Cutaneous Metastasis of Renal Cell Carcinoma to the Cheek: A Case Report and Literature Review

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Conflict of interest: None declared

Patient: Male, 72-year-old
Final Diagnosis: Renal cell carcinoma
Symptoms: Mass
Medication: —
Clinical Procedure: —
Specialty: Surgery

Objective: Unusual clinical course
Background: Cutaneous metastasis of renal cell carcinoma is exceedingly rare, and there are few described cases of metastasis to the skin of the head and neck region. Most of these cases describe metastases to the scalp, but some cases of metastases to the face and neck have been reported.

Case Report: A 72-year-old man presented to the Surgery Clinic with a chief complaint of a lesion that had grown on his left cheek over a period of about 3 months. A punch biopsy revealed the mass to be metastatic renal cell carcinoma, clear-cell subtype. The patient had already had a nephrectomy for primary tumor control. Due to the advanced disease process, the patient elected for palliative care.

Conclusions: Cutaneous presentations of renal cell carcinoma in the head and neck are exceptionally rare, and metastases to the face are less common than metastases to the scalp. When this disease process does occur, it often presents as a raised mass of between 1 and 3 cm with a red, red-purple, or red-blue color. Patient history often reveals a relatively rapid growth process of their facial lesion. This case highlights the fact that malignancies may manifest several years after initial primary resection.

Keywords: Carcinoma, Renal Cell • General Surgery • Head and Neck Neoplasms • Neoplasm Metastasis • Surgery, Oral • Surgery, Plastic

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Background

Renal cell carcinoma (RCC) is the most common type of primary renal cancer, and clear-cell is the most common subtype. However, cutaneous metastasis is exceedingly rare, and there are only a few case reports of metastasis to the skin of the head and neck region. Most of these cases describe metastases to the scalp, but some cases of metastases to the face and neck have been reported. This case report aims to describe the etiology of this unusual lesion and provide background on this particular manifestation.

Case Report

A 72-year-old man with a past medical history of type 2 diabetes, hypertension, hyperlipidemia, prostate cancer treated with radical prostatectomy, and known clear-cell RCC presented to the Surgery Clinic with a chief complaint of a mass on his left face. He was a lifelong nonsmoker and nondrinker. Three years prior to this visit, the RCC was treated with radical left nephrectomy, which was an R0 (negative margin) resection. The primary tumor was found to be 6×7×8 cm, unilateral, with extension into the renal sinus. The primary tumor had very irregular nuclei, with large and prominent nucleoli, for a Fuhrman nuclear grade of G3, with focal (<5%) grade G4 due to a small area of bizarre and multilobed nuclei. Two years later, the patient developed metastases to the lungs, which were treated with bilateral video-assisted thoracoscopic surgery with wedge resection, also with negative margins. A year later, he presented to the clinic with the above chief concern.

Further patient questioning revealed that the mass had been present for about 3 months, with a gradual increase in size. In addition, physical examination revealed 2 masses (5×4 cm and 2.5×2 cm) in his right gluteal region and a 2×2 cm lesion in the left humerus. The lesions were nonfriable cutaneous nodules with no overlying skin changes. On head and neck examination, a dome-shaped indurated mass of approximately 2×2 cm was seen involving the skin overlying the left maxilla and zygomatic regions. The inferior region of the mass was friable, and the entire mass had a reddish tinge. There was no surrounding erythema, and the patient denied pain or paresthesia in this area (Figures 1, 2). The appearance of the lesion was similar to several descriptions of RCC cutaneous metastasis described in other case reports. The mass was biopsied via the punch technique, and histopathological examination showed metastatic RCC, clear-cell subtype, as evidenced by large cells with prominent nucleoli, clear cytoplasm, and distinct, thin cell borders arranged in nests and tubules (Figures 3, 4).

A subsequent positron emission tomography scan showed disseminated hypermetabolic pulmonary metastatic disease.
region found, in descending order, the most common sites of
and neck, a report on 111 cases of RCC that metastasized to this 

site to be sinonasal, cervical lymph node, skin, tongue,
parotid, and thyroid [7]. Of cutaneous metastases to the head
and neck, lesions manifest themselves most often in the scalp
and neck, as has been reported in the literature and is seen
on review of similar case reports [2-4,8-13]. In a case series
at a single institution, 10 of 306 cases of RCC were found to
be cutaneous metastases. Five of 10 presented in the scalp,
and none in the face [13].

In the cases of cutaneous RCC to the head and neck region
that we reviewed, most lesions were found to be shades of
red, purple, blue, or a combination of the 3, although brown
has also been reported [2-4,8,10,13-16]. The range of size was
0.5-4.5 cm. Most cases of cutaneous metastasis of RCC are re-
ported to occur in men and are of the clear-cell subtype, as
was the case with our patient [16].

Depending on the presentation, treatment of RCC may include
surgical resection, targeted chemotherapy/radiotherapy, or
palliative care [2,4,8,10]. Unfortunately, the average lifespan
of patients who present with RCC skin metastases is approx-
imately 6 months [2,10]. However, there has been a report of
several disease-free years after first presentation of facial cu-
taneous RCC metastasis. The hypothesis in this case was that
the patient presented with only 1 cutaneous metastasis and
was swiftly treated [4].

The fact that our patient’s lesion appeared several years after
his nephrectomy is important. An implication of this case is
that clinicians must be cognizant that malignancies may man-
ifest several years after primary resection. With regard to RCC
and cutaneous facial metastases, future research may investi-
gate the timing of resection in relation to primary presentation.

While cutaneous lesions of the face are common, clinicians must
be aware of certain features that may be signs of a more se-
rious disease process. Characteristics that may help to deter-
mine the etiology of a lesion include recent growth, pigmenta-
tion, and areas of high probability. Several types of cutaneous
lesions occur on the face, and as such, the differential diagno-
sis of our patient’s lesion was broad prior to biopsy. Common
benign lesions of the skin include acrochordon, cherry angi-
oma, dermatofibroma, epidermal inclusion cyst, keratoacan-
thoma, lipoma, pyogenic granuloma, sebaceous hyperplasia,
and seborrheic keratosis [17]. Common malignant lesions of
the skin include basal cell carcinoma, squamous cell carcino-
ma, and melanoma [18]. Merkel cell carcinoma is a neuroen-
docrine tumor that is worth mentioning. It has a similar appear-
ance to the lesion seen in our patient (rapid growth, painless,
firm, shiny, and flesh to bluish-red color), with approximately
1 in 3 cases presenting in the head and neck [19]. Given our
patient’s past medical history of prostate cancer, metastasis
from prostate malignancy was also a possibility. One reported

Discussion

RCC represents 2-3% of solid malignancies and represents
between 80% and 90% of primary renal tumors in adult pa-
tients [1-3]. As stated above, clear-cell is the most common
subtype of RCC [1]. Metastasis is not uncommon, and due to
the deep location of the primary tumor, the malignancy may
only be diagnosed after it has invaded local or distant struc-
tures. Around one-third of patients with RCC first present with
metastatic disease [4]. A study of 11 157 patients with meta-
static RCC found the most common sites of metastasis to be,
in descending order, lung (found in 45.2% of patients), bone
(29.5%), lymph nodes (21.8%), liver (20.3%), adrenal gland
(8.9%), and brain (8.1%) [5].

Cutaneous metastasis of RCC is rare, with a reported incidence
of 3.4% of all RCC metastasis sites [6]. With regard to the head
and neck, a report on 111 cases of RCC that metastasized to this
region found, in descending order, the most common sites of

Figure 4. Skin punch biopsies with large cells with prominent
nucleoli, clear cytoplasm, and distinct, thin cell borders
arranged in nests and tubules, consistent with clear-
cell renal cell carcinoma, ×40 magnification. The
primary tumor was found to have very irregular nuclei,
with large and prominent nucleoli.

with innumerable bilateral pulmonary nodules, hypermetabolic
left pleural soft tissue thickening with associated destruction
of the left posterior eighth rib consistent with metastatic dis-
ease, and uptake in the above lesions. Given the findings, the
malignancy was staged as pT3aNxM1, with an International
Metastatic RCC Database Consortium risk score of interme-
diate. The oncology team initially offered chemotherapy with
axitinib and pembrolizumab, which are both targeted chemo-
therapy medications. However, due to the advanced nature of
his condition, the patient elected for palliative care services.
He died approximately 6 months later.
case describes metastatic prostate cancer presenting as an asymptomatic neck mass. However, such cases are exceedingly rare and manifest in the lymph nodes rather than the cutaneous tissue [20].

Conclusions

Cutaneous presentations of renal cell carcinoma in the head and neck are exceedingly rare, and metastases to the face are less common than metastases to the scalp. When this disease process does occur, it typically presents as a raised mass of between 1 and 4 cm in size, with a red, purple, or blue color, or some combination thereof. This disease process has been shown to have a male predominance and most often occurs with the clear-cell subtype.

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