of the Department of Neurosurgery, Hasan Sadikin Hospital, Universitas Padjadjaran with complaints of bilateral inferior paraplegia. He complained of persisting weakness, so we checked a thoracic MRI for further diagnosis. In an MRI scan, we found a lesion occupying the 9th thoracic vertebral body and part of the posterior vertebral structure. Moreover, from the T1WI contrast showed enhance homogenously and T2 WI images showed a low signal intensity of the tumor (Fig. 1). The tumor invaded one vertebral body and one bone marrow, the right-side neural and spinal canal, posterior spinal process after performed laminectomy decompression and histologic result was plasmacytoma (Fig. 1).
Case 2
A 56-year-old woman was presented to the outpatient clinic of the Department of Neurosurgery, Hasan Sadikin Hospital, Universitas Padjadjaran with complaints of bilateral inferior paraplegia. He complained of persisting weakness, so we checked a thoracic MRI for further diagnosis. In an MRI scan, we found a lesion occupying the lumbar 1 vertebral body and part of the posterior vertebral structure. Moreover, from the T1 contrast showed enhance homogenously and T2 images showed a low signal intensity of the tumor (Fig. 2). The tumor invaded one vertebral body and one bone marrow, the right-side neural and spinal canal, posterior spinous process, after performed laminectomy decompression and histologic result was plasmacytoma (Fig. 2).

DISCUSSION
Neoplasm of the plasma cell can be divided as the plasma cell myeloma, plasmacytoma, immunoglobulinopathy, osteoclastic myeloma, and heavy-chain disease. Among these diseases, plasmacytoma is a proliferative disorder of the plasma cell neoplasm, which could biologically be considered malignant. It is a truly unique disease, taking only 5% of the entire plasma cell neoplasms. Additionally, it can be divided into a solitary plasmacytoma of the bone and extramedullary plasmacytoma. Diagnosis can be done by physical, radiological and laboratory tests, but the clinical confirmation can be done by a biopsy. Furthermore, solitary plasmacytoma tends to develop into multiple myeloma, but related prognosis has not been defined yet. Through local treatments that targets the plasmacytoma, only 50% of the entire patient population proceeds into multiple myeloma. Thus, in case of solitary plasmacytoma, we must do a biopsy and find the other site of the lesion, which may exist for exact diagnosis (Fig. 3).

CONCLUSION
Clinical onset of spinal disseminations is uncharacteristic, with pain and muscle contracture as first clinic manifestations. Radiographic evaluation is uncharacteristic in early stages and spinal MRI is mandatory in cases with rebel pain, unresponsive to conservative treatment, in order to perform surgery before spinal cord compression syndrome occurs. Early diagnosis is associated with better prognosis. Recommended treatment is surgical resection and systemic and intrathecal chemotherapy adapted to histological form of each tumor. In selected cases, if indicated radiotherapy can also be associated.

CONSENT
Informed consent was obtained from the patient for publication of this case report and any accompanying images. The family was present at the time.

AUTHOR’S CONTRIBUTIONS
FY, RHD, SEO, MZA had examined, treated, observed, and followed up the subject of this case. FY, RHD and SEO performed the operation on the patient. All authors participated in writing the manuscript. All authors have read and approved of the final manuscript.

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Figs 3A and B: (A) Hematoxylin and eosin stain (200× original magnification) demonstrates discohesive plasmacytoid cells with basophilic cytoplasm, eccentric nuclei and coarsely clumped chromatin and (B) hematoxylin and eosin stain (400× original magnification) of the tumoral infiltration area reveals typical clock face pattern nuclei and (arrowheads) in plasma cells diagnostic of plasmacytoma.

REFERENCES