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Extramedullary Plasmacytoma of the Head and Neck: Three Cases

Baş Boyun Ekstramedüller Plazmasitomu: Üç Olgu

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ABSTRACT

Plasmacytomas are relatively rare tumors that often appear in the head and neck region. They are characterized by monoclonal proliferation of plasma cells. Three pathological forms of plasma-cell tumors are recognized as extramedullary plasmacytomas (EMP), solitary plasmacytomas of bone and multiple myelomas (MM). EMPs account for 5% of all plasmacytomas. The incidence of EMPs in males is nearly threefold higher than in females, especially in the 5th -6th decades of life. Approximately 80% of EMPs arise submucosally in the head and neck region, mostly in the sinonasal and nasopharyngeal areas. Three cases of EMPs of the head and neck are presented in this manuscript, with the emphasis on the clinical, radiological, pathological features and management of these tumors.

Keywords
Plasmacytoma, head and neck neoplasms, multiple myeloma

ÖZET

Plazmasitomlar genellikle baş boyunda yerleşim gösteren, nadir tümörlerdir. Plazma hücrelerinin monoklonal proliferasyonu ile karakterizedir. Plazma hücresi tümörlerinin üç formunu; ekstramedüller plazmasitom (EMP), kemiğin soliter plazmasitomu ve multipl myelom (MM) oluşturur. EMP ' lar tüm plazmasitomların %5'ini oluşturur. Erkeklerde üç kat daha sık ve özellikle 50-60 yaşlarında görülür. EMP'ların %80'i baş boyun yerleşimlidir, submukozal olarak çoğunlukla sinonazal ve nazofarengeal alanda oluşur. Baş boyun yerleşimli 3 EMP olgusu; bu tümörlerin klinik, radyolojik, patolojik özellikleri ve tedavi yaklaşımı eşliğinde sunuldu.

Anahtar Sözcükler
Plazmasitom, baş boyun neoplazileri, multipl miyelom

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INTRODUCTION

Plasmacytomas are rare malignancies that often appear in the head and neck region and are characterized by monoclonal proliferation of plasma cells. On both clinical presentation and pathological examination, these tumors may be confused with the common tumors of the head and neck such as undifferentiated carcinoma, non-Hodgkin's lymphoma, malignant melanoma and esthesioneuroblastoma. Three pathological forms of plasma-cell tumors are extramedullary plasmacytoma, multiple myeloma and solitary plasmacytoma of bone.[1-3] EMP accounts for 5% of all plasmacytomas. Approximately 80% of extramedullary plasmacytomas are located in the submucosa of the upper respiratory tract.[1,2] Their incidence in males is nearly threefold higher than in females, the 50-70 year age group being the most affected.[4,5] EMP and solitary plasmacytoma of bone can eventually turn into multiple myeloma.[1,2] Before making a diagnosis of EMP of the head and neck, it is mandatory to exclude multiple myeloma by performing serum protein electrophoresis, urinalysis for Bence-Jones protein, skeletal survey and bone marrow biopsy. The ratio of plasma cells should be less than 5% in the bone marrow for the diagnosis of EMP.

Three cases of EMPs of the head and neck were presented in this manuscript due to their noteworthy scarcity. The emphasis was made on the clinical, radiological, pathological features and management of these tumors. Informed consents were taken from all of the patients.

CASE REPORT

Case 1

A 44-year-old female admitted to the hospital with the complaints of difficulty in swallowing and nasal obstruction. On physical examination, a gray-white submucosal mass located in the lateral wall of nasopharynx and a polypoid mass of 2x2 cm on the left aryepiglottic and vestibular fold were observed (Figure 1). Histopathological examination of both sites revealed a neoplasm consisting of uniform, atypical mononuclear cells similar to plasma cells. In immunohistochemical examination, the tumors were positive for CD 38 and Kappa light chain while negative for lambda light chain (Figure 2). Serum and urine protein electrophoresis were normal. Repeated bone marrow biopsies and skeletal survey were normal. Following endoscopic excision of the larengeal tumor under general anesthesia, the patients was treated with external radiotherapy of the involved sites. There was no recurrence after 4 years of follow-up.

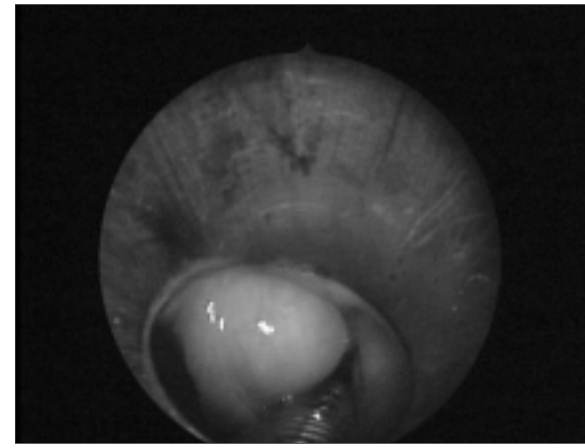

Figure 1. Endoscopic view of the laryngeal lesion on the left aryepiglottic fold.

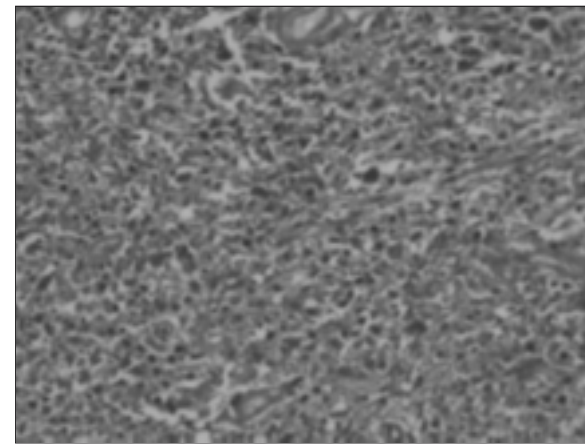

Figure 2. Uniform, atypical mononuclear cells similar to plasma cells (H & E X 220).

Case 2

A 50-year-old female presented with a painful mass over her left eyebrow. On physical examination there was a mass of 3x4 cm over the left frontal and temporal bones. Maxillofacial computerized tomography (CT) scanning showed 3 foci of homogenous, moderately enhanced lesions with bone destruction and intracranial and intraorbital invasion. Multiple lytic lesions at frontozygomatic suture and expanding into orbital fossa were observed on magnetic resonance imaging

(MRI). Fine needle aspiration biopsy of the mass revealed the diagnosis of plasmacytoma. Urine Bence Jones proteins were negative. Serum monoclonal protein levels were normal. Repeated bone marrow biopsies were normocellular at the time of presentation. The patient was diagnosed as multicentric EMP. The masses were removed surgically, postoperative course was uneventful. 30 Gy radiation therapy (RT) was applied afterwards. Following 5 months of the irradiation, she presented with pain in left arm.

The radiological and scintigraphical analysis showed a pathological fracture in humerus and also lesions on sternum suggesting multiple myeloma. Bone marrow biopsy revealed 12% plasma cells. This case demonstrated conversion to multiple myeloma. Chemotherapy was given. She died 4 months after the chemotherapy.

Case 3

A 66- year-old male with complaints of nasal obstruction, epistaxis and alteration of pitch in his voice for the past 6 months, was admitted to our clinic. On his physical examination there was a mass of 7x4 cm in his nasopharynx (Figure 3). His former biopsy from the nasopharynx was reported as angiofibroma in another institution. Nasopharynx CT and magnetic resonance imaging scan revealed the presence of a 65x35x50 mm mass obliterating the posterosuperior wall of the nasopharynx, retrostyloid and parapharyngeal spaces (Figure 4). Bone scanning showed no evidence of lesions. The sections of the incisional biopsy of nasopharynx were re-examined in our pathology department. The diagnosis was reported as plasmacytoma. Serum monoclonal protein levels were normal. Bone surveys were unremarkable. The patient received 40 Gy RT and achieved a complete response. At the end of 10 months of follow-up, the patient exhibited no evidence of recurrence.

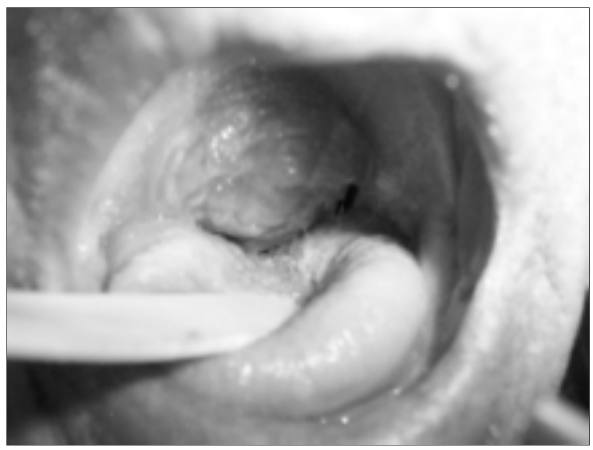

Figure 3. Extension of the nasopharyngeal mass into the oropharynx.

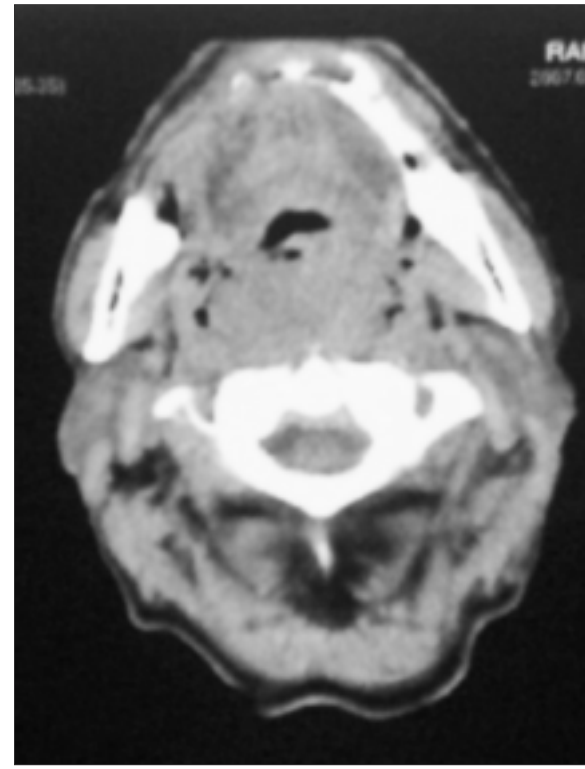

Figure 4. Nasopharynx CT scan revealing a 65x35x50 mm mass obliterating the posteriosuperior nasopharyngeal wall, retrostyloid and parapharyngeal spaces.

DISCUSSION

Isolated extramedullary plasmacytomas make up approximately 4-5% of all plasma cell tumors. They have better prognosis than solitary plasmacytoma of the bone.[1,6] The solitary lesions may eventually progress into the disseminated form or into multipl myeloma, which is encountered in 17-40% of cases. Tumors with the expression of lambda chain are more prone to evolve into myeloma. The presence of 10% or more plasma cells in the bone marrow biopsy and involvement of multiple sites indicate predisposition for transformation to multiple myeloma.[7]

Plasma cell tumors have a male predilection (male: female = 3:1). Seventy-five per cent of these tumors appear in the sixth decade of life.[8] In the current study, two women and one man are presented. The median age at the time of diagnosis was 53 years (range 44- 66 ye-

Table 1. The primary treatment and follow-up of the patients.

Age	Gender	Site	Primary treatment	Relapse	Outcome
44	F	Nasopharynx Larynx	RT (30 Gy in 25 fractions)	None	Disease free 60 months
50	F	Paranasal sinuses	RT (30 Gy in 25 fractions)	5 months Multiple myeloma	Died 9 months
66	M	Nasopharynx	RT (40 Gy in 20 fractions)	None	Disease free 15 months

ars). One patient had laryngeal and nasopharyngeal plasmacytoma, one had multicentric EMP on the face whereas the third patient had nasopharyngeal plasmacytoma.

Eighty per cent of extramedullary plasmacytomas occur in the head and neck, commonly in the tonsillar fossa, pharynx, nasal cavity and paranasal sinuses.[2,6] Laryngeal and nasopharyngeal EMP commonly show up with nasal obstruction, local pain, epistaxis, fullness of the ear and hoarseness; as seen in our patients. Most of the lesions grow subepithelially as soft, gray, sessile or polypoid masses. These features were consistent with the findings of our patients. All patients, presented with local symptoms. Ten to 20% of patients with EMP may develop cervical lymph node metastasis.[5] None of the patients showed cervical lymph node involvement.

Biopsy of the lesion which is the first step in confirming the diagnosis, revealed monoclonal plasma cell histology. The diagnosis of EMP is based on the morphologic and immunohistochemical findings of localized collection of monoclonal plasma cells in the bone marrow biopsy; plasma cells not exceeding 5% of all nucleated cells in addition to normal skeletal survey and absence of Bence-Jones proteins in urine sample.[1,9] Elevated serum monoclonal protein levels can be seen in 20-25% of patients.[1,3]

In our cases, serum protein electrophoresis were normal with no evidence of a paraprotein. Urine examinations for light chains were negative. Serum Ig G, Ig A, Ig M and B2 microglobulin levels were within normal ranges. Immunohistochemistry was positive for CD38 and Kappa chain but negative for lambda light chain.

Currently, there is no general agreement for the treatment of patients with EMP. However, it is well-known that EMP is highly radiosensitive. Therefore, radiotherapy is the mainstay of treatment and achieves good success rates for local control. In the treatment of EMP, total radiation dose of 40-60 Gy over 4-6 weeks is recommended.[1-3,9] Surgery may be combined with radiotherapy to prolong survival.[1] Adjuvant chemotherapy has been claimed to lengthen survival and delays conversion to multiple myeloma. Once the conversion to MM occurs, the mean survival drops to 2-3 years.[2,9] One of our patients developed MM and she died because of the disease. Twenty-two percent of all patients treated for EMP experiences recurrence, and 16-32% of them shows conversion to MM.[1-3,9] After a follow-up of 15 months, the patient with nasopharyngeal EMP remains disease-free (Table 1).

Nowak-Sadzikowska and Weiss[6] reported five cases of EMP of the glottis. They were treated with external irradiation of 60 Gy and were free of disease after a follow-up of ten years. Kost[10] reported four cases of EMP of the larynx, of which one had a glottic EMP. This patient received 7000 cGy irradiation and underwent total laryngectomy nine months later due to radionecrosis. After a follow-up of seven years, no evidence of recurrence was found.[10] In the present case of laryngeal and nasopharyngeal plasmacytoma; laryngeal pathology was excised initially and than external radiotherapy was given. There was no recurrence after 5 years, which is relevant with the literature. The detailed follow-up of the three patients is described in Table 1.

EMP and MM should be considered when dealing with differential diagnosis head and neck masses.[11,12] Regular annual follow-up of the patients with primary EMP, should include serum immunoglobulins, urine examination for Bence-Jones proteins and serum protein electrophoresis. Monitoring with CT scan is also mandatory. Long term follow-up is recommended for detection of any recurrences and conversion into multiple myeloma.

REFERENCES

1. Alexiou C, Kau RJ, Dietzfelbinger H, Kremer M, Spiess JC, Schratzenstaller B et al. Extramedullary plasmacytoma: tumor occurrence and therapeutic concepts. Cancer 1999;85(11):2305-14.
2. Nofsinger YC, Mirza N, Rowan PT, Lanza D, Weinstein G. Head and neck manifestations of plasma cell neoplasms. Laryngoscope 1997;107(6):741-6.
3. Majumdar S, Raghavan U, Jones NS. Solitary plasmacytoma and extramedullary plasmacytoma of the paranasal sinuses and soft palate. J Laryngol Otol 2002;116(11):962-5.
4. Hotz MA, Schwaab G, Bosq J, Munck JN. Extramedullary solitary plasmacytoma of the head and neck. Ann Otol Rhinol Laryngol 1999;108(5):495-500.
5. Kapadia SB, Deasi U, Cheng VS. Extramedullary plasmacytoma of head and neck: A clinicopathologic study of 20 cases. Medicine 1982;61(5):317-29.
6. Nowak-Sadzikowska J, Weiss M. Extramedullary plasmacytoma of the larynx: Analysis of 5 cases. Eur J Cancer 1998;34(9):1468.
7. Holland J, Trenkner DA, Wasserman TH, Fineberg B. Plasmacytoma- treatment results and conversion to multiple myeloma. Cancer 1992;69(6):1513-17.
8. Suen JY, Vural AE, Waner M. Unusual tumors. In: Myers EN, Suen JY, Myers JN, Hanna EYN, eds. Cancer of the head and neck. 4th ed. Philadelphia: WB Saunders; 2003. p.611-629.
9. Michalaki VJ, Hall J, Henk JM, Nutting CM, Harrington KJ. Definitive radiotherapy for extramedullary plasmacytomas of the head and neck. Br J Radiol 2003;76(910):738-41.
10. Kost KM. Plasmacytomas of the larynx. J Otolaryngol 1990;19(2):141-6.
11. Miller FR, Lavertu P, Wanamaker JR, Bonafede J, Wood BG. Plasmacytomas of the head and neck. Otolaryngol Head Neck Surg 1998;119(6):614-8.
12. Nakashima T, Matsuda K, Haruta A. Extramedullary plasmacytoma of the larynx. Auris Nasus Larynx 2006;33(2):219-22.