NDT Plus (2008) 5: 363–364
doi: 10.1093/ndtplus/sfn051
Advance Access publication 6 May 2008

NDT PLUS
Nephrology Dialysis Transplantation

*Images in Nephrology*
(Section Editor: G. H. Neild)

# Von Hansemann cells and Michaelis–Gutmann bodies in a retroperitoneal mass

Catalina Vélez[1], Oscar A. Franco[2] and Luis F. Arias[2,3]

[1]Section of Pediatric Nephrology, [2]Department of Pathology and [3]PRYT Group, Faculty of Medicine, University of Antioquia, Medellín, Colombia

**Keywords:** malakoplakia; renal dysplasia; retroperitoneum

A 22-year-old woman was hospitalized for progressive right lumbar pain and tumefaction, fever and malaise of several months' duration. The patient had a 12-year history of intermittent symptoms of urinary tract infections. An exhaustive study searching for a cause of the recurrent infections was not done. Her family history was negative for renal diseases.

On examination there was tenderness, redness and a fistulous tract in the right lumbar region. Laboratory investigations showed a normal renal function. Urinalysis revealed numerous leukocytes. An abdominal computed tomography scan revealed a right kidney displaced and compressed by a well-defined lesion with cystic aspect that is in contact with renal pelvis. Adjacent there was an ill-defined retroperitoneal mass which was in contact with the psoas, extending from the diaphragm to the pelvis, with involvement of the lumbar subcutaneous tissue and connecting to the fistulous tract (Figure 1). Left kidney appeared normal. A CT-guided percutaneous biopsy of the mass was undertaken.

The biopsy revealed clusters of histiocytes with ample granular eosinophilic cytoplasm. In many of them were one or more round basophilic structures measuring between 1 μm and 10 μm approximately 1 μm and 10 μm; some were laminated, others appeared homogeneous, and others had a dense central core with a targetoid appearance (Figure 2). Nephrectomy of the right kidney demonstrated focal congenital cystic renal dysplasia.

Malakoplakia is a chronic inflammatory process which most often affects the urinary tract, but it may involve a variety of other organs. Malakoplakia is the result of an acquired defect in macrophage function causing impairment of bactericidal activity. The large macrophages that are present at sites of infection (von Hansemann cells) exhibit numerous secondary lysosomes containing partially digested organisms. Fusion and calcification of these lysosomes result in the formation of intracytoplasmic bodies called Michaelis–Gutmann bodies, considered pathognomonic of malakoplakia [1,2].

*Conflict of interest statement.* None declared.

## References

1. August C, Holzhausen HJ, Schröder S. Renal parenchymal malakoplakia: ultrastructural findings in different stages of morphogenesis. *Ultrastruct Pathol* 1994; 18: 483–491
2. Dasgupta P, Womack C, Turner AG *et al*. Malacoplakia: von Hansemann's disease. *BJU Int* 1999; 84: 464–469

*Received for publication: 25.3.08*
*Accepted in revised form: 11.4.08*

*Correspondence and offprint requests to*: Luis F. Arias, Department of Pathology and PRYT Group, Faculty of Medicine, University of Antioquia, Carrera 51D No 62-29, Medellín, Colombia. Tel: +57-42634455; Fax: +57-45106048; E-mail: luisfer_uda@yahoo.com

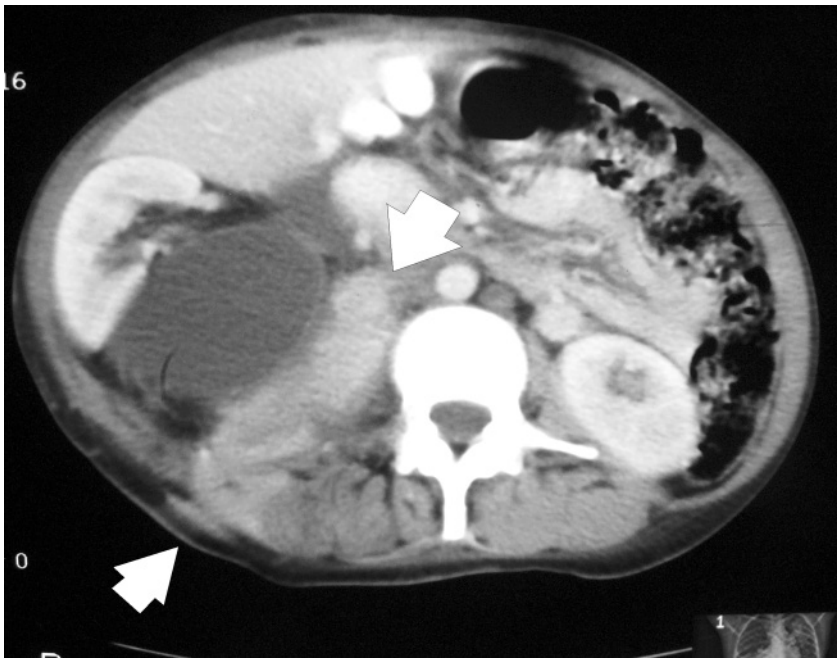

**Fig. 1.** CT scan revealed a well-defined capsulated mass with cystic aspect in contact with the right renal pelvis. In retroperitoneum there is an ill-defined mass in contact with the psoas and extending to paravertebral space, lumbar subcutaneous tissue and skin (fistulous tract) (arrows). The mass extends from the right diaphragm to the pelvis.

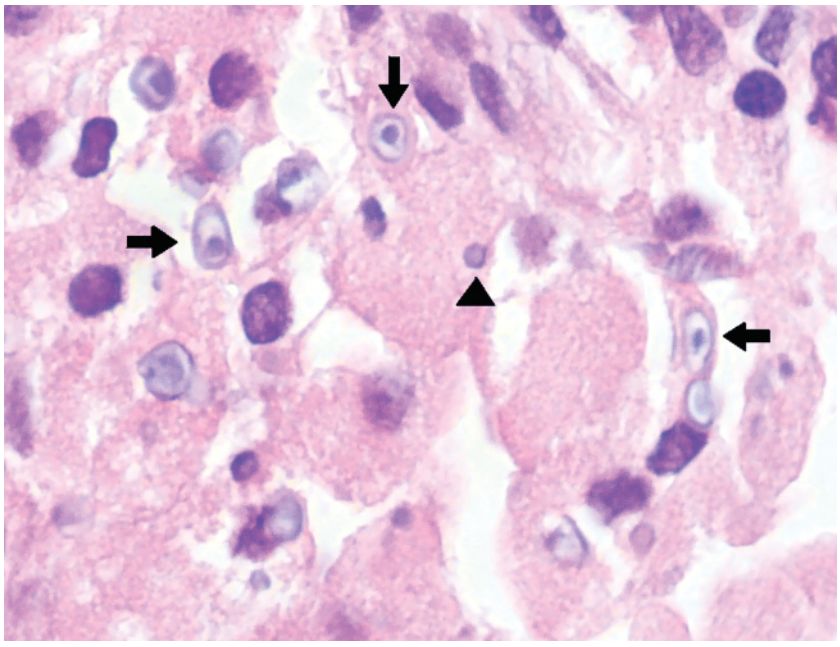

**Fig. 2.** Collections of large histiocytes with granular eosinophilic cytoplasm: von Hansemann cells. The cytoplasm contains abundant basophilic inclusions with a variable size: Michaelis–Gutmann bodies. Some of them are laminated and others have targetoid appearance (arrows). The typical targetoid appearance may not be apparent if the plane of section does not pass through the dense central core (headarrow). Michaelis–Gutmann bodies demonstrate positive results using periodic acid-Schiff stain, von Kossa stain for calcium and sometimes Perls Prussian blue stain for iron (haematoxylin–eosin, original magnification, $\times 1000$).