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Case Reports in Clinical Medicine

A case of kidney metastasis in vulvar squamous cell carcinoma: A case report and review of literature

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ABSTRACT

Vulvar cancer is an uncommon tumor and represents 3% - 5% of all female genital tract malignancies. Squamous cell carcinoma (SCC) is the most common carcinoma of the vulva. Distant metastasis of recurrent vulvar squamous cell carcinoma is rare and occurs late in the disease process. We report the first case of kidney metastasis from a vulvar squamous cell carcinoma in a 68-year-old Caucasian female. On initial presentation she was treated with radical vulvectomy, upper urethrectomy with bilateral inguinal and deep femoral lymph node dissection. She was staged as FIGO stage IVA and also received adjuvant chemo-radiation. She remained in remission for 24 months. Subsequently she was found to have a kidney tumor and underwent nephrectomy and was diagnosed with metastatic squamous cell carcinoma from the vulva to the kidney. In cases of recurrent vulvar carcinoma distant metastasis to the bones, breast, and brain is only rarely reported. Metastasis to kidneys from vulvar carcinoma is exceptionally rare with no reported cases in the literature. Renal metastasis should be considered in the differential diagnosis of kidney tumor in this group of women.

Keywords: Vulva; Squamous Cell Carcinoma; Kidney Metastasis

1. INTRODUCTION

Squamous cell carcinoma is the most common carcinoma of the vulva. Squamous cell carcinoma (SCC) of the vulva can spread via direct extension into adjacent structures, lymphatic embolization and hematogenous spread to distant sites [1]. Distant metastases in patients with primary SCC of the vulva are relatively rare and usually occur late in the disease process. In cases of recurrent vulvar carcinoma distant metastasis to bones, breast, and brain is rarely reported. Metastasis to kidneys from vulvar carcinoma is exceptionally rare with no reported cases in the literature. Here we present the first case of vulvar SCC with metastatic spread to the kidney.

2. CASE PRESENTATION

A 66-year-old postmenopausal woman with one year history of lichen sclerosus et atrophicus presented in 2008 with bilateral lesions on the labia majora and minora, with ulceration present on the left labia lesion (**Figure 1**). A palpable inguinal lymph node was noted on the right side. A punch biopsy revealed moderately differentiated keratinizing SCC (**Figure 2**). Staging work up showed a single peripheral 5 mm nodule in the middle lobe of right lung unlikely to be metastasis. Patient underwent radical vulvectomy and upper urethrectomy with bilateral inguinal and deep femoral lymph node dissection. Histopathology was consistent with an invasive keratinizing SCC with a 5 mm depth of invasion. Urethral and deep vagina margins were focally positive with carcinoma. One out of six and 1 out of 5 inguinal lymph nodes were positive for metastatic spread on the left and right side respectively. Deep femoral lymph nodes on the left side were positive (2/2). She was staged as FIGO stage IVA (pT3 pN3 M0 G2). The patient underwent concurrent chemo-radiation therapy consisting of cisplatin and external beam radiotherapy of a 4500 cGy in 25 fractions over 36 days.

Patient remained in remission for 24 months and in 2010 experienced sudden onset of severe left flank pain and microscopic hematuria. CT scan of the abdomen

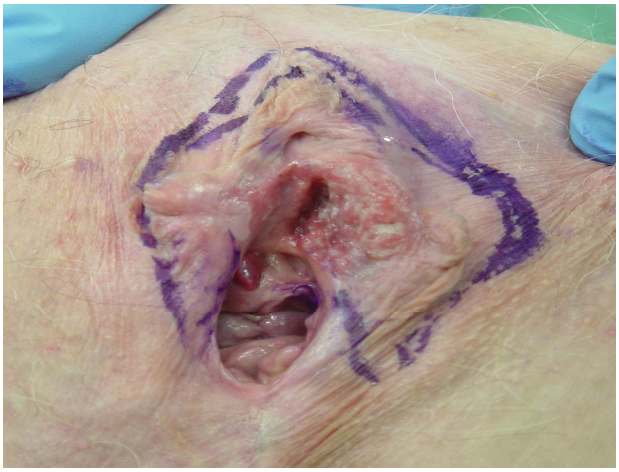

Figure 1. Vulvar tumor on initial presentation.

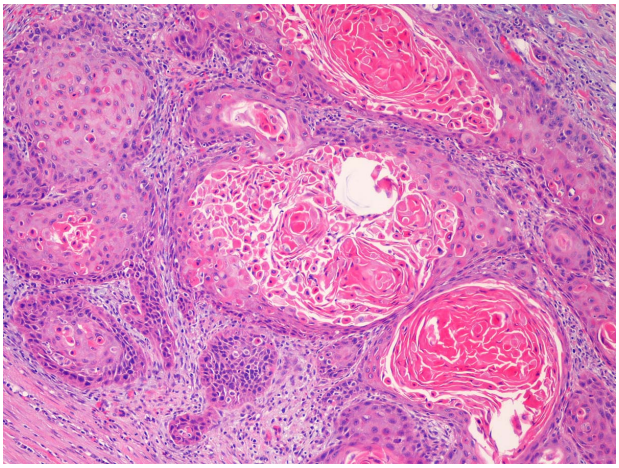

Figure 2. High power H & E stain vulvar tumor showing high grade squamous cell carcinoma.

reported a 5.5 × 4.5 × 4.5 cm infiltrative, ill defined, solid heterogeneous exophytic mass present within the left kidney appearance suggestive of renal cell carcinoma (**Figure 3**). Low density adenopathy was present subjacent to renal vein, measuring 2.2 cm. A left radical nephrectomy and para-aortic lymph dissection was performed.

Gross examination of the left kidney revealed two masses, one extended through the capsule to the perirenal fat and into the renal sinus and measured 5.5 × 4.5 × 4.5 cm and the other was present in the upper pole of the perirenal fat and measured 1.0 × 0.8 × 0.9 cm. Microscopic examination revealed moderately differentiated keratinizing SCC with lympho-vascular invasion consistent with metastatic vulvar carcinoma (**Figure 4**). Metastatic disease was also noted in the para-aortic lymph nodes (**Figure 5**) and small foci within the renal parenchyma and perirenal fat.

The patient's health progressively declined and was transferred to palliative care unit and passed away 2 weeks later in 2010.

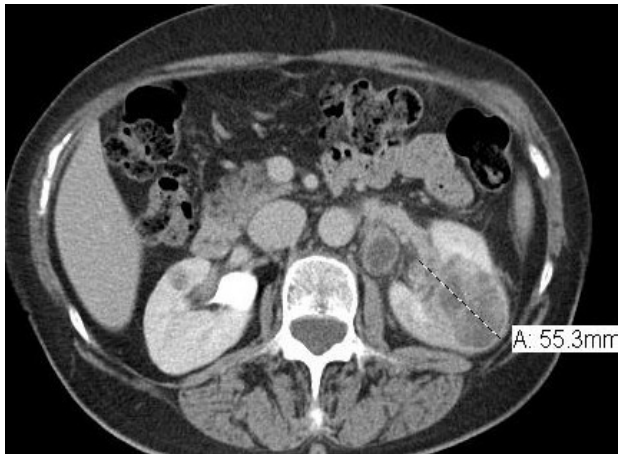

Figure 3. CT scan showing a 5.5 cm left renal tumor and enlarged para-aortic lymph nodes.

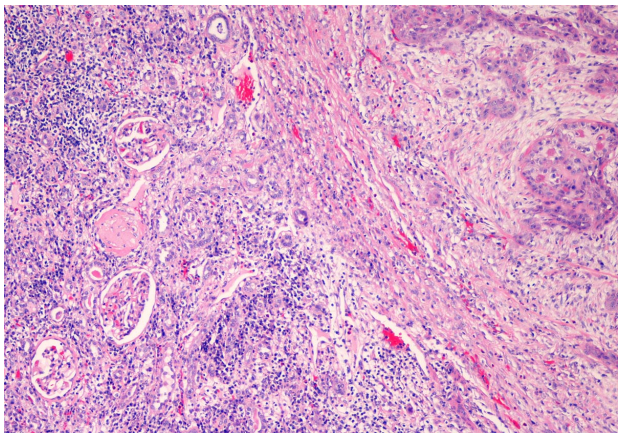

Figure 4. Low power H & E stain kidney showing metastatic vulvar squamous cell carcinoma.

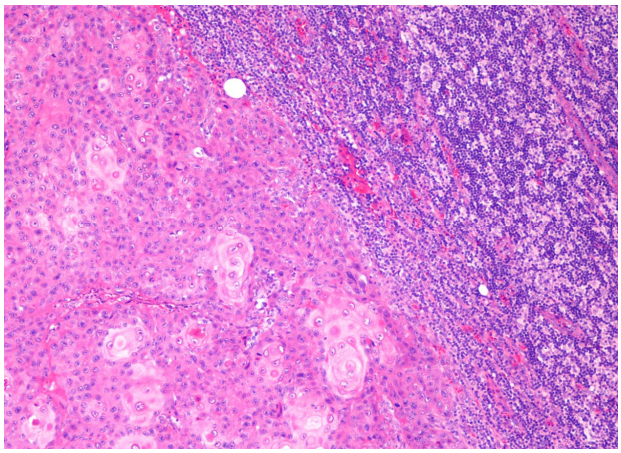

Figure 5. High power H & E stain lymph node showing metastatic vulvar squamous cell carcinoma.

3. DISCUSSION

Carcinoma of the vulva represents 3% to 5% of all female genital tract malignancies and 90% of the primary

vulvar malignancies are diagnosed as SCC [1]. Vulvar SCC can spread by three different routes, direct extension to adjacent structures, lymphatic embolization and hematogenous spread to distant sites. Lymphatic spread occurs early in the disease process and will commonly spread to the ipsilateral inguinal, femoral and pelvic lymph nodes, in a sequential manner. Spread to the inguinal and femoral lymph nodes occurs in about 30% of the patients and about 12% of patients will have spread to the pelvic lymph nodes.

Hematogenous spread to distant sites varies and occurs in about 8% - 12% of patients [2]. Distant sites of spread were reported in lung [3,4], skin [4-7], bone [4,8], intra-abdominal [4], liver [4], heart [4], breast [9], muscle [2] and central nervous system [4,10,11]. Our case is unique in that distant metastatic spread occurred to the kidney, which has not been previously reported in literature.

Metastatic spread of cancer to the kidneys is not common despite the fact that the kidneys receive 20% of the cardiac output. Metastatic spread to the kidney usually occurs through a combination of venous and lymphatic routes. Autopsy findings showed that the most common metastatic renal lesion is lymphoma [12] and the top four carcinomas metastasizing to the kidneys are lung, breast, stomach and opposite kidney [11,12] occurring in 4.6% to 7.6% of patients [13].

Majority of patients presenting with metastatic spread to the kidneys are asymptomatic and the presence of the kidney metastasis are not known until autopsy. However, patients with renal metastases may present with albuminuria, microscopic hematuria, a renal mass or renal failure [14]. In this case, the patient was diagnosed with a kidney metastasis after presenting to the emergency department with severe flank pain and microscopic hematuria. A CT scan confirmed the presence of a solid mass in the left kidney and a radical nephrectomy was performed.

4. CONCLUSION

Although renal metastasis is rare, and has never been documented in a case of vulvar SCC, it should be considered in the differential diagnosis of flank pain and microscopic hematuria in women with a past history of vulvar carcinoma. To the best of our knowledge, this is the first reported case of vulvar carcinoma which developed renal metastasis.

5. RESULTS

We report a case of 68-year-old women who were treated in September 2008 with radical vulvectomy, distal uretherectomy, and bilateral inguinofemoral lymphadenectomy for FIGO stage IVA (pT3 pN3, M0 G2) moderately differentiated squamous cell vulvar carcinoma. Due to a positive bilateral lymph node status, close vaginal and urethral margin, she received adjuvant pelvic and vulvar radiation (4500 cGy).

The patient remained clinically in remission until October 2010, when presented with flank pain. CT scan of abdomen reported a 5.5/4.5/4.5 cm tumor in the left kidney and appearance was suggestive of renal cell carcinoma (**Figure 1**). A left radical nephrectomy including paraaortic lymph node dissection was performed in November 2010. The histopathology and of resected renal tumor and paraaortic lymph nodes gave evidence of a metastasis of the known vulvar carcinoma.

REFERENCES

[1] Holschneider, C.H. and Berek, J.S. (2007) Vulvar cancer. In: Berek, J.S., Ed., *Berek's & Novak's Gynecology*, 14th Edition, Lippincott Williams & Wilkins, Philadephia, 1549-1580.

[2] Steele, M., Hegstrand, L.R., Julian, T.M. and Storm, F.K. (1990) An unuasual presentation of metastatic squamous cell carcinoma of the vulva. *Gynecologic Oncology*, **39**, 218-220. doi:10.1016/0090-8258(90)90436-O

[3] Barbetakis, N., Antoniadis, T., Kaplanis, K., Deligiannis, D., Toliou, T. and Tsilikas, C. (2002) Metastatic squamous cell vulvar carcinoma of the lung: A case report and review of literature. *European Journal of Gynaecological Oncology*, **23**, 475-476.

[4] Podratz, K.C., Symmonds, R.E. and Taylor, W.F. (1982) Carcinoma of the vulva: Analysis of treatment failures. *American Journal of Obstetrics & Gynecology*, **143**, 340-351.

[5] Ghaemmaghami, F., Modares, M., Behtash, N. and Moosavi, A.Z. (2004) Multiple, disseminated cutaneous metastases of vulvar squamous cell carcinoma. *International Journal of Gynecological Cancer*, **14**, 384-387. doi:10.1111/j.1048-891x.2004.014227.x

[6] Dudley, C., Kircik, L.H., Bullen, R., Snow, S., Landeck, A. and Buchler, D. (1998) Vulvar squamous cell carcinoma metastatic to the skin. *Dermatologic Surgery*, **24**, 889-892. doi:10.1111/j.1524-4725.1998.tb04268.x

[7] Kulkarni, R. and Bradford, W.P. (1995) Squamous cell carcinoma of the vulva metastasizing to the skin. *Acta Obstetricia et Gynecologica Scandinavica*, **74**, 571-572. doi:10.3109/00016349509024393

[8] Fischer, F., Kuhl, M., Feek, U., Romingers, M., Schipper, M.L., Hadji, P., Wagner, U. and Jackisch, C. (2005) Bone metastases in vulvar cancer: A rare metastatic pattern. *International Journal of Gynecological Cancer*, **15**, 1173-1176. doi:10.1111/j.1525-1438.2005.00175.x

[9] Vicus, D., Korach, J., Friedman, E., Rizel, S. and Ben-Baruch, G. (2006) Vulvar cancer metastic to the breast. *Gynecologic Oncology*, **103**, 1144-1146. doi:10.1016/j.ygyno.2006.07.037

[10] Vázquez, J.P., Cobo, S.L.T., Antón, F.M., Asado, A.C., Vidart, J.A., Coronado, P. and Díaz-Rubio, E. (2007) Brain metastasis and carcinomatous meningitis from vulvar

squamous cell carcinoma: Case report. *European Journal of Gynaecological Oncology*, 28, 152-154.

[11] Dursun, P., Ayhan, A., Tarhan, N.C., Coban, G. and Kuscu, E. (2009) Cerebellar metastasis in squamous cell vulvar carcinoma. *Archives of Gynecology and Obstetrics*, **279**, 69-71. doi:10.1007/s00404-008-0635-2

[12] Wagle, D.G., Moore, R.H. and Murphy, G.P. (1975) Secondary carcinomas of the kidney. *Journal of Urology*, **114**, 30-32.

[13] Stoughton, W.B. and Milam, D.F. (1975) Metastatic tumors to the kidney. *West Virginia Medical Journal*, **71**, 199-201.

[14] Bennington, J.L. and Beckwith, J.B. (1975) Tumors of the kidney, renal pelvis, and ureter. In *Atlas of Tumor Pathology*, 2nd Series, Fascicle 12, Armed Forces Institure of Pathology, Washington DC, 162-163.