



Upper urinary tract urothelial carcinoma diagnosis by biopsy of a vaginal metastasis

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ABSTRACT

Upper tract urothelial carcinoma presents 5% of urothelial cancers. The most frequent revealing symptom gross haematuria. Vaginal metastasis is rare revealing condition. The combination on these two symptoms should recall the diagnosis of this neoplasm. Biopsy of the vaginal mass can make the histologic diagnosis easily.

1. Introduction

Upper tract urothelial carcinoma (UTUC) accounts for approximately 5% of urothelial cancers.¹ Up to 25% of patients are diagnosed in metastatic stage.¹ The most common metastatic sites were distant lymph nodes, lung, bone, liver, local recurrence and adrenal gland, respectively.² Vaginal metastases are rarely reported. Metastases to the vagina are more common than primary vaginal malignancies and account for >80% of vaginal tumors.

Herein, we report a case of diagnosis of UTUC by biopsy of a vaginal metastasis.

2. Observation

A sixty-year-old woman consulted our department with right lumbosacral pain evolving for 2 months. No gross haematuria was reported. She has no medical history. Clinical examination found an asthenic patient. It also revealed a right flank tenderness with no lumbar contact. Vaginal examination found a firm solitary thumb-sized lesion in the lower third of the anterior vaginal wall, extending approximately 40 mm in depth (Fig. 1).

No vaginal bleeding was reported. A KUB radiology was performed, and showed no abnormalities. Laboratory investigation revealed raised inflammatory markers (leucocytosis 16,800/dl, C-reactive protein 25 mg/L). Renal function was within normal range.

A Biopsy was taken from this vaginal tumor. Histopathological examination concluded to the diagnosis of urothelial carcinoma. It showed squamous mucosa infiltrated by a high grade undifferentiated urothelial carcinomatous proliferation. It was organized in clusters and spans. Hyperchromatic nuclei and moderate anisocytosis were found.

Cytoplasm was moderately abundant. Fibrous stroma was abundant and inflammatory. These aspects concluded to a vaginal location of a high-grade urothelial carcinoma (Fig. 2).

A flexible cystoscopy was realized. No bladder tumor was found. Given these findings, the diagnosis of metastatic UTUC was strongly suspected. A thoraco-abdomino-pelvic computed tomography with contrast medium and delayed phases was performed. It showed an heterogenous obstructive enhancing mass of the right renal pelvis measuring 64 × 48 mm. It extended posteriorly to the perirenal fat approaching the homolateral quadratus lumborum muscle. Thrombosis of right renal vein was identified. It showed perirenal, right para-aortic and retroperitoneal multiples centimetric lymph nodes. Diffuses liver metastases were also found. A perineal suspicious vaginal lesion measuring 37 mm was described. Thoracic CT cuts showed multiples secondary pulmonary lesions (Fig. 3).

The patient was referred to start palliative chemotherapy. The patient deceased after one week, before starting further treatment.

3. Discussion

Metastasis of UTUC to the vagina is extremely rare. Only 6 cases have been reported worldwide, including this case.³ Most urothelial vaginal tumors are derived from bladder tumour.^{1,3} Most cases of vaginal tumors were metastases from mainly cervix cancer, followed by endometrial, colic and rectal cancers.⁴ Most cases of UTUC with vaginal metastases are left-side located.⁴

Mechanisms of tumoral dissemination of UTUC to the vagina are still hypothetical. Retrograde venous dissemination seems to be the most plausible mechanism.⁴ Some authors suggested a possible reflux from left renal vein to ipsilateral ovary vein, then to ovarian and uterovaginal

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Fig. 1. Vaginal suspect centimetric lesion.

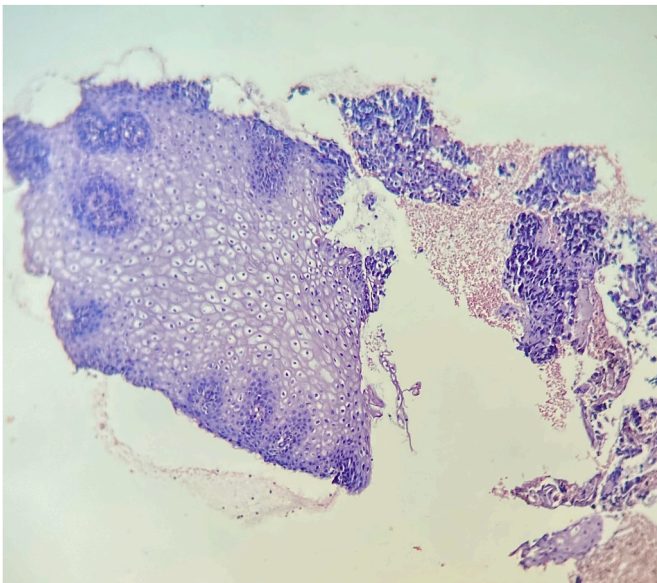


Fig. 2. Microscopic aspect of urothelial carcinoma invading normal vaginal mucosa.

plexus. The existence of anastomosis between the uterovaginal plexus and the obturator vein that receives branches from the external genital veins, would explain the occurrence of metastasis in the distal part of the vagina. Other studies postulated that urothelial carcinoma can affect the vagina, by direct extension from the bladder wall. However, it is

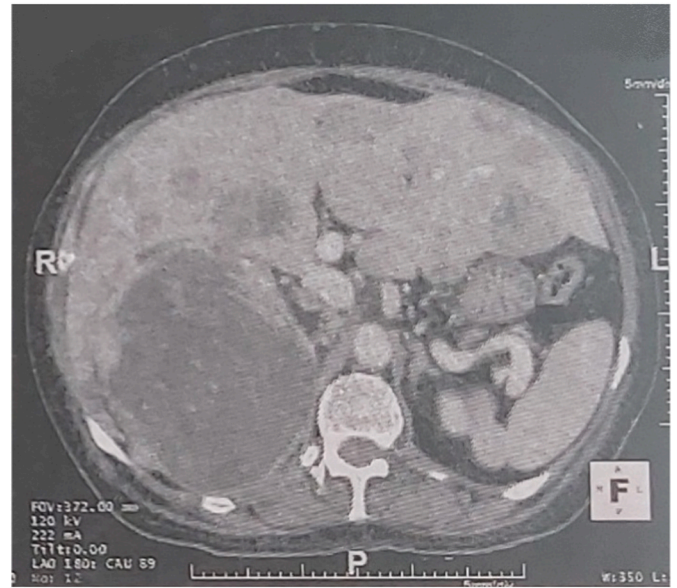


Fig. 3. CT showing right renal pelvis tumor locally advanced with diffuse hepatic metastasis.

accepted that there are cases of primary involvement of the vagina.⁴

Embryologic theory can help explain the ability of vaginal tissue to express urothelial carcinoma. The proximal vagina, as is the entire genitourinary tract, is derived from endoderm. The renal pelvicalyceal system and ureter are derived from the Wolffian ducts, and distally form the bladder trigone.⁵ The remainder of the bladder, urethra, and distal vagina are derived from the urogenital sinus, with the proximal vagina forming from the paramesonephric duct via extension of the uterine canal. While all endoderm in origin, the vagina is embryologically more similar to the bladder and urethra than the renal pelvis and ureter,⁵ which might explain the higher frequency of bladder origin of vaginal metastasis comparing to UTUC as reported in most cases.

The prognosis is usually guarded, as most of metastatic UTUC. However, metachronous occurrence of vaginal metastasis is likely to have better prognosis than synchronous occurrence.^{4,5}

Some authors reported multiple risk factors of UC metastasizing in the vagina such history of prior instrumentation (cystoscopy, hysteroscopy), prior gynaecologic surgery, and dysfunctional voiding and incontinence.

Many studies commented on the preponderance of primary vaginal UC in older women, suggesting a component of dysfunctional voiding as a mechanism by which tumour cells from the urinary tract can seed the gynaecologic system. There are no studies that justify usefulness of realizing routine vaginal cytology during the follow-up of females patients with history of UTUC.⁴

An important prognostic factor in patients presenting UTUC with vaginal metastasis is the presence or absence of secondary locations in other organs.⁴ This fact was observed in our cases. The evolution was lethal with rapid spread of disease.

4. Conclusion

Upper urinary tract urothelial carcinoma presents rarely vaginal metastasis. However, gross haematuria with vaginal mass should alert the clinician to investigate upper and lower urinary tract. Prognosis in such cases can be compromised, mainly in case of multiples other metastatic sites.

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