Urology Case Reports 54 (2024) 102737

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Oncology

A case of extremely rare pathology: Renal malakoplakia

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ARTICLE INFO

Keywords:
Malakoplakia
Kidney
"Michaelis-gutman"bodies
Cell carcinoma

ABSTRACT

Malakoplakia is a granulomatous tissue inflammation with a characteristic histological appearance, mainly affecting the urogenital system and morphologically reflecting a macrophage disease. If bladder involvement is the most common, renal involvement is very rare and may be responsible for a differential diagnosis problem with renal cell carcinoma.

We present a clinical case of renal malacoplakia mimicking malignant renal cell carcinoma diagnosed after partial nephrectomy in a 58-year-old woman with no history of recurrent urinary infections.

1. Introduction

Malacoplakia is a chronic granulomatous inflammatory disease, which affects several organs, but preferentially the genitourinary tract. Its pathophysiology is not completely elucidated, it is secondary to a defect in digestion of bacteria by macrophages.[1]

Malakoplakia is characterized on the macroscopic level by pseudo-tumoral lesions, on the histological level by the presence of "Michaelis-Gutman" bodies in the macrophages.

Clinical and radiological signs are not specific, a renal lesion of malakoplakia on imaging can mimic renal cell carcinoma.

We present a clinical case of renal malacoplakia mimicking malignant renal cell carcinoma diagnosed after partial nephrectomy in a 58-year-old woman with no history of recurrent urinary infections.

2. Case report

We report a case of renal malacoplasia in a 53-year-old diabetic woman taking oral antidiabetics and without a history of recurrent urinary infections who presented with right lower back pain. An ultrasound study showed a right renal mass, the uroscanner objectified a right midrenal solidocyst mass, oval, well limited, hypodense, enhanced heterogeneously after injection of contrast product,measuring 49*41mm extended over 46 mm, pushing back the cavities pyelocaliceal, associated with renal and lumboaortic hilar lymphadenopathy and infiltration of pararenal fat (Fig. 1).

The diagnosis of renal tumor was made and the patient underwent a partial nephrectomy by laparoscopy.

Histopathological microscopic examination of the surgical specimen: the interstitial tissue is the site of a dense inflammatory infiltrate, essentially mononuclear, rich in plasma cells and sheets of foamy histiocytes with granular eosinophilic cytoplasm, with evidence of a few laminated mineralized concretions that may correspond to Michaelis-Gutmann (MG) bodies, Elsewhere, the pyelocalic cavities are bordered by an often hyperplastic urothelial lining, with sclerosis of the glomeruli and a pseudo-thyroidal appearance of the tubes. No tumour proliferation was found at any of the levels examined. (Figs. 2 and 3).

Standard staining was performed:

- Prussian blue staining (perls) revealing foamy macrophages loaded with iron granules.
- Periodic staining with Schiff's acid (PAS) revealed eosinophilic histiocytic cytoplasm.

NB: We do not have von Kossa staining (calcium).

This morphological aspect was in favor of malakoplakia on chronic pyelonephritis lesion.

3. Discussion

Malakoplakia is a rare inflammatory disease primarily affecting the genitourinary tract but can affect the skin, digestive system, lungs and

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https://doi.org/10.1016/j.eucr.2024.102737
Received 25 February 2024; Received in revised form 4 April 2024; Accepted 9 April 2024
Available online 10 April 2024

bones. It can be unifocal or multifocal.Sarkis et al. reported a case of Malakoplakia involving the kidneys, ureters and bladder[1]

Researchers believe that malakoplasia is associated with immunosuppression, recurrent urinary infections, especially *Escherichia coli*. It results from inadequate destruction of bacteria phagocytized by monocytes and macrophages.[2] In our case, the patient had no history of urinary infections, however she is uncontrolled diabetic which can explain the immunodepression encountered in malakoplakia.

The manifestation of renal malakoplakia is non-specific including fever, lethargy, loin pain, hematuria and loss of weight plus other non-specific symptoms. The radiological appearances are not specific (mimicking an abscess or renal carcinoma or other chronic inflammations of the kidney such as xantogranulomatous pyelonephritis). A unifocal kidney lesion may resemble renal cell carcinoma.[3] In our case, given the radiological images suggesting a renal tumor suspicious for malignancy and in the absence of a context of recurrent urinary infections, a partial nephrectomy was indicated.

The diagnosis of Malakoplakia should be considered in patients with a renal mass and a history of recurrent urinary infections or renal failure, immunosuppression and systemic illness. Fine needle aspiration biopsy should be one of the diagnostic options in highly suspected patients.[4]

Treatment of malacoplakia depends on the extent of the disease and the condition of the affected organ. Generally, patients with bilateral or multifocal disease can be treated with antibiotics, but complete remission is not always possible.Surgical excision is the treatment of choice for unifocal disease, and nephrectomy is indicated when renal damage is extensive.[4]

4. Conclusion

The diagnosis of malakoplasia should be kept in mind in patients with a history of recurrent urinary tract infections, immunosuppression. Renal biopsy is an option to discuss in highly suspicious patients in order to establish the correct diagnosis and avoid excessive surgical treatment; we should increase awareness of this disease and encourage practitioners to perform partial nephrectomy whenever possible for lesions suspicious for cancer.

Consent

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

Ethical approval

Since this is a case report. Ethics committee/IRB approval is not required. The study is exempt from ethical approval in our institution. A written informed consent was obtained from the patient family's for publication of this case report and accompanying images.

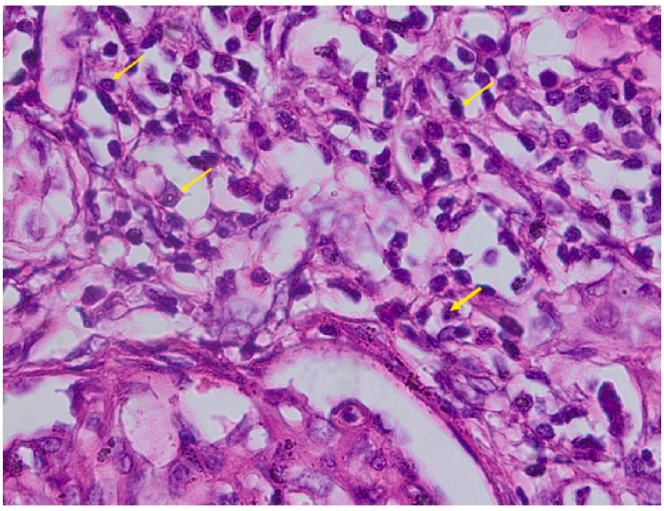

Fig. 2. Malakoplakia with sheets of macrophages with granular eosinophilic cytoplasm and neutrophils scattered in the interstitium and tubules, with evidence of Michaelis-Gutmann bodies (yellow arrows) (haematoxylin and eosin staining).
NB: We do not have von Kossa staining (calcium).

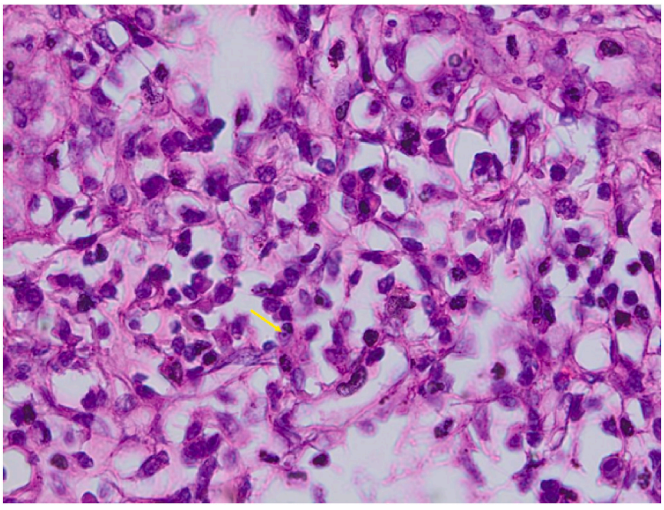

Fig. 3. Malakoplakia with sheets of macrophages with granular cytoplasm (haematoxylin and eosin staining).

Funding

The authors did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

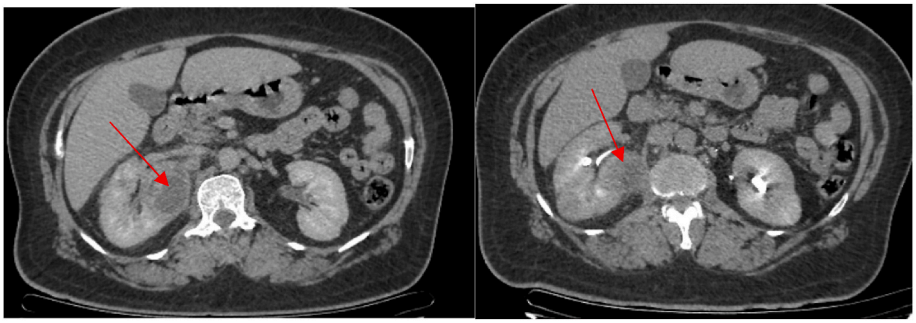

Fig. 1. CT scan showing right mid renal solidocyst mass, oval, well limited, enhanced heterogeneously after injection of contrast product, measuring 49*41mm.

CRediT authorship contribution statement

Yassine Daghdagh: Writing – review & editing, Conceptualization. **Ibtissam Razzouki:** Conceptualization. **Amine Moataz:** Validation. **Nisrine Bennani:** Conceptualization. **Mohamed Dakir:** Validation, Supervision, Conceptualization. **Adil Debbagh:** Validation. **Rachid Aboutaieb:** Validation.

Declaration of competing interest

The authors declare any conflict of interest.

Acknowledgements

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