Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Urology

KRUKENBERG's Tumor: An Unusual Etiology of Obstructive Renal Failure (Case Report)

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DOI: https://doi.org/10.36347/sjmcr.2025.v13i03.019 | **Received:** 23.01.2025 | **Accepted:** 27.02.2025 | **Published:** 13.03.2025

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Abstract **Case Report**

Background: Obstructive renal failure is a frequent disorder in urological emergencies, which the etiologies can be multiple. Krukenberg's tumor, as presented in our article, is an unknown and a rare tumor responsible of obstructive uropathy. ***Case presentation***: Authors report herein the case of a 39-years-old woman, with gastric adenocarcinoma treated by chemotherapy, presented to the emergency department with obstructive renal failure due to a bilateral ureteral involvement due to krukenberg's tumor. A double pigtails stents and biopsy of the ovaries masses were conducted. ***Conclusion***: The krukenberg tumor is a rare and particular etiology of obstructive renal failure because it requires, in addition to drainage, a specific management which we will describe and which must be known by urologists for a good management of these patients.

Keywords: Case report; Krukenberg tumor; Obstructive renal failure; double pigtails stents.

BACKGROUND

The aim of this paper is to report and highlight the characteristics, symptoms, diagnosis, management and prognosis of gastric cancer metastatic to the ovaries revealed by an obstructive uropathy.

CASE PRESENTATION

A 39-years-old woman, with history of gastric adenocarcinoma treated by chemotherapy 5 months ago, presented to emergency for acute abdominal pain with nausea and vomiting, and she was afebrile.

Physical examination found an abdominal distention with general tenderness. Blood test found an acute renal failure: urea: 0.98 mg/dl; Creatinine: 81 mg/dl, white blood cell count: 9700/mm3; platelets, 204000/mm3, and urine analysis was normal.

Computed tomography of the abdomen and pelvis found a metastatic bilateral adnexal mass corresponding to Krukenberg's tumor with involvement of the ureters causing bilateral hydronephrosis obstruction and peritoneal carcinomatosis (Figure 1, Figure 2).

Double pigtail stents were successfully placed for the patient and creatinine levels began to decrease.

We proceed to a biopsy of the adnexal masses and the anatomopathology study confirm the diagnosis of Krukenberg's (Fig 3).

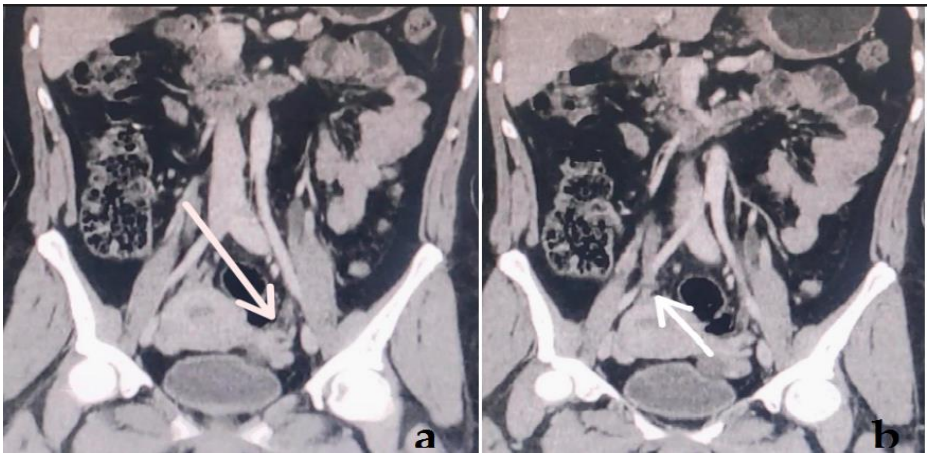

Figure 1: Coronal tomography imaging; a: Coronal tomography imaging showing a large tumoral lesion in pelvis compressing the left ureter; b: Coronal tomography imaging showing a large tumoral lesion in pelvis compressing the right ureter

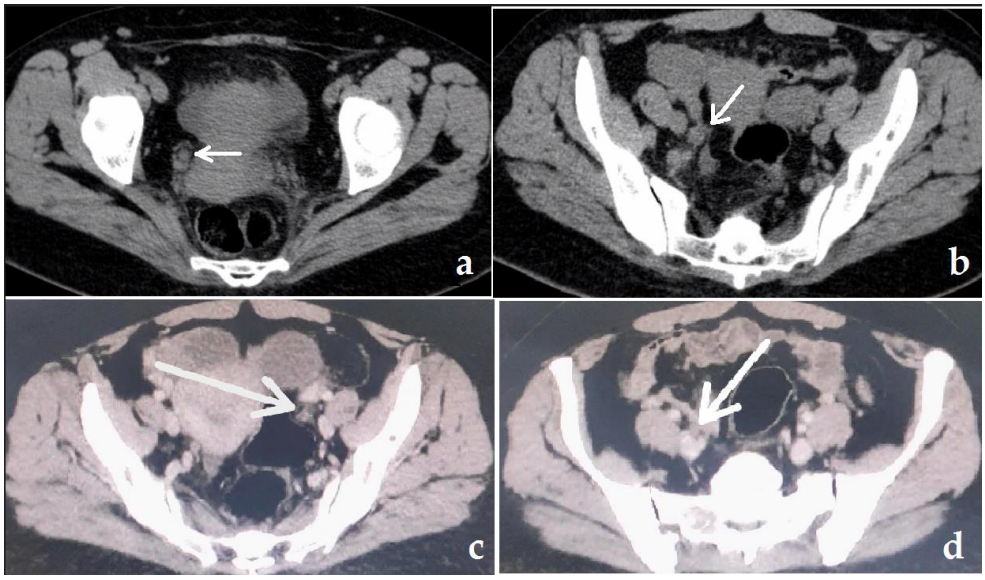

Figure 2: Axial tomography imaging; a,b,d: Axial tomography imaging showing a large tumoral lesion in pelvis compressing the right ureter; c: Axial tomography imaging showing a large tumoral lesion in pelvis compressing the left ureter

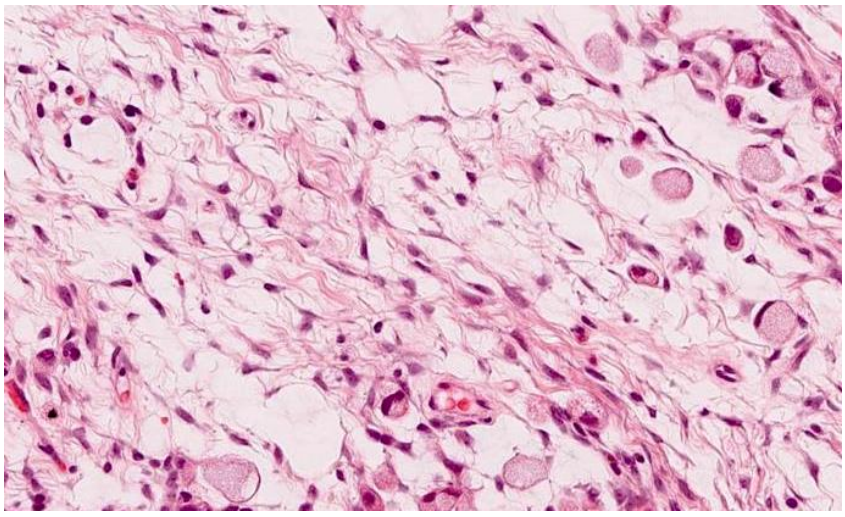

Figure 3: Histological section of the masses biopsy showing signet-ring cells

DISCUSSION

The present report describes a patient presenting with acute renal failure due to a bilateral ureteral obstruction from ovaries masses secondary to metastases from gastric origin as a signet ring cell carcinoma.

Urinary obstruction affects all age groups, the largest group is made up of people over 60, less common in females and more frequently in males due especially to the anatomic presence of prostate (benign prostatic hyperplasia and cancers) [1].

Otherwise, exceptional etiologies in females may be revealed by obstructive uropathy like the case of our patient diagnosed with a Krukenberg tumor with invading the ureters, after being treated for gastric cancer adenocarcinoma.

Metastatic involvement of the ureters in ovary tumor case is rare, in a serie of 460 patients with ureteral involvement, only 1% of involvement were due to ovary metastases. Encasement and constriction are relatively more common than invasion of the ureteral wall [2].

Despite the rarity of Krukenberg's tumor (1 to 2% of ovarian tumors) it's crucial to have an idea about specific diagnosis and treatment of this entity.

Krukenberg tumor is defined by ovarian metastases of a glandular epithelium, stomach is the common primary site in Krukenberg tumors (70%) [3]. The imagery shows masses at the expense of the ovary, multilobular solid cystic masses with signs of malignancy (locoregional extension, with peritoneal nodules) [4]. On MRI some specific characteristicsof Krukenberg tumor show bilateral complex masses with hypointense solid components (dense stromalreaction) and internal hyperintensity (mucin) on T1- andT2-weighted, but the imagery cannot differentiate the primary ovarian tumor from a secondary tumor [5].

Therefor the most important diagnosis is made based on histopathological examination by the presence of signet ring cells, and is one of morphological features of metastatic mucinous carcinoma of ovary, which are rare in primary ovarian mucinous tumors, the intracytoplasmic mucins in the signet ring cells are neutral andacidic (mostly sialomucins) and stain with Mayer mucicarmine, periodic acid-Schiff with diastase digestion and Alcian blue [6].

The therapeutic strategies in such cases are mainly decided according to the primary tumor; however, due to the metastatic character of Krukenberg lesions, the presence of ovarian metastases is usually considered as a sign of a systemic disease, which transforms the patient into a candidate for palliative systemic treatment. Otherwise, some authors suggest a surgical resection without gross residual disease may improve the prognosis of patients with ovarian metastasis from gastric cancer [7].

The prognosis of patients with gastric cancer with metastasis to the ovaries has been reported to be poorer compared with that of other primary tumors. Surgical intervention for these patients consists mainly of palliative resection to relieve the symptoms associated with a sizeable pelvic mass [6].

CONCLUSIONS

Krukenberg tumors are very rare. Their poor prognosis emphasizes the importance of early diagnosis and treatment. Awareness of the diagnostic manifestations of the tumor leads to the correct diagnosis and prevents tumor misclassification, thus avoiding improper clinical management.

List of Abbreviations: Not applicable

Declarations:

Ethics approval and consent to participate:

Tangier University Hospital does not require ethical approval for reporting individual cases or case series.

Consent for Publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Competing Interests: The authors report no competing personal or financial interest related to this work.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Availability of data and materials

The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Code availability: Not applicable.

Authors' contributions

SZ and KY was involved in concept, design, processing, writing the manuscript and critical analysis. KY and KA revised the manuscript. SZ was involved in data acquisition. All authors read and approved the final manuscript.

Acknowledgements: We want to acknowledge our patient from whom we learn.

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