Papiller tiroid karsinoma kalvarial metastazı: olgu sunumu

Calvarial metastasis from papillary thyroid carcinoma: A case report

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Abstract
A large variety of metastatic tumors can be found in the skull; breast, prostate, lung carcinoma, multiple myeloma, neuroblastoma and sarcoma are among those that have been reported in the literature. In the current case, a very rare case of metastasis to skull from papillary thyroid carcinoma is reported.
A 45-year-old man was admitted to our service with head trauma. Computed tomography and magnetic resonance imaging revealed lytic mass lesions in the right frontal and occipital bone extending through the dura mater and subcutaneous tissue. Right frontal, suboccipital craniectomy, tumor excision were performed and microscopic examination revealed papillary thyroid carcinoma metastasis.
There is no consensus on treatment protocols for patients with central nervous system metastases from papillary thyroid carcinoma, most likely because of the rarity of cases. In the present case, we suggest that the best option for treatment of papillary thyroid carcinoma metastasis to skull would be surgery followed by radiotherapy.

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Key words: Brain tumors, Craniotomy, Metastasis, Papillary Thyroid Carcinoma

Özet
Kranial bölgeye bir çok farklı tümör metastaz yapabilmektedir; bunlar içerisinde meme, prostat, akciğer kanseri, multipl myeloma, nöroblastoma ve sarkoma sayılabilir. Bu yazıda çok nadir görülen papiller tiroid karsinomunun kraninuma metastazı sunulacaktır. 45 yaşında erkek hasta kafa travması şikayeti ile kliniğimize başvurdu. Çekilen kranial tomografi ve magnetik rezonans incelemelerinde sağ frontal ve oksipital kemikte dura mater ve subkutanöz dokulara uzanım gösteren litik kitle lezyonları tespit edildi. Çok nadir görülmesi nedeni ile papiller tiroid karsinomunun santral sinir sistemi metastazının tedavisi ile ilgili literatürde net bir tedavi şeması bulunmamaktadır. Bu yazı ile papiller tiroid karsinomunun kranial metastazında en uygun tedavi yönteminin cerrahi rezeksiyon ve ardından radyoterapi uygulaması şeklinde olduğu belirtilmiştir.

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Anahtar sözcükler: Beyin Tümörleri, Kraniotomi, Metastaz, Papiller Tiroid Karsinomu

Introduction

Metastases to the skull may occur from a variety of neoplasms. Carcinoma of the breast, prostate, lung, and multiple myeloma are more frequent in adult, while in pediatric patients, neuroblastoma and sarcoma are more often observed [1,2]. However, calvarial metastasis from papillary thyroid carcinoma (PTC) is a very rare situation so there is no consensus on post surgery treatment protocol [3,4]. In this paper we described the management of calvarial metastases from papillary thyroid carcinoma.

Case Report

A45-year-old man was admitted to our service with head trauma. Physical and neurological examinations revealed no abnormalities. Interestingly, the computed tomography (CT) of the brain revealed expansive lytic lesions in the right frontal and occipital region in calvarium (Fig. 1). Magnetic resonance imaging (MRI) showed calvarial masses in the right frontal and occipital region invading the dura mater (Fig. 2a, 2b). He has not had a known history of malignancy before. The patient underwent

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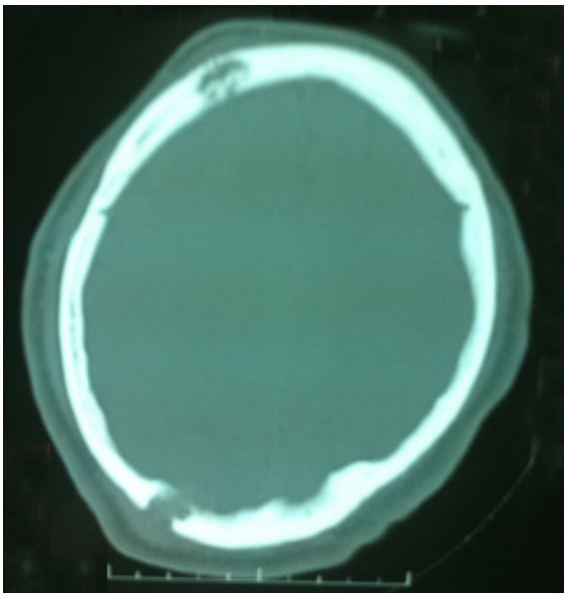

Figure 1. Axial CT image showing expansive and lytic lesions in the frontal and occipital bones.

right frontal and suboccipital craniectomy in the supine position and the masses were totally resected. The patient was discharged one week after the operation without any neurological deficits. Microscopically, a tumor composed of thyroid follicles, some of which contained colloid, infiltrated bone fragments. Thyroid follicles were lined by atypical epithelial cells with optically clear nuclei which had grooves and pseudoinclusions (Fig. 3a). The follicular epithelial cells showed strong immunoreactivity for thyroglobulin (Fig. 3b) and thyroid transcription factor-1 (TTF-1) (Fig. 3c). On the basis of morphological and immunohistochemical findings, the tumor which infiltrated skull proved to be a PTC metastasis.

Discussion

Papillary thyroid carcinoma has commonly a relatively less aggressive clinical course and thus behaves unlike other thyroid cancers [5]. The prognosis is usually excellent and the reported survival rates for non-metastatic lesions are 97.8% at 5 years and 94.9% at 10 years [6].

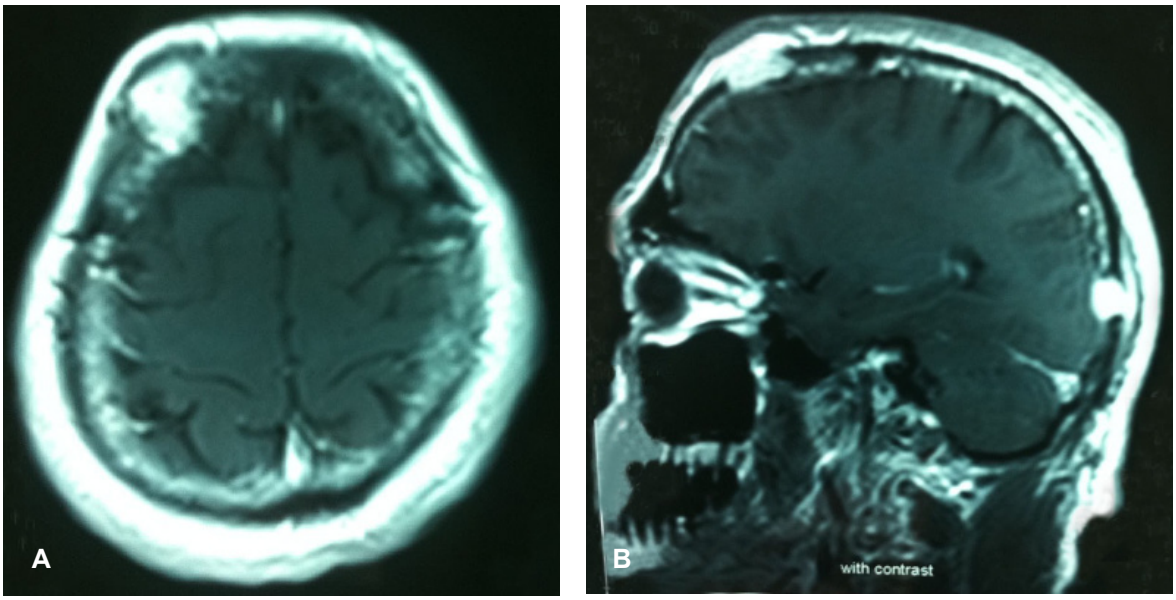

Figure 2. (**A**) Calvarial mass seen on axial contrast enhanced T1-weighted image, destroying the inner and outer tables and extending through the dura mater and subcutaneous tissue. (**B**) Sagittal contrast enhanced T1-weighted image depicting calvarial masses in the right frontal and occipital bones.

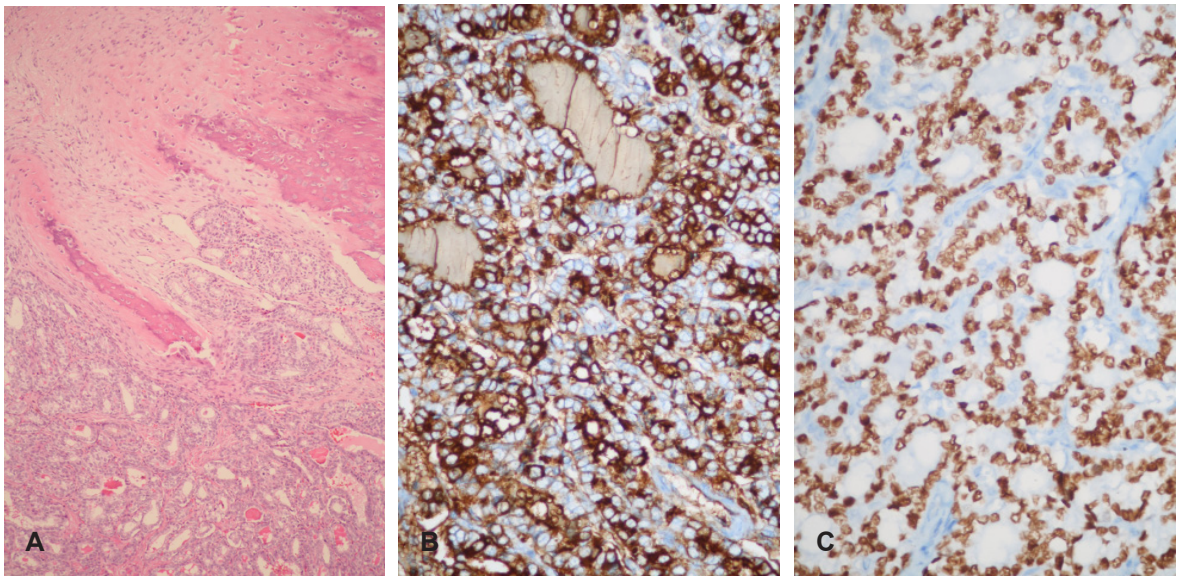

Figure 3. (**A**) PTC composed of thyroid follicles infiltrating bone fragments (hematoxylin and eosin, x200). (**B**) Tumor cells showing strong cytoplasmic immunoreactivity for thyroglobulin (diaminobenzidine, 400). (**C**) Tumor cells showing strong nuclear immunoreactivity for TTF-1 (diaminobenzidine, 400).

Distant metastases from PTC are uncommon. Lung and mediastinum are the most common sites for distant metastases [3,4]. According to a clinicopathological study reported by Hoie et al. [7], 91 of 731 patients with PTC had distant metastases and only nine of these patients had brain metastases.

To date, there is no consensus on treatment protocols for patients with central nervous system metastases from PTC, most likely because of the rarity of cases. Different treatment modalities, such as radioiodine therapy, external beam radiation and surgery have been suggested and used in the limited number of cases [8]. In the present case, surgery was chosen because of the nature of the tumor. After surgical removal of the tumor ^{131}I radiotherapy was performed. Supportive treatment with radioiodine may help tumor regression.

In summary, skull metastasis from PTC is very rare and in this article, we have reported the third case of the skull metastasis from PTC. In the present case, we suggest that early detection and surgical removal of the metastases with additional radiotherapy are essential for treatment of PTC metastasis.

Disclosure or Disclaimer: The authors declare no potential conflicts of interest.

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