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Pathology

Extramedullary Plasmacytoma of Forehead -Diagnosed on FNAC

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Case Report

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Abstract: Plasmacytomas are tumours associated with multiple myeloma. They can be divided into intramedullary and extramedullary on the basis of their origin. We report a case presenting as forehead mass. FNAC of these mass revealed features of plasmacytoma following which MRI was done and multiple lytic lesions were identified in skull and patient was diagnosed as a case of multiple myeloma. The diagnosis was confirmed on histopathological examination of the biopsy received from the forehead mass.
Keywords: Forehead mass, FNAC, multiple myeloma, plasmacytoma.

INTRODUCTION

Plasmacytoma is pathological proliferation of plasma cell population and when arising outside the bone marrow is known as extramedullary plasmacytomas. Plasma cell neoplasms produce a wide spectrum of disorders ranging from benign solitary plasmacytoma to malignant multiple myeloma [1]. Plasmacytoma of frontoethmoidal region presenting as forehead mass is a rare entity. Only a few cases of plasmacytoma presenting as forehead mass have been described in literature [2]. The clinical presentation and neuro – radiological findings may be deceptive [3]. In our case, the patient presented with forehead mass for FNAC and was diagnosed as plasmacytoma on FNAC smears which was confirmed on biopsy after histopathological analysis of the tissue.

CASE REPORT

A 63 year old female presented to Department Of ENT with a soft tissue swelling in forehead region measuring 2.5 x 2.0 x 2.0 cm since 3 months and diminished vision since 2 months (Fig. 1). The patient also had history of fatigue, shortness of breath, bodyaches and joint pain. The patient was sent to Department of Pathology for FNAC of the swelling. FNA smears were cellular and revealed presence of numerous mature and immature plasmacytoid cells scattered singly as well as in clusters against a hemorrhagic background (Fig. 2). The features were suggestive of plasmacytoma. NCCT of head and neck region was performed which revealed ill-defined subtle hyperdense soft tissue attenuating lesion in the left frontal sinus and superomedial aspect of left orbit and multiple variable sized lytic lesions in the visualized bony calvarium, bilateral maxilla, skull base and upper cervical vertebrae (Fig. 3). CT findings suggested possibility of metastatic etiology ? myelomatous disorder. Incisional biopsy of left fronto-ethmoidal mass was performed under LA and sent for histopathological examination which confirmed the diagnosis of plasmacytoma (Fig. 4).

Fig-1: **Photograph of patient showing swelling on forehead extending into left orbital area**

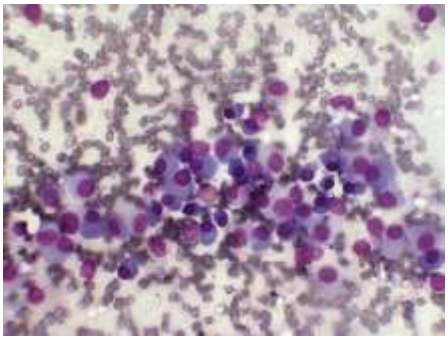

Fig-2: **Photomicrograph of cytology of the swelling showing mature and immature plasmacytoid cells (Giemsa; 400x)**

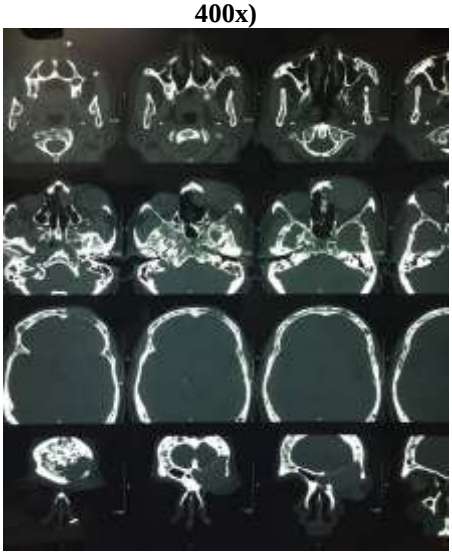

Fig-3: **NCCT image of skull**

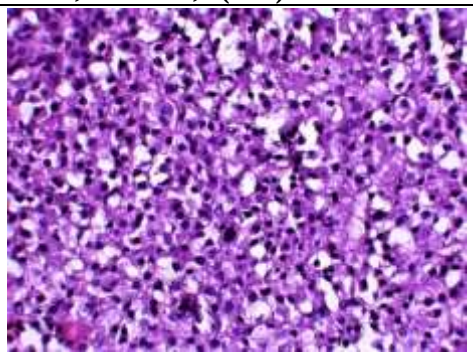

Fig-4: **Photomicrograph of HPE of biopsy from the swelling shows mature and immature plasma cells consistent with plasma cell neoplasm (H&E; 200x)**

DISCUSSIONS

Extramedullary plasmacytomas are plasma cell tumours that arise outside the bone marrow. They are most common in head and neck region followed by gastrointestinal tract, urinary bladder, CNS, thyroid, breast, testes, parotid gland, lymph nodes and skin [3-5]. Our case presented as swelling in forehead region. FNAC was performed and diagnosis of plasmacytoma was made on the smears examined. Plasma cell neoplasms comprise of multiple myeloma and solitary plasmacytomas. Solitary plasmacytomas are further divided into solitary pasmacytoma of bone and extramedullary plasmacytomas [6]. Solitary bone plasmacytoma is defined as localized buildup of abnormal plasma cells in the bone. Most commonly, these tumors develop in spinal column followed by pelvis, ribs, arms, face, skull, femur and sternum. Around 50-70% of patients with solitary bone plasmacytoma may develop multiple myeloma over a period of 10 years. Solitary extramedullary plasmacytoma is defined when the clump of abnormal plasma cell occurs outside the bone in soft tissue. Absence of expansion of the bone of skull base differentiates extramedullary plasmacytoma from plasmacytoma of bone. This distinction is important because risk of development of multiple myeloma is higher in solitary plasmacytoma than in extramedullary plasmacytoma. There is less than 10 % chance of this disease progressing to myeloma [7, 8]. The differential diagnosis of soft tissue forehead mass with bone destruction in absence of gross expansion of destroyed bone are metastasis, lymphoma, adenoid cystic carcinoma, chondrosarcoma and osteosarcoma [9]. All these can be ruled out on fine needle aspiration cytology of the mass as in our case. Prognosis of extramedullary plasmacytomas is better than solitary plasmacytoma. Plasma cell neoplasms are highly radiosensitive. Local irradiation of the mass is primary mode of treatment for extramedullary plasmacytoma followed by surgical resection if indicated. If associated with multiple myeloma, local irradiation of plasmacytoma is followed by systemic combination chemotherapy [10].

CONCLUSION

Extramedullary plasmacytomas are relatively rare neoplasms and rarely present as forehead masses. This case highlights the importance of fine needle aspiration cytology of forehead masses to determine the appropriate treatment as excellent clinical and radiological results can be obtained with radiotherapy occasionally followed by surgical resection of the residual tumour. FNAC thus obviates the need of extensive surgery of this anatomical region.

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