

CASE SERIES

# Sudden clinical course of an unusual ENT tumour: clinical pictures of extramedullary plasmacytoma secondary to multiple myeloma

*Decorso clinico improvviso di un inusuale tumore otorinolaringoiatrico: quadri clinici di plasmacitoma extramidollare secondari a mieloma multiplo*

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## SUMMARY

Extramedullary plasmacytoma (EMP) is a rare monoclonal plasmacytic proliferation involving upper airways in 80% of cases. The heterogeneous pattern of frequency in the head and neck area may result in insidious clinical expressions that are potentially lethal for the patient. The presentation and management of two suggestive clinical photographs characterized by sudden and aggressive EMP development secondary to multiple myeloma are discussed.

KEY WORDS: Extramedullary plasmacytoma • Sudden clinical course • Head and neck

## RIASSUNTO

*Il plasmacitoma extramidollare è una rara proliferazione monoclonale di plasmacellule, che coinvolge le alte vie aeree nell'80% dei casi. L'eterogenea frequenza di distribuzione nel distretto testa e collo può generare espressioni cliniche insidiose, potenzialmente letali per il paziente. Riportiamo la presentazione e gestione di due quadri clinici di plasmacitoma extramidollare secondari a mieloma multiplo suggestivi per decorso improvviso ed aggressivo.*

PAROLE CHIAVE: Plasmacitoma extramidollare • Decorso clinico improvviso • Testa e collo

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## Introduction

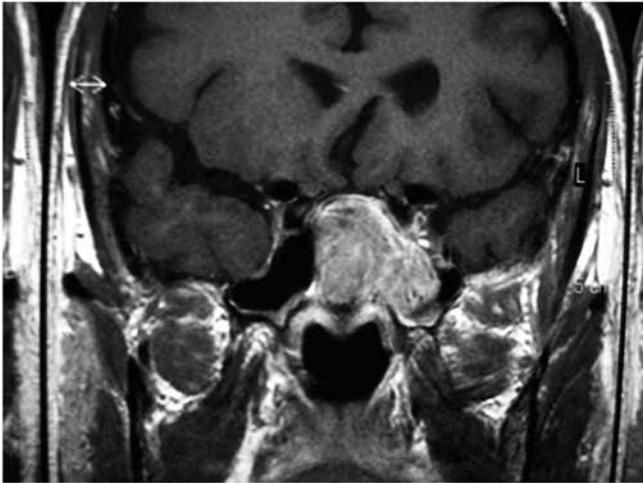
Extramedullary plasmacytoma (EMP) is a rare monoclonal plasmacytic proliferation occurring in an extraskeletal site<sup>1</sup>. EMP comprises 3-5% of all plasma cell neoplasms and accounts for less than 1% of all malignant head and neck tumours<sup>1,2</sup>. The upper airways are involved in 80% of cases, although the heterogeneous pattern of frequency leads to consider exceptional some of the specific sites where the disorder appears<sup>3,4</sup>. Its natural history is still unpredictable: EMP tends to be solitary, or it may be multiple at diagnosis in 10% of patients<sup>5</sup>; it may occur at disease onset (15-20%) or develop (15%) in course of multiple myeloma (MM)<sup>6</sup>. Depending on the mass effect of the neoplasm, the clinical features are linked to the site of the illness, tumour size and involvement of the surrounding structures. As EMP does not show either distinctive clinical or radiologic features<sup>7</sup>, diagnosis is provided by deep biopsies, and a multidisciplinary haematological approach is mandatory to complete the diagnostic-therapeutic work-up. The marked sensitivity to irradiation has

led to consider radiotherapy the elective treatment, but up to now both a widely accepted consensus and an international guideline are still missing<sup>8-10</sup>. The presentation and management of two suggestive clinical pictures characterised by unusual and sudden development are discussed herein.

## Case series

### Case 1

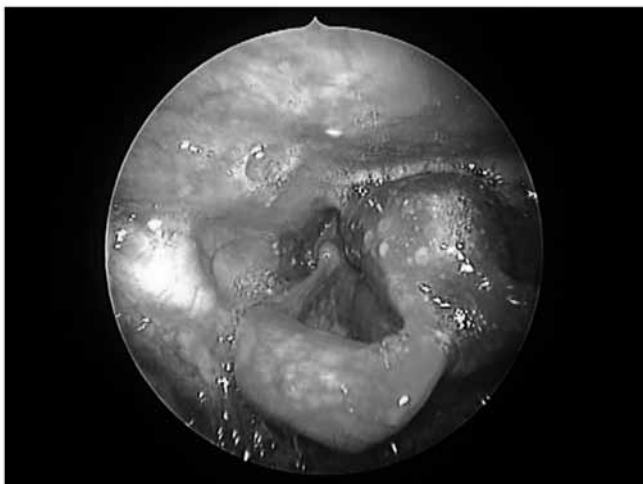
A 74-year-old Caucasian male with a 3-year pre-existing stage I IgGκ multiple myeloma (MM), came to our attention due to acute onset of diplopia with daily retro-orbital headache. Magnetic resonance imaging (MRI) and computerized tomography (CT) scans showed a left sphenoid sinus mass with ipsilateral cavernous sinus invasion, superior extension to the sinus roof, clivus erosion and imprint of the pituitary gland. Carotid artery impairment without lumen damage was also described (Figs. 1, 2). Fiberscope nasal inspection revealed only diffuse mucosal crusting without any evidence of tumour. After transnasal endo-



**Fig. 1.** T1-weighted MRI with intravenous gadolinium enhancement showing a left sphenoid sinus mass with homogeneous contrast enhancement.



**Fig. 2.** CT-scan without contrast of the same patient showing a homogeneous mass of the left sphenoid sinus extending into the middle cranial fossa.



**Fig. 3.** Endoscopic finding of a smooth red mass involving the left hemilarynx and extending to the ipsilateral piriform sinus.

scopic sphenoidotomy, a biopsy of the lesion was performed: the histopathologic study was consistent with the diagnosis of EMP. No lytic lesions were found by bone radiograph survey. Bone marrow plasmacytosis was 30%. After radio-chemotherapy, complete regression of the tumour was achieved. The patient died 8 months later due to an intestinal perforation, without evidence of local or systemic relapse.

*Case 2*

A 62-year-old Caucasian woman was presented with a previous medical history significant for stage IIIa IgG $\lambda$  MM that completely resolved after chemotherapy (bortezomib plus dexamethasone). Two years later the patient developed lung, chest-wall and vertebral relapses. Due to marked dysphonia, she was submitted to head and neck CT with evidence of a left hemilaryngeal mass extended from pharyngoepiglottic fold to the paraglottic homolateral area. Thyroidal shield was not involved and a normofunctional goiter was also observed. Bone marrow biopsy identified a plasma cell infiltration of 50-60%. Chemo- and radiotherapy led to a complete regression of the disease except for the laryngeal involvement. Neck imaging did not demonstrate any treatment response and a rapid progressive dysphagia plus dyspnoea quickly addressed the patient to ENT evaluation. Upper airway endoscopy showed a smooth red mass probably originating from the left aryepiglottic area and extended to the glottic region, piriform sinus, pharyngoepiglottic area. Cricoarytenoid motility was absent and the airway was severely compromised (Fig. 3). Emergency transisthmus tracheostomy unexpectedly revealed a pathologic tissue inside the thyroid gland. Laryngeal and thyroidal biopsies detected extramedullary spreading of MM. Despite chemotherapy, the patient died two months later due to the EMP.

**Discussion**

The common EMP presentation in the upper airways strongly relates to the importance of ENT examination. The heterogeneous pattern of frequency in the head and neck area may result in insidious clinical expressions that are potentially lethal. In their review of 400 publications, Alexiou et al. point out the topographic preference of EMP. The occurrence in the sphenoid sinus (2.0%), larynx (11%) and thyroid gland (1.4%) is confined to very few cases, indeed considered rare, but the finding of a cavernous sinus syndrome and upper airway blockage is exceedingly rare<sup>4 11-13</sup>. These dramatic clinical complications reflect a highly aggressive tumour where any predictions about its natural history remain difficult. Classified as secondary or primary depending on whether there is evidence of systemic MM or not, EMP might suggest the presence of disseminated disease, and a multidisciplinary haematological evaluation is mandatory

to exclude myelomatous lesions<sup>8 14</sup>. Developing late in course of MM, both described cases share the same rapid extramedullary growth with a different and independent progression from MM. Extramedullary MM spreading is commonly associated with poor outcome, and the survival rate strictly depends on the myelomatous behaviour, chemotherapy side effects and any comorbid disorders. In our experience, the watershed of the prognostic perspectives was defined by EMP clinical progression rather than by MM growth. In the first case, an unexpected EMP lesion extending into the middle cranial fossa occurred in the context of a pre-existing stationary stage I MM, under no therapy. In the second patient, relapses of a stage III MM appeared with an extramedullary involvement of two crucial structures of the respiratory tree. Whereas myelomatous lesions resolved completely after chemoradiotherapy, EMP expanded, regardless of MM. This led to a severe dyspnoea and a subsequent emergency tracheostomy was required.

Currently, there are no criteria to predict the sudden appearance of EMP during the course of MM. Its pathophysiology is poorly understood: EMP and MM might be considered two independent entities but simultaneous expressions of a unique disease, with different plasma cell families following a different natural history.

## Conclusions

Despite the exceptionality of the two cases described, careful follow-up is recommended in patients with a history of MM, with particular regard to ENT symptoms. Long-term and well-controlled MM does not exclude the development of a highly aggressive EMP with sudden clinical course. Non-specific clinical and radiological presentations stress the importance of a multidisciplinary approach to achieve early correct diagnosis and prompt treatment.

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