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NASAL CAVITY EXTRAMEDULLARY PLASMACYTOMA.

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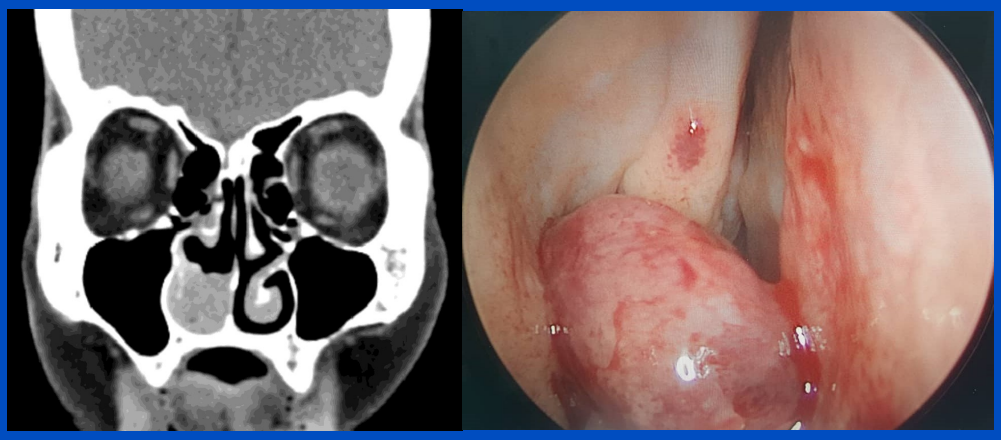

ABSTRACT

Extramedullary Plasmacytoma is a rare plasma cell tumour that commonly arises in the head and neck region, particularly in the sinonasal region. Herein, we report a case of nasal extramedullary plasmacytoma in an elderly woman, who presented to us with history of recurrent epistaxis and nasal blockage. She was successfully treated with endoscopic resection of the nasal mass. Nevertheless, the choice of treatment modality for this condition remains a topic of debate among clinicians. Extramedullary plasmacytoma, albeit rare, ought to be considered as important differential of nasal mass as it may serve as a precursor to multiple myeloma later on. Thus, long term follow-up is indicated for those patients.

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ABSTRACT

Extramedullary Plasmacytoma is a rare plasma cell tumour that commonly arises in the head and neck region, particularly in the sinonasal region. Herein, we report a case of nasal extramedullary plasmacytoma in an elderly woman, who presented to us with history of recurrent epistaxis and nasal blockage. She was successfully treated with endoscopic resection of the nasal mass. Nevertheless, the choice of treatment modality for this condition remains a topic of debate among clinicians. Extramedullary plasmacytoma, albeit rare, ought to be considered as important differential of nasal mass as it may serve as a precursor to multiple myeloma later on. Thus, long term follow-up is indicated for those patients.

Keywords: Extramedullary, Plasmacytoma; Nasal Septum; Multiple Myeloma; Surgical procedures, Operative.

INTRODUCTION

Extramedullary Plasmacytoma (EMP) is a rare malignant neoplasm of monoclonal plasma cells that arise from soft tissues with reported incidence of 0.04 cases per 100,000 individuals.[1] It is one of the three different entities of plasmacytoma and diagnosed once multiple myeloma is excluded. It commonly manifests in the upper respiratory tract, especially in the sinonasal region. Approximately 80% of EMP involves mucosa-associated lymphoid tissue of the upper airway.[2] Treatment of EMP involves single modality of either radiotherapy or surgery or combination of both modalities. It has risks of recurrence and progression to multiple myeloma, thus necessitating need of long-term follow-up. We hereby report a case of EMP of right nasal cavity in a 76-year-old lady, who was treated successfully with endoscopic resection of the mass. Characteristics and natural history of EMP are discussed together with a brief literature review of the treatment options.

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CASE REPORT

A 76-year-old lady presented to our clinic with symptoms of recurrent right-sided epistaxis and nasal obstruction for the past 6 months. She had unremarkable past medical history. Anterior rhinoscopy revealed a reddish-white mass in the right nasal cavity which was firm in consistency. There were no palpable neck nodes and cranial nerves examination was normal.

Rigid nasoendoscopy further confirmed the presence of a right-sided mass which was firm, insensate and friable. CT scan of the paranasal sinuses revealed enhancing mass measuring 2.7 x 0.9 x 1.4 cm, obliterating the right nasal cavity and abutting the nasal septum. The mass was well-confined within the nasal cavity (Figure 1). There were no bony erosion, intracranial and orbital extension noted. Biopsy was taken from the nasal mass and histopathological examination

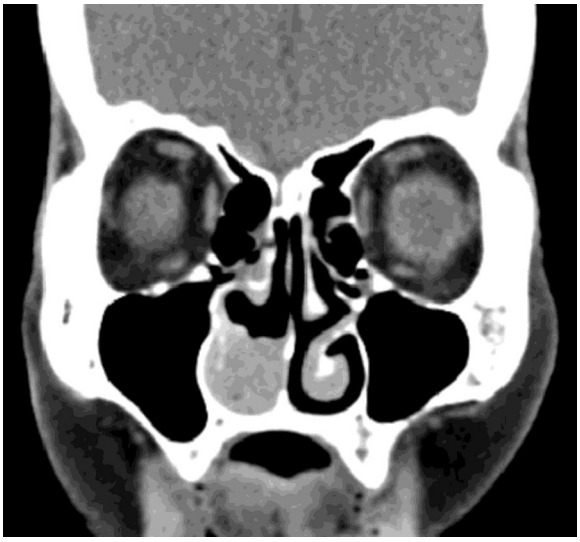

Figure 1: CT coronal section of the patient's face showing an enhancing soft tissue mass in the right nasal cavity.

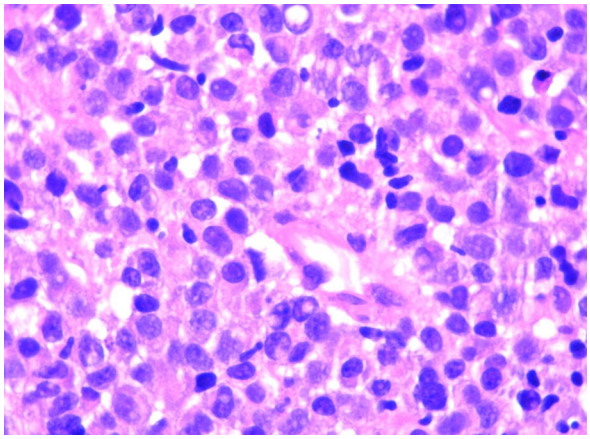

Figure 2: Neoplastic cells showing plasmacytoid appearance with the large cells frequently exhibiting higher nuclear/cytoplasmic ratio, more dispensed chromatin with prominent nucleoli. (x60hpf; H&E stain)

reported respiratory type epithelium with infiltration of malignant cells showing plasmacytoid differentiation (Figure 2). The tumour cells expressed CD79a and CD138 with kappa light chain restriction. Ki67 proliferative index was moderately high, ranging about 50% to 60%. A histological diagnosis of extramedullary plasmacytoma was made.

Routine blood tests, particularly haemoglobin, renal profile and calcium levels were all within normal range. Both serum and urine electrophoresis were negative for M component. CT of thorax, abdomen and pelvis showed no evidence of systemic myeloma or any osteolytic bone lesions. The patient underwent complete endoscopic surgical resection of the tumour. Intraoperatively, the nasal mass was noted to be pedunculated with stalk arising from septum (Figure 3). It measured about 4 x 2 x 2 cm and was removed entirely in two pieces (Figure 4).

Subsequent follow-up at 6 months demonstrated no evidence of recurrence and patient has been asymptomatic till date. Patient is planned for regular follow-up to monitor recurrence and systemic progression.

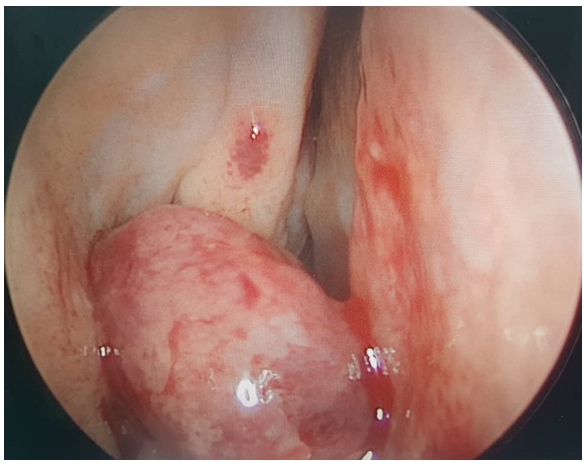

Figure 3: Solitary pedunculated mass in the right nasal cavity attached to the septum

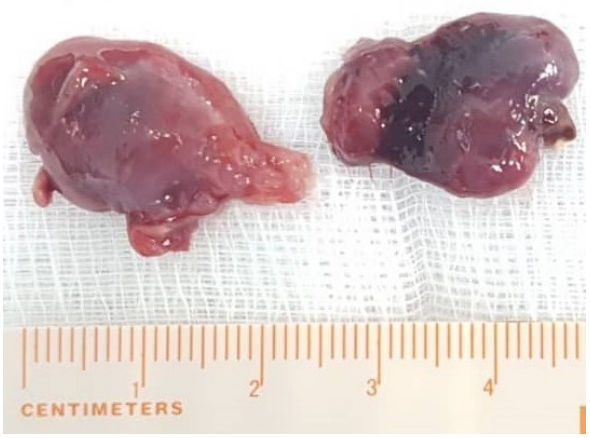

Figure 4: Mass removed completely in 2 separate pieces, measuring about 4x2x2 cm in dimension.

DISCUSSION

Plasmacytoma is a discrete mass of neoplastic monoclonal plasma cells, which was first described by Schridde in 1905.[2] The International Myeloma Working Group (IMWG) has further classified plasmacytomas into 3 different entities depending on the site of involvement and clinical features; namely Solitary Plasmacytoma of Bone (SPB), Extramedullary Plasmacytoma (EMP) and Multiple Solitary Plasmacytoma (MSP).[3]

As the name suggests, EMP is a localised plasma cell neoplasm that arises from soft tissue. It accounts for about 3% of all the plasma cell neoplasm and 1% of the head and neck malignancies.[4] EMP is diagnosed in the absence of systemic disease and has to be differentiated from extramedullary manifestation that may occur during the course of multiple myeloma.

Large proportions of EMPs, almost 80%, arise in the head and neck region, especially the upper respiratory tract.[1,2] In turn, the commonest affected areas in the upper respiratory tract are the nasal cavity or paranasal sinuses (43.8%), followed by nasopharynx (18.3%), oropharynx (17.8%) and larynx (11.1%). [1] EMPs tend to show male preponderance with M:F ratio of 3-4:1 and typically occurs in 6^{th}-7^{th} decade with around 95% of cases reported in patients above 40 years old.[1,2]

There is no definite aetiology for EMP. However due to its predilection to occur at the upper respiratory tract, chronic stimulation by inhaled irritants or viral infection has been postulated as causative factor.[5,6] The presenting features are related to the site of occurrence. As most of the lesions arise in the sinonasal/nasopharyngeal region, common symptoms include soft tissue swelling (80%), airway obstruction (35%), epistaxis (35%), pain (20%), proptosis (15%), nasal discharge (10%), regional lymphadenopathy (10%) or cranial nerve palsy (5%).[5]

The IMWG has published a set of criteria that must be fulfilled prior to establishing the diagnosis of EMP (Table I).[3]

Table I: Diagnostic criteria for solitary extramedullary plasmacytoma.

Extramedullary tumour of clonal plasma cells
No M-protein in serum and/or urine
Normal bone marrow
Normal skeletal survey/no osteolytic bone lesions
No related organ or tissue impairment

Thus, we have performed certain work-ups as mentioned earlier to rule out the presence of multiple myeloma in our patient. It is also imperative to distinguish EMP from other reactive plasma cell lesions and lymphoma. Immunohistochemistry plays an essential role in determining the monoclonality of the tumour. It has to be demonstrated that the infiltrate is entirely plasma cell without B cell component. Markers such as CD138, CD19, CD56, CD27, CD117 and cyclin D1 as well as staining for kappa and lambda light chains helps to confirm the diagnosis of EMP.[3] In our case, the possibility of lymphoplasmacytic lymphoma or Marginal Zone B-cell Lymphoma were ruled out by virtue of negative expression of CD 45 and the moderate Ki67 score unequivocally excluded plasmablastic lymphoma.

Wiltshaw described a clinical staging system for EMP, as follows: Stage 1 - Limited to extramedullary site. Stage 2 - Local extension or involvement of regional lymph nodes. Stage 3 - Multiple metastases.[6] Meanwhile, Batsakis defined five possible situations pertinent to the natural history or progression of the disease (Table II).[7]

An intriguing aspect of this entity has to be the treatment options and the subsequent follow-up protocol. The rarity of this disease coupled with scarcity of randomised clinical trials has led to an ambiguity among

Table II: Classification of Natural History of Extramedullary Plasmacytoma.

Stage	Description
1	Localized; solitary, controlled by surgery, radiotherapy or both; does not recur or become disseminated.
2	Locally recurrent; controlled by additional therapy.
3	Aggressive, persistent or recurrent disease; causing death through uncontrollable local extensions.
4	Local disease with "metastatic" involvement of regional lymph nodes without evidence of distant spread.
5	Local disease, recurrent or otherwise followed by dissemination and development of multiple plasma cell neoplasm and/or multiple myeloma.

clinicians regarding the optimal management. However, literature review would note that radiotherapy is the treatment of choice for EMP. This is due to the highly radiosensitive nature of the plasma cells.[8] Nevertheless, there are some clinicians who advocate surgery alone or combined therapy of surgery and radiotherapy. The choice of treatment depends on certain factors such as size and extension of the tumour besides fitness status of the patient. Many studies have reported high local control rates with radiation doses in the range of 40 – 50 Gy.[3] In cases where there is a small localised tumour, complete surgical excision is also deemed appropriate. In fact, the rate of local control with surgery alone is similar to that of with radiotherapy alone when clear surgical margins are obtained.[9] Most clinicians prefer combination therapy especially if complete surgical excision is doubtful or impossible. Alexiou et al reviewed 714 cases of EMP occurring in upper aerodigestive tract between 1905 and 1997 and found that the median overall survival or recurrence free survival was longer than 300 months for patient who underwent combined therapy as compared to a median survival rate of 144 months for patients who underwent radiotherapy and 156 months for surgically managed patients.[1] The same study nevertheless provided evidence that surgery alone would be the best option in EMP occurring in upper aerodigestive tract given that the resectability is good.[1] Chemotherapy may be considered for patients with refractory or relapsed disease and systemic progression.[10] In our patient, we opted for endoscopic surgical excision of the nasal mass as it was well-localised in the nasal cavity with no evidence of local extension or bony erosion.

Follow-up of patients with EMP is mandatory as there is tendency for EMP to either recur locally or progress to multiple myeloma. While local recurrence has been reported in 8%-30% of upper respiratory tract EMP, conversion to multiple myeloma is between 11% and 33% over 10 years.[8] It is notable that EMP has lower tendency to progress to multiple myeloma as compared to other plasma cell neoplasms. The highest risk of conversion is in the first 2 years after the diagnosis has been made which necessitates follow-up with a shorter time interval. Nevertheless, conversion to multiple myeloma has been documented up to 15 years after the initial diagnosis, thus implying the need for long-term follow-up. The follow-up protocol for EMP has not been standardised yet. However, there have been few proposed standards. For instance, D' Aguillo et al. proposed 6 weekly screening for multiple myeloma for the first 6 months followed by periodic interval which wasn't specifically mentioned.[8] Cantone et al. proposed a protocol consisting of 3 monthly nasal endoscopy and serum examinations & MRI 3 months after radiotherapy and subsequently every 6 months for the first 5 years; after 5 years, nasal endoscopy and serum examinations every 6 months & annual MRI.[10] Dissemination of the disease, tumour size and nodal involvement determines the prognosis of this entity whereby the 10-year overall survival rate is reported around 70%.[3]

CONCLUSION

Extramedullary plasmacytoma is one of the

less encountered diagnosis of nasal mass. Multidisciplinary approach involving otorhinolaryngologists, pathologist, haematologist and oncologist are necessary with final treatment choice tailored to case by case. Surgical excision of the mass can be considered as single modality treatment in suitable cases. Due to the possibility of recurrence and risk of conversion to multiple myeloma, thorough regular follow-up is mandated for which cues can be taken from pre-existing protocol suggestions.

Financial disclosure or conflict of interest

The authors of this manuscript certify that they have no affiliations with or involvement in any organization or entity with any financial interest in the subject matter or materials discussed in this manuscript.

Consent

We have acquired consent from patient for all photographs of patients' body parts and imaging to be used in publication purpose.

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