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Tumour to Tumour Metastasis: Renal Cell Carcinoma Metastasis to a Carotid Body Tumour

Tümör İçine Tümör Metastazı: Renal Hücreli Karsinomun Karotid Body Tümörü İçine Metastazı

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ABSTRACT

Renal cell carcinoma (RCC) accounts for 3% of all malignancies and can metastasize to any location in the body, and its propensity to metastasize to unusual sites has been well documented. It is the third most frequent neoplasm to metastasize to the head and neck region preceded only by breast and lung cancer. Some authors have reported metastasis of RCC to the parotid glands, nose and paranasal sinus, tongue, larynx, thyroid and tonsilla palatina.We present the first description of tumour to tumour metastasis by renal cell carcinoma into the carotid body tumour.

Keywords
Carcinoma, renal cell; neoplasm metastasis;
carotid body tumor

ÖZET

Renal hücreli karsinom (RCC) tüm malignitelerin %3'ünü oluşturur ve vücudun herhangi bir yerine metastaz yapabilir. Bu tümörün pek sık olmayan bölegelere yaptığı metastazlar bildirilmiştir. RCC meme ve akciğerden sonra baş ve boyuna 3. sıklıkta metastaz yapan kanserdir. Bazı otörler RCC'nin parotis, burun ve paranazal sinüsler, dil, larenks, tiroid ve tonsillere metastazını bildirmişlerdir. Biz de literatürde ilk defa bildirilen karotis cisim tümörü içine metastazı olan renal hücreli karsinomun yaptığı tümör içine tümör metastazını sunuyoruz.

Anahtar Sözcükler
Karsinom, böbrek hücreli; tümör metastazı;
karotis cismi tümörü

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INTRODUCTION

Renal cell carcinoma constitutes approximately 3% of all adult malignancies.[1] The most common site of metastasis is the bone and lung, but it has been reported to metastasize to any organ and site in the body. Metastasis of renal cell carcinoma to the head and neck region is rare, and it is estimated that 14~16% of all patients with renal cell carcinoma have metastases above the clavicle.[2] Here, we report a 69-year-old female with a renal cell carcinoma metastasis to a right carotid body tumor, 3 years after a left radical nephrectomy for renal cell carcinoma.

CASE REPORT

A 69-year-old woman was referred to our clinic with a painful, progressively enlarging right cervical mass with a 2-year history. She denied dysphagia, dyspnea, hemoptysis, fever, night sweats, or weight loss. Her medical history included only a left nephrectomy for renal cell carcinoma in 2004. There were no signs of inflammation. A flexible nasopharingolaryngoscopic examination, kidney function tests and other laboratory findings were normal.

Magnetic resonance imaging (MRI) showed a 51x47x75-mm irregularly contoured mass at the right carotid bifurcation, with anterior and posterior displacement of the external carotid artery (Figure 1). Suspecting a carotid body tumor, MRI angiography was performed and showed a mass localized to right carotid bifurcation that suggested a carotid body tumor, as it displaced the internal carotid artery posteriorly and the external carotid artery anteriorly, albeit minimally. No luminal stenosis was seen in those arteries (Figure 2).

A 8 cm skin incision was made parallel to the sternocleidomastoid muscle (SCM) and the mass medial to the SCM was explored. Common, internal and external carotid arteries were involved by the tumor. Diamater of 50x40 mm tumor in the right carotid bifurcation was excised by subadventitial dissection. Common, external and internal carotid arteries and peripheral tissue were normal. No complication was observed during the per- and post-operative period. Microscopic examination showed a RCC metastasis into a carotid body tumor on immunohistochemical staining, the carotid body tumor was positive for chromogranin, synaptophysin, neurofilament protein, vimentin, and CD-10 cytoplasmic were (+), while the RCC metastasis was positive for vimentin, EMA, cytokeratin 8,18, and CD-10(-). The Ki-67 proliferative index for RCC was 30%, and it was 1% of the carotid body tumor (Figure 3).

Figure 1. 51x47x75-mm irregularly contoured mass at the right carotid bifurcation on T2 magnetic resonance ımaging (MRI).

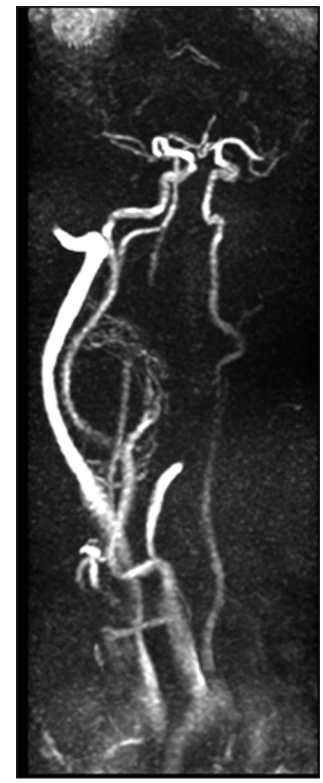

Figure 2. A mass localized to right carotid bifurcation as it displaced the internal carotid artery posteriorly and the external carotid artery anteriorly on angiography with MRI.

The patient was consulted to the urology department. Computed tomography scan of the abdomen revealed a solid mass corresponding to recurrent renal

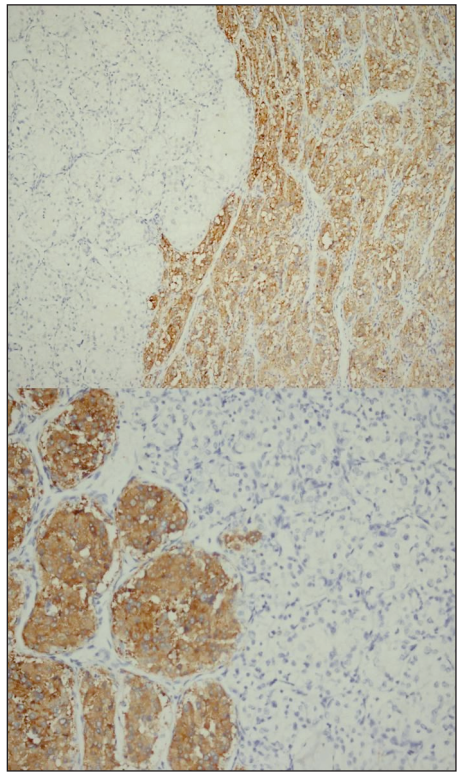

Figure 3. CD-10 positive is the areas of RCC and CD-10 negative is the areas of paraganglioma (Immunohistochemical examinationx100).

carcinoma in the left renal and peri-renal region and lytic lesions corresponding to metastasis in the left acetabulum. The patient's medical situation was discussed by our hospital's head and neck tumor council and radiochemotherapy was recommended. She took six months of Interferon theraphy and ten days of 3000 cGy radiotheraphy and she died one year after radiochemotherapy.

DISCUSSION

The cervical lymph nodes are a common site of metastasis for cancers originating in the upper aerodigestive tract. Rarely, cancers originating from sites other than the head and neck can metastasize to the cervical lymph node chain. Genitourinary tract neoplasms make up a significant proportion of these cancers and should be considered in the differential diagnosis of neoplastic lesions of the head and neck.[3] The parotid gland, nose, paranasal sinuses, tongue, larynx, thyroid gland, and palatine tonsils are reported sites of renal cell carcinoma metastasis in the head and neck, of which renal cell carcinoma mostly metastases to the thyroid gland.[4]

Tumour-to-tumour metastasis is a rare phenomenon, but has been described in the literature in just over 100 cases. The literature reports a variety of combinations with carcinoma-to-carcinoma being the most common; and renal cell carcinomas appear to the most common recipient tumours with common donor tumours being breast, lung and renal cell carcinomas. However, neuroendocrine, mesenchymal and even haematolymphoid neoplasms have been described recipients to carcinomas, melanomas and other haematolymphoid malignancies.[5]

In 2009, one study reported a case of intracranial paraganglioma with metastasis from oesophageal carcinoma[6] and another reported a case of renal cell carcinoma metastasis mimicking radiologically and clinically a carotid body tumor.[7] Then in 2012, the authors reported a case of poorly-differentiated lung carcinoma metastasising into a carotid body paraganglioma.[8] Our case is unique as it involves actual tumor-to-tumor metastasis in the head and neck region, and not simply a metastasis mimicking a carotid body tumor. Our case is a renal cell carcinoma metastasis into a carotid body tumor similar to other cases in literature albeit there is no prier example of metastasis to carotid body in the literature.

Genitourinary tract neoplasms make up a significant proportion of these cancers and should be considered in the differential diagnosis of neoplastic lesions of the head and neck. Metastasis of renal cell carcinoma to the head and neck region is rare and tumour to tumour metastasis is a rare phenomenon, too. Our case is unique as it involves tumour metastass by renal cell carcinoma into the carotid body tumour.

REFERENCES

1. Boles R,Cerny J. Head and neck metastases from renal cell carcinomas. Mich Med 1971;70(16):616-8.
2. Savas MC, Celik I, Benekli M, Güllü IH, Tekuzman G. Renal cell carcinoma presenting as a solitary cervical node metastasis compressing the brachial plexus. Nephron 1998;79(1): 107-8.
3. Hessan H, Strauss M, Sharkey FE. Urogenital tract carcinoma metastatic to the head and neck. Laryngoscope 1986;96(12): 1352-6.
4. Murakami S1, Yashuda S, Nakamura T, Mishima Y, Iida H, Okano H, et al. A case of renal cell carcinoma with metastases to the thyroid gland and concomitant early gastric cancer. Surg Today 1993;23(2):153-8.
5. Honma K, Hara K, Sawai T. Tumour-to-tumour metastasis. A report of two unusual autopsy cases. Virchows Arch A Pathol Anat Histopathol 1989;416(2):153-7.
6. Lu JQ, Khalil M, Hu W, Sathurland GR, Clark AW. T umor-to-tumor metastasis: esophageal carcinoma metastatic to an intracranial paraganglioma. J Neurosurg 2009;110(4):744-8.
7. Chhabra P, Bhatt V, Brown AM. Metastatic renal cell carcinoma in the neck: an unusual presentation. Dent Update 2009;36(8):511-3.
8. Bury Y, Green R, Jain M, Moor J. Metastasis of carcinoma of the lung to a carotid body paraganglioma. BMJ Case Rep 2012;2012. pii: bcr0120125517.