

Solitary plasmacytoma of the Clivus: a case report

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Section: Neuroradiology

Imaging Technique: CT

Imaging Technique: MR

Case Type: Clinical Cases

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Patient: 78 years, male

Clinical History:

A 78-year-old man presented with a 1 year history of headache. Physical and neurological examinations were normal. The routine blood and urine laboratory findings were normal.

Imaging Findings:

The patient was referred to CT examination. There was an expansion and osteolytic lesion without a sclerotic rim in clivus bone on CT (Figure 1). The tumor was slightly hyperdense on precontrast CT, and enhanced markedly and homogeneously on postcontrast CT. To demonstrate the location, extension and invasion of the tumor, we planned MRI for its multiplanar imaging capability. On MRI, the tumor was isointense to the brain on T1-weighted (TR 600 ms/TE 15 ms) and iso- or slightly hyperintense to the cerebellum on T2-weighted (TR 3000 ms/ TE 90 ms) images. After intravenous Gd-DTPA injection (0.1 mmol/kg) lesion was markedly enhanced. There were also cystic areas seen inside the tumor (Figure 2). The clivus was slightly expanded without cortical destruction and its shape was preserved. Pterygoid plates and anterior-posterior clinoid processes were destroyed. Tumor encased the cavernous portion of internal carotid arteries but did not obliterate them. There were no invasion to optic chiasm and nerve, sphenoid sinus was partially obliterated.

Discussion:

Plasma cell myeloma can be either localised (solitary plasmacytoma; 30%) or generalised (multiple myeloma; 70%). Solitary plasmacytoma may arise from either in bone or in extramedullary tissues (7). Solitary plasmacytoma is rare and accounts for 5–10 % of plasma cell disorders (1). About a half of solitary plasmacytomas of bone occur in the spine, especially in the thoracic region, and rarely in the skull (1, 2). It was reported that these cases occurred primarily in the parietal bone, occipital bone, frontal bone, temporal bone and the skull base is an extremely rare site (8). Until now, only two cases were reported in the sphenoid bone (8). Criteria for the diagnosis include (a) a solitary bone lesion, (b) bone marrow plasmacytosis less than 10%, (c) biopsy evidence of plasma cell neoplasm and (d) absence of evidence of other lesions based on clinical examination or skeletal survey. The CT features reported by some authors (3, 4) are characterized by osteolytic lesion without sclerotic rim, hyperdense tumour with or without peripheral bone fragments, and marked and homogeneous postcontrast enhancement. These features were also observed in our case. The MRI findings have rarely been described. It is reported that the tumor shows isohypointensity on T1-weighted and hyperintensity on T2-weighted images. Signal intensities on MRI in our case were similar to those of previously reported cases. Only some cystic areas were seen in our case that has not been described before. There were no specific radiological features of solitary plasmacytoma of the skull. Differentiation of the plasmacytoma from other skull lesions, especially from meningiomas, chordoma or metastatic tumours, is not

easy (8). Plasma cell myeloma may show the same radiological manifestations. If the above mentioned radiological appearances are observed in a solitary clival lesion, a plasmacytoma must be included in the differential diagnosis.

Differential Diagnosis List: Solitary plasmacytoma

Final Diagnosis: Solitary plasmacytoma

References:

Bataille R, Sany J (1981) Solitary myeloma: clinical and prognostic features of a review of 114 cases. Cancer 48: 845. (PMID: [7248911](#))

Shih LY, Dunn P, Leung WM, Chen WJ, Wang PN (1995) Localised plasmacytomas in Taiwan: comparison between extramedullary plasmacytomas and solitary plasmacytoma of bone. Br J Cancer 71: 128. (PMID: [7819027](#))

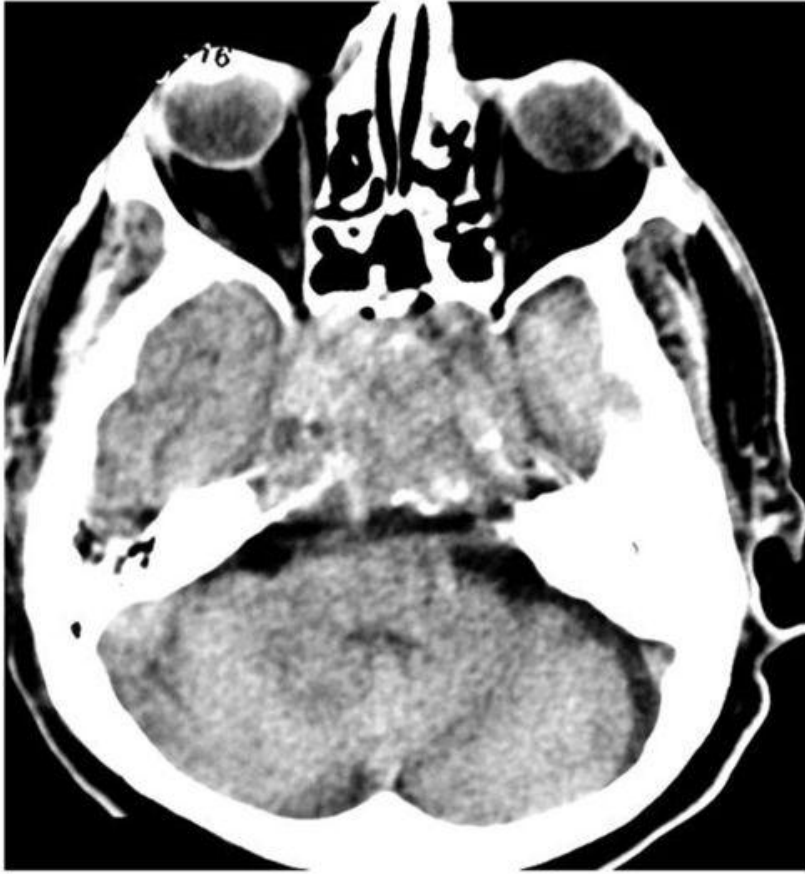
Wilson P, Chumas P, Van Der Walt JD (1990) Case report: solitary plasmacytoma of the frontal bone. Clin Radiol 42: 289. (PMID: [2225740](#))

Arienta C, Caroli M, Ceretti L, Villani R (1987) Solitary plasmacytoma of the calvarium: two cases treated by operation alone. Neurosurgery 21: 560. (PMID: [3683794](#))

Scully RE, Mark EJ, McNeely WF, McNeely BU (1992) Case records of the Massachusetts General Hospital, case 21–1992. N Engl J Med 326: 1417. (PMID: [9197219](#))

Figure 1

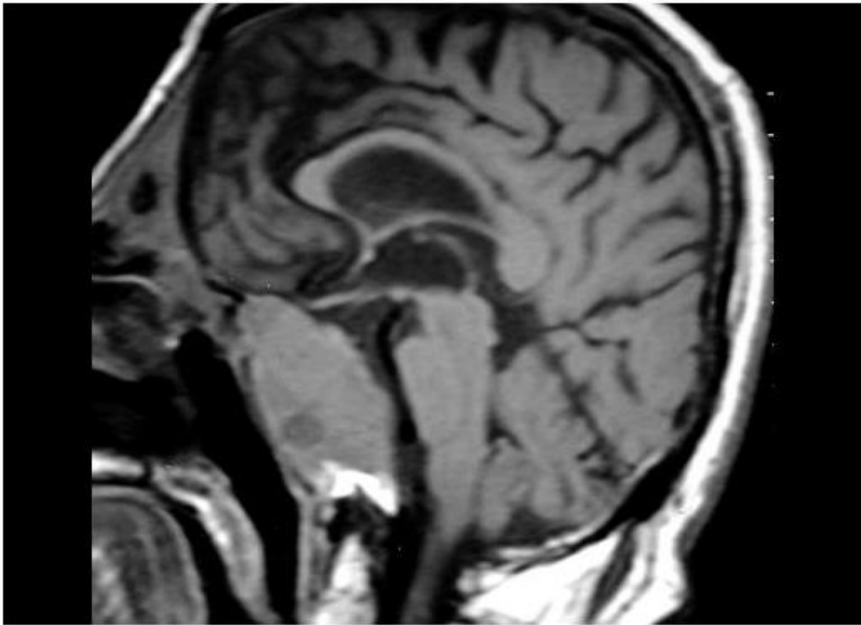
a



Description: Figure 1. On CT an expansion and osteolytic lesion without a sclerotic rim is seen in clivus bone. The tumor was slightly hyperdense on precontrast CT. **Origin:**

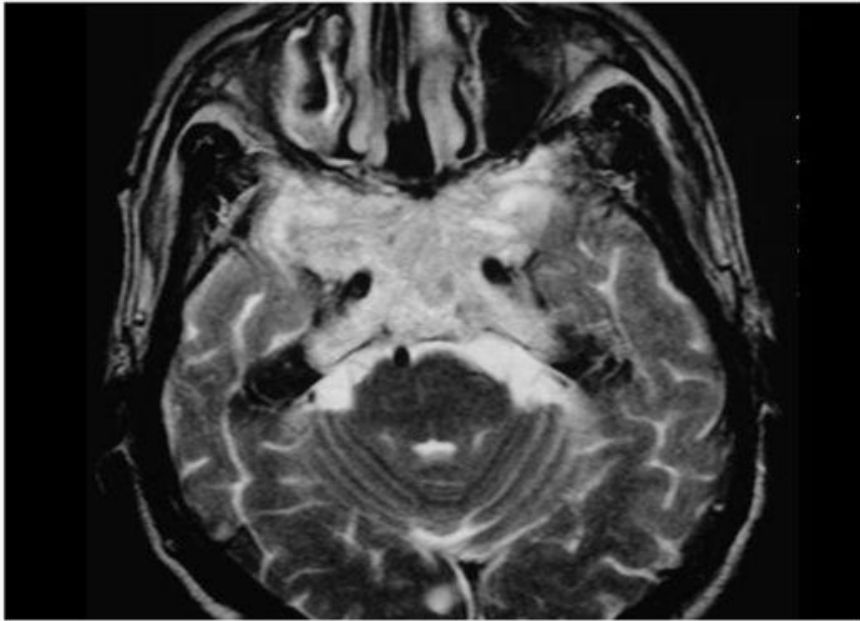
Figure 2

a



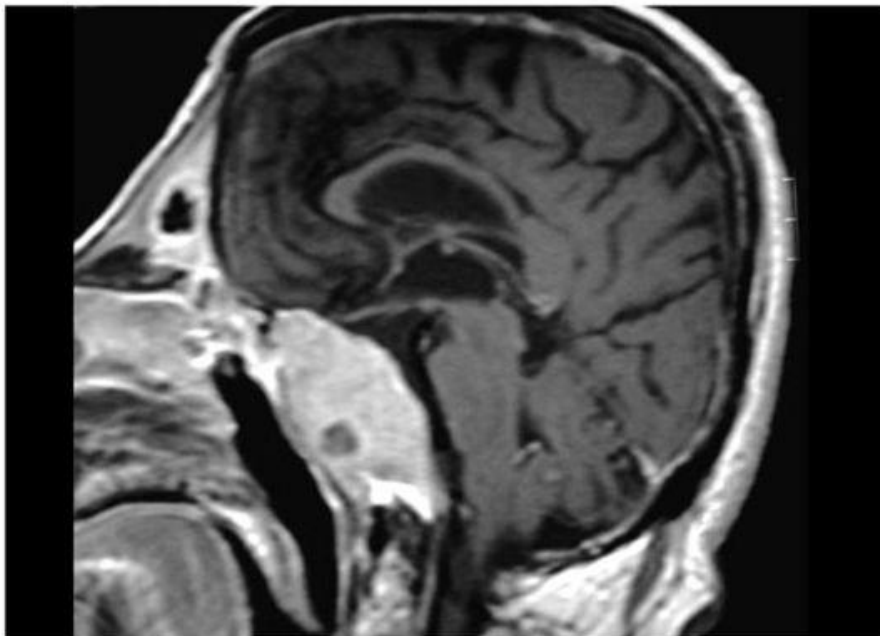
Description: On MRI, (a) the tumor was isointense to the brain on sagittal T1-weighted (TR 600 ms/TE 15 ms) **Origin:**

b



Description: (b) iso-or slightly hyperintense to the cerebellum on axial T2-weighted (TR 3000 ms/ TE 90 ms) images **Origin:**

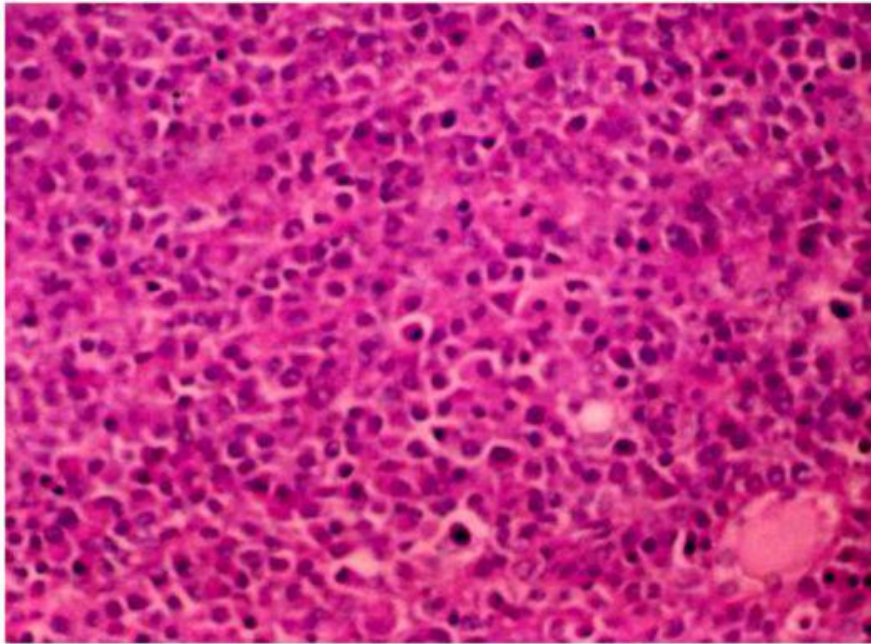
c



Description: After intravenous Gd-DTPA injection (0.1 mmol/kg) lesion was markedly enhanced. There were also cystic areas seen inside the tumor **Origin:**

Figure 3

a



Description: At surgical specimen of the lesion (haematoxylin and eosin x 100) the tumour tissue is highly cellular, and composed of medium sized polygonal cells with hiperchromatic eccentric nuclei. Tumour cells are expressed CD 68 and kappa light chain. **Origin:**