Bangladesh Journal of Neuroscience 2016; Vol. 32 (1): 39-42

CASE REPORTS

Pulsatile Midline Solitary Plasmacytoma in the Frontal Head Region-A Case Report"

MD. ATIKUR RAHMAN[1], AKLAQUE HOSSAIN KHAN[2] , KANAK KANTI BARUA[3]

Abstract

Primary craniocerebral plasmacytomas are uncommon and represent only 0.7 % of all plasmacytomas. In this case solitary plasmacytoma in the midline frontal head region of the skull and discuss the clinical features and prognosis of this tumor. Plasmacytoma can present as multiple myeloma, solitary plasmacytoma of the bone or extramedullary plasmacytoma. Solitary plasmacytoma is a rare entity that composes of malignant plasma cells and involves the bone to form only one or two lesions without evidence of disease dissemination. It accounts for only 4% of malignant plasma cell tumors. 50 years old male was suffering from plasmacytoma in the frontal head region in our case which is pulsatile. On images showed multiple differential diagnosis but after operation histological examination revealed plasmacytoma.

Keywords: *Plasmacytoma, Pulsatile, Solitary*

Abbreviations: *CT (Computed Tomography), MRI (Magnetic Resonance Imaging), MRV (Magnetic Resonance Venography), CSF(Cererbrospinal Fluid).*

Introduction:

Solitary plasmacytoma is a circumscribed neoplastic lesion with no clinical or radiological signs of systemic involvement and accounts for some 7 % of myelomas[1,2,3,4]. Solitary bone plasmacytoma is described as a single lytic lesion without signs of myeloma cells on bone marrow examination, even when paraproteins are present in serum and/or urine. This neoplasm appears in about 5 % of patients with plasmacytoma and most frequently localizes in the vertebral column. Primary craniocerebral plasmacytomas are uncommon they represent 0.7 % of cases[3,5]. We report one case of solitary plasmacytoma of the skull and discuss the clinical features and treatment of this uncommon tumor in the light of the published cases.

Case report:

50 years old male had been suffering for five months from a oval swelling in the midline of frontal head region which was gradually increasing in size (Figure 1). On local examinations following features are found: Midline swelling is in frontal head region of coronal suture which is

- oval
- overlying skin shiny
- pulsatile
- measurement about 10X10 cm
- firm in consistency
- not fluctuating.
- fix with underlying structures
- Little bit fix with overlying skin
- Local temperature raised,
- Prominent superficial vein was seen

Skull radiographs showed a big osteolytic area localized in the midline frontal bones in front of coronal suture (Figure1). CT scan of brain showed a midline frontal mixed intensity osseous lesion with an electron density slightly greater than the brain and contrast enhancement. The bone is mild hypertrophied. MRI demonstrated a midline frontal homogeneous mass, isointense in Tl-weighted images with the cerebral parenchyma and slightly hyperintense in T2-weighted images (Figure 2). The lesion presented a contrast enhancement but

1. Assistant Professor, Department of neurosurgery, Bangabandhu Sheikh Mujib Medical University, Dhaka
2. Associate Professor, Department of neurosurgery, Bangabandhu Sheikh Mujib Medical University, Dhaka
3. Professor, Department of neurosurgery, Bangabandhu Sheikh Mujib Medical University, Dhaka.

intra or extradural could not identify clearly. MRV showed occlusion of anterior third part of the superior sagittal sinus (Figure 2). Then it was diagnosed as a case of parasagittal meningioma. Midline frontal craniotomy was done followed by macroscopical total removal of a nodular tumor which fully extradural and mild adherent with the dura mater. Involved dura and bone was removed followed by duruplasty and cranioplasty respectively (Figure 3). The histological diagnosis was plasmacytoma. Tumor tissue consisted of sheets of mature plasma cells. The plasma cells showed an increased nucleocytoplasmatic ratio and infrequent mitotic figures. Giemsa stain showed that the cells had moderately pleomorphic nuclei with clumped and marginated chromatin. CSF analysis showed nothing pathological, and the urine test for Bence Jones protein was negative. Bone marrow study was

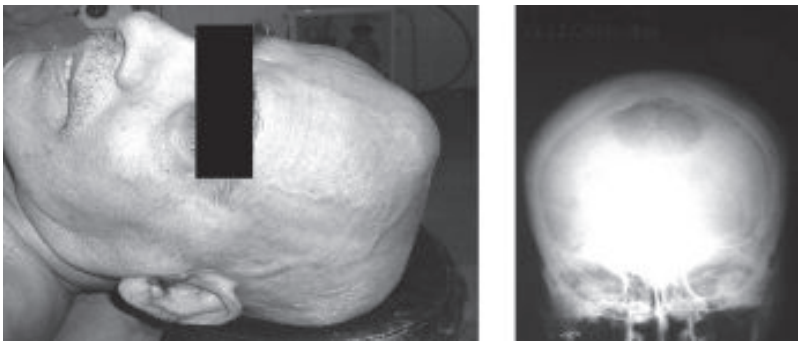

Fig.-1: *The patient with midline frontal swelling and x-ray skull shows big oesteolytic lesions.*

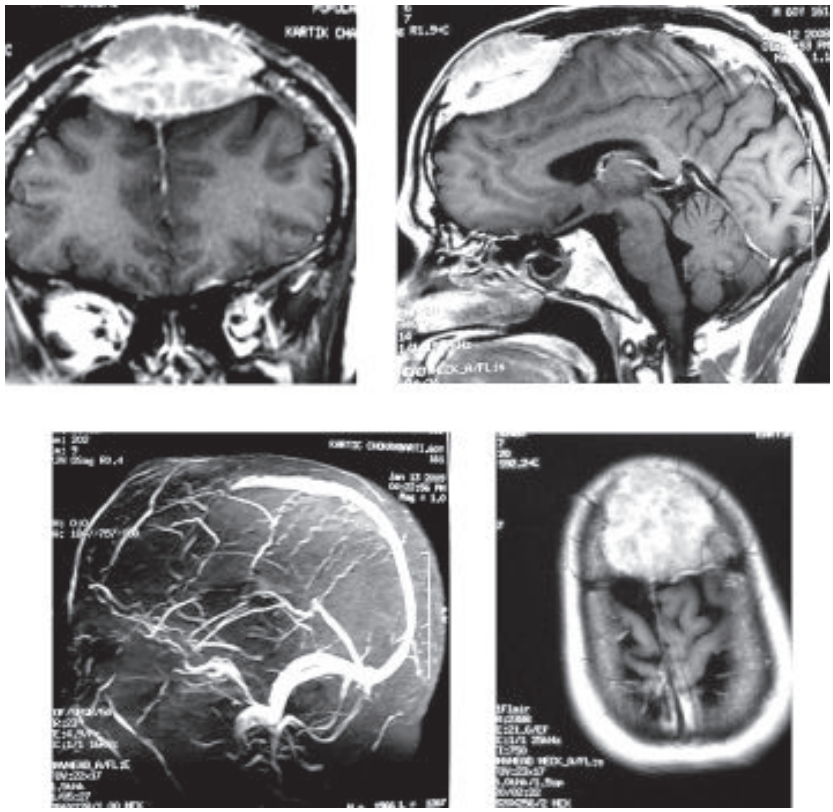

Fig.-2: *MRI of brain shows contrast enhanced lesions in different views and MRV shows obstructions of anterior part of superior sagittal sinus.*

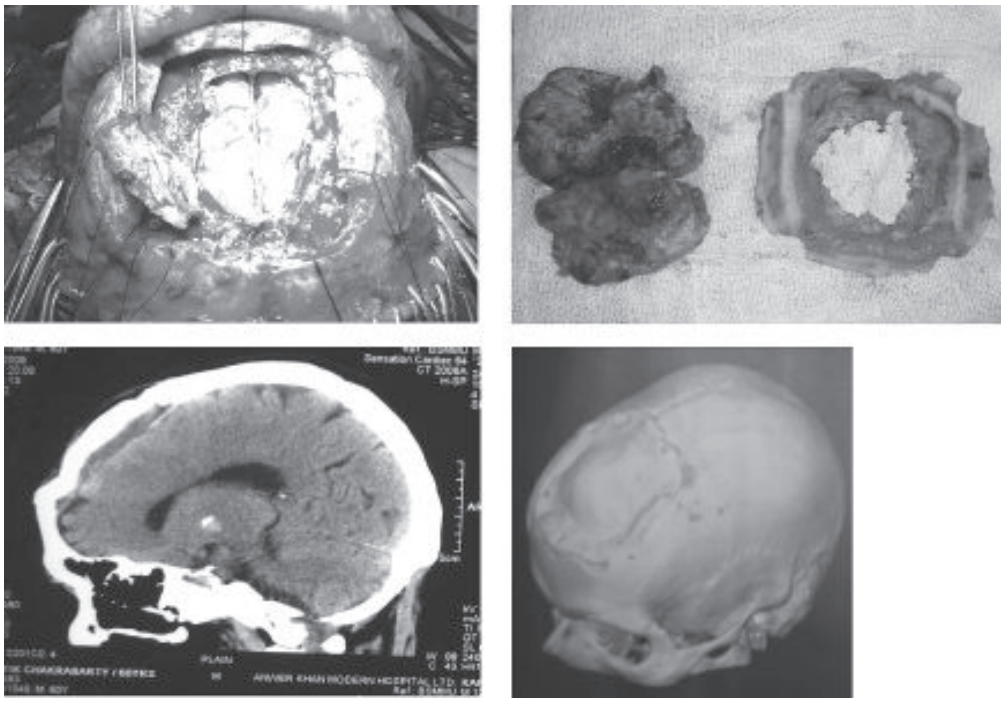

Fig.-3: *Per operative picture after removing the bone and involved portion of dura mater. Tumor and involved bone on the top right side. Bone shows oesteolytic area. Post operative CT scan shows total removal of the tumor and 3D picture shows cranioplasty areas in the frontal region.*

also normal. He never suffered from systemic neoplastic disease. Post operative CT showed total removal of tumor and cranioplasty was in proper place (Figure 3). Follow up after six months he was very well and no further deterioration.

Discussions:

Multiple myeloma (or simply myeloma) is a neoplasm of a single clone of plasma cells characterized by proliferation of plasma cells in bone marrow, infiltration of adjacent tissues with mature and immature plasma cells, and the production of an immunoglobulin, usually monoclonal IgG or IgA . Circulating pre-myeloma cells lodge in appropriate microenvironments (e.g. in bone marrow) where they differentiate and expand. Although multiple myeloma is often referred to in the context of “metastatic lesions” to bone, it is also sometimes considered a primary bone tumor. If only a single lesion is identified, then it is referred to as a plasmacytoma[6]. In this case patient was suffering from single lesion in skull bone. Cranial plasmacytomas are rare lesions that can arise from the calvarium, dura or skull base and could be the harbinger of a more widespread systemic myeloma. Very rarely, it has been described as the sole presenting feature of underlying multiple myeloma. On imaging, these lesions can be confused with meningioma, cranial secondaries or lymphoma. Zigouris *et al*. described a case of an elderly male with cranial plasmacytoma, who presented with progressive right hemiparesis[7]. This type differential diagnosis we had also thought regarding our case. But histopathology finally confirm the diagnosis, it was a case of plasmacytoma.

Conclusions:

Varieties of patient we have found in neurosurgical department. Sometimes actual diagnosis is very difficult even after lots of investigation. Clinical evaluation, imaging studies and histopathology report may be different in some patient. If we make proper plan for surgery before going to operate or in per operative, then we can significantly reduce the morbidity and mortality rate of the patient, even when diagnostic dilemma is present.

References:

1. Arienta C, Caroli M, Ceretti L, Villani R: Solitary plasmacytoma of the calvarium: two cases treated by operation alone. Neurosurgery, 1987; 21; pp. 560-63.
2. Chang SC, Jing BS: Solitary plasmacytoma in the cranial cavity. J Neurosurg ,1970; 33; pp.471-74.
3. Preez JH, Branca EP: Plasmacytoma of the skull: case report. Neurosurgery,1991; 29;pp. 902-06.
4. Salmon SE, Cassidy JR: Plasma cell neoplasm. In: DEevita JR, Hellman S, Rosemr SA(eds): Cancer Principles and practice of oncology. Lippincott, Philadelphia 1989.
5. Jakurowski J, Kendall BE, Symon L: Primary plasmacytomas of the cranial vault. Acta Neurochir , 1980; 55; pp.117-134.
6. Greenberg MS, MD, 2016, 'Tumors of the spine and spinal cord', In: Handbook of neurosurgery, 7th ed., Thieme Publishers, New York, p. 740.
7. Zigouris A, Drosos D, Alexiou GA, et al. Primary plasmacytoma of the cranial vault: a case report. Cases Journal. 2009; 2: 9154.