Renal cell carcinoma (RCC) accounts for 3% of all adult malignancies. One-third of these patients present with metastasis at the time of diagnosis. Another third will develop metastasis during the follow-up period [1].

Cutaneous metastases are rare among oncologic patients. The global incidence of cutaneous metastases in solid malignant tumors is 2.9%. Only 1.3% of urologic malignant tumors transform into skin metastases [2].

There are reports of RCC metastases in almost every part of the body [3, 4]. Lungs, bones, liver and brain seem to be the most common sites [5].

Case Presentation

We present a 73-year-old man who, 21 years previously, underwent left radical nephrectomy due to RCC. After discharge he was followed-up 10 years without signs of recurrence. Nine years later, he was referred to a dermatologist for evaluation of a solitary, flesh-colored, papillary lesion on the back of his head. The patient was asymptomatic and generally feeling well.

Complete local excision of the lesion was performed. Subsequent histological examination revealed clear cells consistent with metastatic renal carcinoma (fig. 1). Immunohistochemistry was positive for epithelial membrane antigen, vimentin and CD10, confirming the diagnosis of renal clear cell carcinoma (fig. 2). A computed tomography (CT) scan showed 2 nodules in the lungs (3.2 and 2.5 cm) and a 3.5-cm mid-pole mass in the right kidney.

The patient was started on oral treatment with sunitinib 50 mg daily for 4 weeks, after which he would take a 2-week rest interval before starting a new cycle. However, after 2 months of treatment, he developed asthenia and anorexia and generally felt unwell. Analysis revealed plateletpenia and leukopenia. Therefore, it was decided to reduce the dose to 37.5 mg daily.

Six months after starting treatment, a control CT scan revealed a partial response of both nodules in the lungs (they shrank to 2.5 and 1.5 cm). But no changes in the renal mass were observed.
At the 24-month review, a new CT revealed that the lung lesions had completely disappeared, but the size of the renal mass had not changed.

Discussion

RCC is well known for its potential to metastasize. However, skin metastases due to RCC are a rare condition. Only 3.4% of all RCCs give rise to metastases in the skin [2]. With regard to any metastasis that can be found in the skin in general, only 6% are of renal origin [6].

Although reports describe a wide range of clinical presentations, they are typically solitary lesions that appear as small nodules or plaques. Their color ranges from flesh-colored to brown, black or purple as a result of hemosiderin deposits in the dermis [7]. They may or may not be painful. Their clinical appearance mimics that of common dermatologic disorders such as hemangioma, cutaneous horn, granuloma, basalioma and sebaceous adenoma [2]. Their significance is frequently underestimated by the patient, so physicians must always bear in mind this possibility and perform proper examinations in every patient at risk of RCC.

Cutaneous metastases predominantly affect the dermis but occasionally extend to subcutaneous tissues. The epidermis is rarely involved. The “grenz zone” is a narrow zone of superficial dermis that separates the lesion from the epidermis. This area of tissue must be taken into account when performing a deep excision of the lesion rather than a simple superficial shaving [7].

The most common site of cutaneous metastasis of RCC is the trunk (40%), followed by the scalp (25%), limbs (10%) and face (8%) [6]. The majority are metachronous metastases. The mean time between diagnosis of the RCC and the development of metastases ranges from 6 months to 5 years [8]. There are several reports of cutaneous metastases more than 10 years after radical nephrectomy. However, to our knowledge ours is the only reported case of cutaneous metastasis appearing more than 20 years after radical treatment.

In 75% of cases, cutaneous metastases are associated with internal disease. This condition predicts a poor prognosis. Mean survival is 6–9 months after the detection of skin metastases [2, 7].

Treatment is based on complete excision of the skin lesion. When associated with other metastases, the use of anti-angiogenics has shown promising results [8, 9]. In certain cases, single radiotherapy has been used without surgical excision with good results [6, 10].

There are several independent prognostic factors that can predict the success of the treatment. These include

Fig. 1. View of the complete cutaneous lesion dyed with hematoxylin-eosin (2×). The main characteristic of RCC cells is a clear cytoplasm due to the accumulation of lipids and glycoproteins which are dissolved during routine histological processing. A fine network of small thin-walled blood vessels is also a frequent clue.

Fig. 2. CD10 reacts against proteins on the brush border of renal tubular epithelial cells, which are expressed by RCC. Epithelial membrane antigen positivity implies epithelial differentiation. Vimentin coexpression is frequent and intense in renal clear cell carcinoma.
single metastasis, metachronous metastasis with a long disease-free interval (12–36 months) and complete excision of the lesion [1].

In summary, cutaneous metastases from RCC are a rare condition that can appear many years after radical nephrectomy. The prognosis is poor. Complete surgical excision of the lesion – the primary treatment – can be followed by the use of anti-angiogenics in the presence of concomitant metastases.

References


