

Nasal Septum Metastasis of Renal Cell Carcinoma 7 Years After Nephrectomy: A Case Report

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Abstract

Introduction: Malignant tumors of the nose and paranasal cavities are rare tumors that account for less than 1% of body malignancies and 3-5% of malignancies of the head and neck. Metastatic tumors in the sinonasal region are extremely rare, but renal cell carcinoma (RCC) metastases are the most common in this region. The aim of this study was to present the clinical features, diagnostic and therapeutic options in this rare metastatic tumor growth of the nose, and the significance of the postoperative follow-up period of these patients.

Case outline: A 70-year-old male patient was examined due to difficulty breathing in the nose on the left side with occasional bleeding. Clinical examination revealed a papillomatous growth in the left vestibule of the nose attached to the nasal septum. The presence of clear cell tumor proliferation was determined pathohistological and further immunohistochemical analysis was advised. Patient had nephrectomy performed due to adenocarcinoma of the kidney in 2011., after which he was not regularly followed. Further diagnostic procedures revealed a metastasis of renal cell carcinoma. After the surgical treatment was completed, the patient was treated with chemotherapy.

Conclusion: In patients with observed unilateral growth in the sinonasal region, which occasionally bleeds and leads to nasal obstruction, with the obtained anamnestic data that their RCC has been previously confirmed or treated, it is important to think about metastatic tumor by differential diagnosis. In most patients, early detection of metastasis provides the possibility of surgical treatment and a more favorable response to systemic therapy.

Keywords: Renal Cell Carcinoma; Metastasis; Nasal Septum; Epistaxis

Introduction

Malignant lesions of nasal cavity and paranasal sinuses are rare tumors with the incidence of 3 to 5% of all head and neck malignancies and less than 1% of malignancies overall [1-3]. Most common representation involves unilateral intranasal mass with nasal obstruction and recurring nasal bleeding. Malignant tumors

of nasal cavity and paranasal sinuses are generally primary tumors and metastatic disease is extremely rare in these anatomical sites [4]. Most frequent metastases to nose and paranasal sinuses are those from renal cell carcinoma (RCC) followed by bronchus, urogenital ridge, breast and gastrointestinal tract, respectively [5,6]. RCC is the most common kidney cancer with the incidence

rate of 8.3-9.8 cases per 100 000 and mortality rate of up to 4.9 cases per 100 000 in Europe [7]. It occurs more frequently in male patients between 40 and 60 years old with established risk factors that include smoking, hypertension and obesity [8]. Over 50% of RCC are diagnosed incidentally, so it is important to have in mind that nasal septum and paranasal sinuses can be a place for metastatic disease spreading [9]. We report a rare case of nasal septum metastasis of RCC 7 years after nephrectomy.

Clinical Report

A 70-year-old man was referred to our Ear, nose, and throat clinic with recurrent episodes of low intensity nasal bleeding after nose picking. Patient had feeling of small nasal mass in left nostril that did not affected nasal airflow. Anamnestic data revealed that patient was treated for hypertension and chronic obstructive pulmonary disease. He also underwent left nephrectomy for a clear cell adenocarcinoma before 7 years. His last chest X-ray was done 3 months ago due to chronic pulmonary disease and smoking habits. Chest X-ray shows prominent broncho vascular markings without secondary deposits. His last oncologic follow up examination was done 2 years ago and showed no signs of recurrences or metastatic disease. Endoscopic examination revealed a red, irregular, lesion in the left nasal cavity, that bled easily and was located on the nasal septum (Figure 1). Other ear, nose, and throat examination results was within normal limits. Laboratory blood test didn't showed irregular coagulation profile or any other irregularity. Also the urea and creatinine levels were in optimal range considering nephrectomy. Paranasal sinus computed tomography (CT) revealed a soft tissue mass opacification of the left nasal cavity extending from the left anterior part nasal septum to the left inferior turbinate with unclear borders to cartilaginous part of the nasal septum (Figure 2). Due to possibility of profuse bleeding and unclear margins, tumor resection was performed in general anesthesia. During the intervention there was medium amount of bleeding that was controlled using the nasal packing gauze. After excision of peduncular part of tumor, altered part of nearby mucosa and septal cartilage were excised with preservation of right-side septal mucosa. Altered mucosal part of left inferior nasal concha was also excised and all specimens were fixed in formalin, then sent for histopathology and immunohistochemically analysis in our hospital (Figure 3). The histological exam revealed a clear cell renal cell carcinoma (Carcinoma lucidocellulare infiltrativum-metastasis carcinomatis renis) in the tumor and the nearby mucosa specimens

(Figure 4). Nasal septum cartilage and inferior nasal concha mucosa specimens showed no signs of tumor infiltration. Based on these findings, the patient underwent a chest and abdomen CT scan that showed two confluent tumoral masses in apical segment of left upper pulmonary lobe around 3cm in diameter. The patient was referred to the medical oncology clinic for chemotherapy. Sunitinib malate (Sutent; Pfizer Italia S.r.l., Ascoli Piceno, Italy) treatment was prescribed. One year after treatment, the control thorax CT scan revealed that the lesions regressed around 1cm. Regular ENT follow-up visits revealed that there was no mass in the nasal cavity and head CT scan was done one year after tumor resection and showed no recurrence of tumor metastasis (Figure 5).

Figure 1: View of the tumoral lesion in the left nasal cavity.

Figure 2: Preoperative paranasal sinus computed tomography.

Figure 3: Excised tissue sent to analysis - a) Tumor mass from left nose b) altered part of nearby mucosa c) septal cartilage d) altered mucosal part of left inferior nasal concha.

Figure 4: Histopathologic examination of the tumor.

Figure 5: One-year postoperative paranasal sinus computed tomography.

Discussion

Each nasal and paranasal lesions require careful evaluation. Although benign nasal and paranasal lesions are more common than malignant [1], each lesion requires careful evaluation and histopathological analysis to accurately determine the type of tumor. Common to both lesions benign and malignant (primary or metastatic) of nasal cavity and paranasal sinuses are two the most frequent symptoms, epistaxis and nasal obstruction [10,11] which can sometimes confuse the clinicians and delay diagnosis for a moment. RCC metastases can be found in any region of the body. They can most often be found in the lungs followed by regional lymph nodes, bone and liver, respectively [12]. The head and neck are affected by RCC metastases in 15% of cases and the most common localization are nose and paranasal sinuses followed by the larynx, jaws, temporal bones, thyroid and parotid glands, respectively [12]. RCC mostly metastasizes hematogenous via one of two ways [13]. The first primary way involves spreading through the renal vein, inferior vena cava, heart, lungs to the maxillary artery [5,13]. Another less frequent metastatic route is via the Batson venous plexus between a valvular vertebral and epidural venous systems, where tumor emboli spread to the head and neck region without entering the pulmonary circulation [13-15]. RCC metastases can be detected at the same time when the diagnosis of RCC is confirmed and during regular follow-up period. Around 80% of metastasis develop within the first 5 years, but late RCC metastasis have been also detected up to 10 years postoperatively [16]. CT scan of the nose and paranasal sinuses is a necessary routine imaging method performed in case of any suspicious pathological lesion. CT scan can give us information about the localization of the lesion, involvement of sinonasal structures, bone destruction and hypervascularization. If necessary, MRI can be used to more accurately determine the extent of the malignant lesion to adjacent soft tissue structures. Some authors advise angiography with embolization preoperatively to reduce the possibility of intraoperative bleeding [15]. In our case, preoperatively of imaging techniques, CT scan was sufficient and during the intervention bleeding was controlled using the nasal packing gauze. Histopathology and immunohistochemically analysis, in our patient, confirmed a clear cell renal cell carcinoma, the most common subtype of RCC with incidence approximately 80% of all RCC [17]. Metastasectomy is considered useful in patients who have developed metachronous metastasis of renal cell carcinoma, because it improves the clinical prognosis of the disease [18]. In our case, the patient received

postoperatively Sunitinib malate, which is considered the first line of treatment for metastatic renal cell carcinoma [19]. Follow-up of patients after nephrectomy due to previously clinically confirmed localized RCC is extremely important as one third of patients develop distant metastases [20]. In our case, the routine chest X-ray performed preoperatively did not show any pathological findings, but postoperative-chest CT scan verified the presence of metastases in the lungs. Metastatic RCC has poor prognosis. In cases of a single metastasis, 5 year- survival rate is approximately 15 to 30%, while in cases with several metastases 5 year- survival rate is approximately 0 to 7% [12]. In our case, the patient conducted specific oncological therapy with Sunitinib malate after metastasectomy without lethal outcome after 3 years of follow-up. According to literature data, there is still no precisely agreed universal follow-up strategy for patients after RCC treatment [17]. In case of this patient, our institutional protocol suggested that 5 years after primary surgery follow up exams should be performed once per year and should include physical examination, blood tests, chest X-ray and ultrasound [19]. According to the new EAU guidelines on Renal Cell Carcinoma, there are recommendations to group patients into three different groups related to low, medium and high risk of recurrence and the effectiveness of treatment [17]. Postoperative oncological follow-up is adjusted to the risk group to which the patient belongs. There is a recommendation that in patients with a low risk of recurrence, postoperative oncological follow-up is no longer necessary after 5 years, except in the cases of the appearance of clinical symptoms [17]. Otherwise, in patients with medium and high risk of recurrence, there is a recommendation that after 5 years postoperatively oncological follow-up include abdominal and chest CT scan every other year [17].

Conclusion

Although metastases in nasal cavity and paranasal sinuses are extremely rare, it is important to think about them in clinical practice differentially diagnostic, especially in patients with unilateral lesion in the sinonasal region, accompanied with recurrent epistaxis, unilateral nasal obstruction and a previous history of diagnosed or treated RCC. This is a rare and unusual case of RCC metastasis because of both rare localization of the metastatic disease and the time interval when it was confirmed after the primary diagnosis of malignant disease. Follow-up strategy is extremely important for patients after RCC treatment. Early detection of metastases in most

cases provides the possibility of surgical treatment and a better response to systemic therapy. Reaching a universal consensus of follow-up strategy is an important next step in RCC treatment.

Bibliography

1. El-Gerby KM and El-Anwar MW. "Differentiating Benign from Malignant Sinonasal Lesions: Feasibility of Diffusion Weighted MRI". *International Archives of Otorhinolaryngology* 21.4 (2017): 358-365.
2. Peck BW, *et al.* "Rates and Locations of Regional Metastases in Sinonasal Malignancies: The Mayo Clinic Experience". *Journal of Neurological Surgery Part B: Skull Base* 79.3 (2018): 282-288.
3. Dutta R, *et al.* "Sinonasal malignancies: A population-based analysis of site-specific incidence and survival". *Laryngoscope* 125.11 (2015): 2491-2497.
4. Khurayzi T and Alshahrani A. "Metastatic paranasal sinuses adenocarcinoma from breast carcinoma, a rare event: a case report". *International Journal of Otorhinolaryngology and Head and Neck Surgery* 3.4 (2017): 1099-1102.
5. Sountoulides P, *et al.* "Atypical presentations and rare metastatic sites of renal cell carcinoma: a review of case reports". *Journal of Medical Case Reports* 5 (2011): 429.
6. Evgeniou E, *et al.* "Renal cell carcinoma metastasis to the paranasal sinuses and orbit". *BMJ Case Reports* (2012): bcr0120125492.
7. Capitanio U, *et al.* "Epidemiology of Renal Cell Carcinoma". *European Urology* 75.1 (2019): 74-84.
8. Mancini M, *et al.* "Gender-Related Approach to Kidney Cancer Management: Moving Forward". *International Journal of Molecular Sciences* 21.9 (2020): 3378.
9. Rabjerg M, *et al.* "Incidental renal neoplasms: is there a need for routine screening? A Danish single-center epidemiological study". *APMIS* 122.8 (2014): 708-714.
10. López F, *et al.* "Metastases to nasal cavity and paranasal sinuses". *Head Neck* 38.12 (2016): 1847-1854.

11. Ali M., *et al.* "Diagnosis and management of benign tumors of nasal and paranasal cavities: 31 cases". *The Egyptian Journal of Otolaryngology* 31 (2015): 4-9.
12. Ralli M., *et al.* "Metastatic Renal Cell Carcinoma Presenting as a Paranasal Sinus Mass: The Importance of Differential Diagnosis". *Case Reports in Otolaryngology* (2017): 5.
13. Doğan S., *et al.* "The nasal septum: an unusual presentation of metastatic renal cell carcinoma". *Journal of Craniofacial Surgery* 20.4 (2009): 1204-1206.
14. Simo R., *et al.* "Metastatic renal cell carcinoma to the nose and paranasal sinuses". *Head Neck* 22.7 (2000): 722-727.
15. Singh J., *et al.* "Occult renal cell carcinoma manifesting as nasal mass and epistaxis". *Reviews Urology* 16.3 (2014): 145-148.
16. Yücel ÖB., *et al.* "22-year survival following radical nephrectomy and several metastasectomies in a case of renal cell carcinoma". *Turkish Journal of Urology* 43.2 (2017): 216-219.
17. Ljungberg B., *et al.* "Eau guidelines on renal cell carcinoma" (2012)
18. Dragomir A., *et al.* "Outcomes of complete metastasectomy in metastatic renal cell carcinoma patients: The Canadian Kidney Cancer information system experience". *Urologic Oncology* 38.10 (2020): 799.e1-799.e10.
19. Evropsko udruženje urologa Vodič za 2012 Udruženje Urologa Srbije (2012).
20. Gong J., *et al.* "Metastasis in renal cell carcinoma: Biology and implications for therapy". *Asian Journal of Urology* 3.4 (2016): 286-292.