Cutaneous Metastasis of Renal Cell Carcinoma Masquerading as Scrotal Growth

Anchana Gulati · Vijay Kaushal · Rajni Kaushik ·
Puneet Mahajan · K. S. Jaswal

Received: 6 April 2014 / Accepted: 9 June 2014 / Published online: 22 June 2014
© Association of Surgeons of India 2014

Abstract Cutaneous metastases are an uncommon manifestation of visceral malignancy. We report a case of a 56-year-old male who presented with an ulcerated scrotal mass and inguinal swelling on the left side. Fine needle aspiration from both the sites revealed deposits of renal cell carcinoma though the patient had no urologic symptoms. Subsequent work-up revealed a renal mass. This case emphasizes the importance of keeping renal cell carcinoma as differential in cases who present with cutaneous metastases.

Keywords Renal · Carcinoma · Metastases · Scrotum · FNA

Introduction

Renal cell carcinoma is one of the greatest mimics in medicine. It has a tendency to metastasize widely before giving rise to any local signs or symptoms [1]. Cutaneous metastatic deposit as a presenting manifestation in a patient with asymptomatic undetected renal cell carcinoma is rare [2]. Cutaneous metastases are most often due to primary tumor in the lungs (28.6 %), malignant melanomas (18.2 %), and primary tumor in the gastrointestinal tract (14.2 %) [3]. We present a case of silent renal cell carcinoma presenting as a metastatic deposit in the scrotum mimicking as primary scrotal mass with secondaries in the inguinal region.

A. Gulati (✉) · V. Kaushal · R. Kaushik
Department of Pathology, Indira Gandhi Medical College,
Shimla 171001, India
e-mail: drsanjaygulati223@yahoo.co.in

P. Mahajan · K. S. Jaswal
Department of Surgery, Indira Gandhi Medical College,
Shimla 171001, India

Case Report

A 56-year-old male patient presented to the surgery OPD with chief complaints of a left-sided scrotal swelling of 4 years duration with sudden increase in size, associated pain, ulceration, and bleeding for the last 4 months. There was a history of loss of weight and generalized weakness. However, the patient did not have any urinary complaints. He had been a smoker for the last 20 years.

General physical examination revealed an average-built male with pallor. Systemic examination was within normal limits. Local examination revealed 6 cm×5 cm firm to hard swelling present on the lateral aspect of the scrotum on the left side with ulcerated surface and bleeding on touch (Fig. 1). Bilateral testes were felt separately. Left inguinal lymph nodes were enlarged. Clinical diagnosis of a scrotal growth with secondaries in the inguinal region was made.

Cytologic Findings

FNA was done from both the sites. The smears were cellular, revealing tissue fragments and aggregates of tumor cells focally adhering to basement membrane material. The tumor cells had low nuclear cytoplasmic ratio, central round bland nuclei, abundant pale granular, vacuolated cytoplasm, and ill-defined cell boundaries. Scattered bare nuclei with focally prominent macronucleolus were also seen in a foamy vacuolated background admixed with RBCs (Fig. 2). Cytologic diagnosis of cutaneous metastasis from renal cell carcinoma was given which was confirmed on histopathologic examination of incisional biopsy of scrotal growth. Work-up of the patient for renal primary was advised.

Ultrasonography and CECT abdomen were done which revealed a 10×7 cm-sized heterogeneous mass replacing the left kidney. The left renal vein was prominent with a low

Fig. 1 Swelling present on the lateral aspect of scrotum on the left side with ulcerated surface and bleeding on touch

attenuation filling defect seen within it up to its junction with the inferior vena cava suggestive of tumor embolus extending into the left gonadal vein. Several lymph nodes were seen at the aorto-caval, peri-portal, and para-aortic regions. A heterogeneously enhancing mass was seen in the left inguinal region in continuation with 11×7 cm-sized scrotal mass on the left side.

Bilateral orchidectomy with resection of metastatic scrotal growth was done as the scrotal mass was hard, fixed, and ulcerated, and invasion of underlying testes could not be ruled out. This was followed by left nephrectomy. Histopathology

Fig. 2 Aggregates of tumor cells with low N/C ratio, central, round, bland nuclei, abundant, pale, fine granular, vacuolated cytoplasm, and ill-defined cell boundaries. The background was pale, foamy, and vacuolated admixed with RBCs (Giemsa stain, ×400). Inset shows metastatic deposit of renal cell carcinoma beneath the scrotal skin and muscular tissue (H&E, ×100)

confirmed the diagnosis of renal cell carcinoma, clear cell type; hence, immunohistochemistry was not done.

Discussion

Renal cell carcinoma accounts for 3 % of all adult malignancies occurring in the 6th–7th decade of life. Tobacco is the most significant risk factor, and our patient was a chronic smoker. The classic triad of costovertebral pain, palpable mass, and hematuria is seen in only 10 % cases. Up to 1/3 of patients present with metastases, usually to the lungs, bones, regional lymph nodes, and liver. Cutaneous metastasis is relatively rare occurring in 3–11 % cases [4].

Cutaneous metastasis may be the presenting sign of underlying malignancy; 0.7–9 % of tumors metastasize to the skin. In females, breast carcinoma is the commonest in 24 % of cases followed by lung carcinoma. In males, lung carcinoma is the commonest followed by colorectal carcinoma, renal cell carcinoma, and bladder carcinoma.

Dorairajan et al. found the scalp to be the most common site of metastasis followed by the chest and the abdomen. Most patients had secondaries in at least one other site, lungs or bones [5]. A Japanese literature review reported 75 cases of renal cell carcinoma associated with skin metastases. The commonest site was the trunk (40 %) followed by scalp (25 %) and face in 8 % cases [6]. Ahmad et al. reported a similar case of metastatic cutaneous deposits on the chest in a 65-year-old male patient [2].

Our case also highlights the phenomenon of “metastatic tumor dormancy” wherein tumor masses or individual disseminated tumor cells remain growth-restricted for an extended period of time and awaken after years. This has been reported in non-Hodgkin lymphoma, renal cell carcinoma, melanoma, and breast carcinoma. The likely explanation comes from the nature of cancer stem cells, which form the predominant component of metastatic clone and show slow proliferation. Unfavorable tumor micro-environment, in the form of insufficient angiogenesis or good tumor immunity, also contributes to this quiescence. Later in life, changes in the micro-environment induce tumor cells to escape dormancy and proliferate again [7].

Differential diagnosis of clear cell tumors includes clear cell sarcoma, clear cell acanthoma, clear cell eccrine porocarcinoma, syringoma, and clear cell variant of squamous cell carcinoma. Usually, clinical details, site, and subtle features help to clinch the diagnosis or else IHC is resorted to [8].

Cutaneous metastasis in renal cell carcinoma (RCC) is a grave prognostic indicator; however, spontaneous regression of cutaneous metastasis has been reported. This case is being reported due to the unusual presentation of cutaneous metastasis of RCC as scrotal mass with inguinal lymphadenopathy. Cytology was instrumental in the diagnosis which was

confirmed on histopathology and supported by radiological evaluation.

Conflict of Interest None.

References

1. Alpers CE (2006) The kidney: in Robbins and Cotran pathologic basis of disease 7th edn ED Kumar, Abbas, Fausto: Elsevier Publications
2. Ahmad S, Zafar U, Siddiqui FA, Akhtar K (2008) Cutaneous metastasis in renal cell carcinoma. *J Cytol* 25:157–158
3. Preetha R, Kavishwar VS, Butle P (2004) Cutaneous metastasis from silent renal cell carcinoma. *J Postgrad Med* 50:287–288
4. Dhingra V, Misra V, Singh AP, Agarwal S (2011) Cytodiagnosis of cutaneous metastasis from renal cell carcinoma: a case report with review of literature. *J Cytol* 28:30–32
5. Dorairajan LN, Hemal AK, Aron M, Rajeev TP, Nair M, Seth A et al (1999) Cutaneous metastases in renal cell carcinoma. *Urol Int* 63: 164–167
6. Koga S, Tsuda S, Nishikido M, Matsuya F, Saito Y, Kanetake H (2000) Renal cell carcinoma metastatic to the skin. *Anticancer Res* 20: 1939–1940
7. Osisami M, Keller ET (2013) Mechanisms of metastatic tumor dormancy. *J Clin Med* 2:136–150
8. Atar Y, Topaloglu I, Ozcan D (2013) Metastatic renal cell carcinoma in the nasopharynx. *Indian J Pathol Microbiol* 56:40–42