



DEPARTMENT OF PATHOLOGY

Short Report in Pathology

Organ system: Genitourinary

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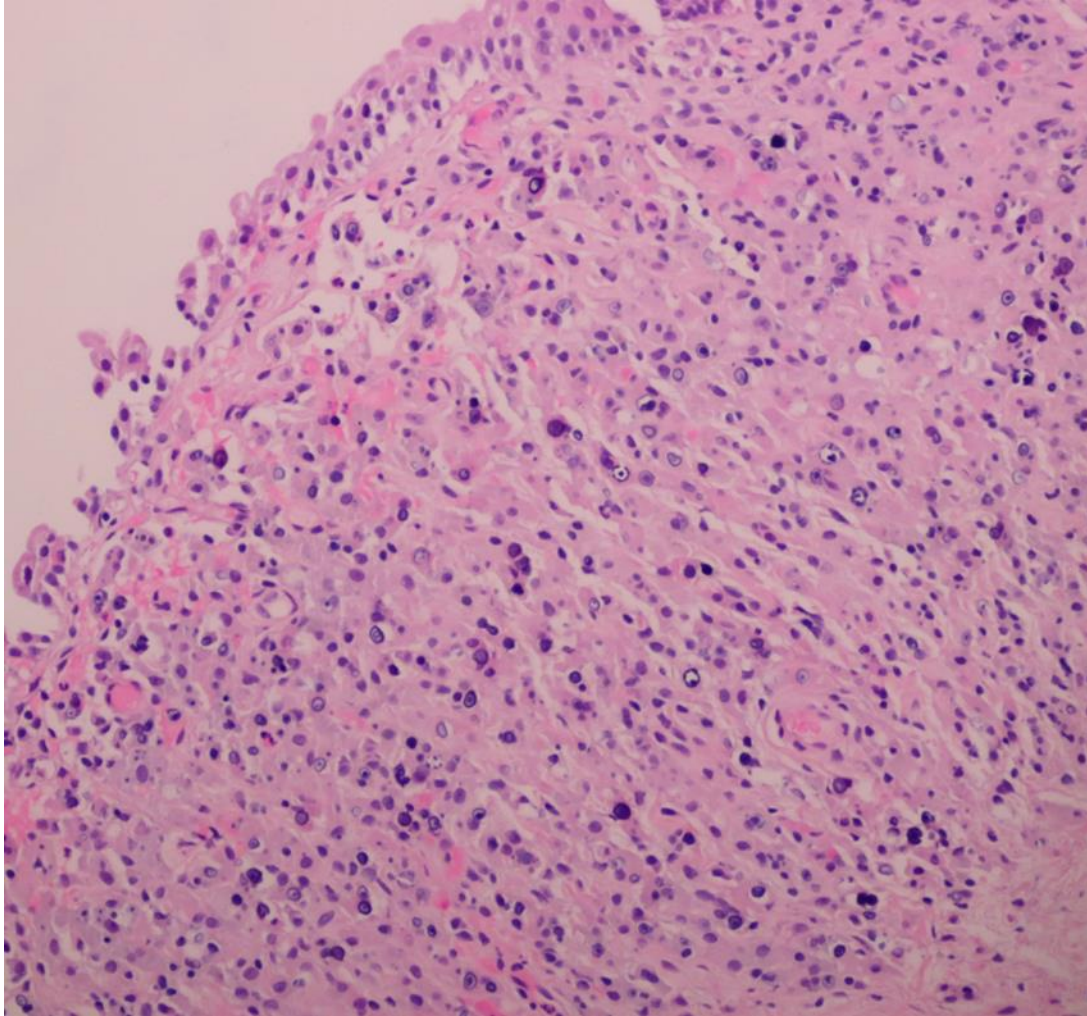
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8/20/2023

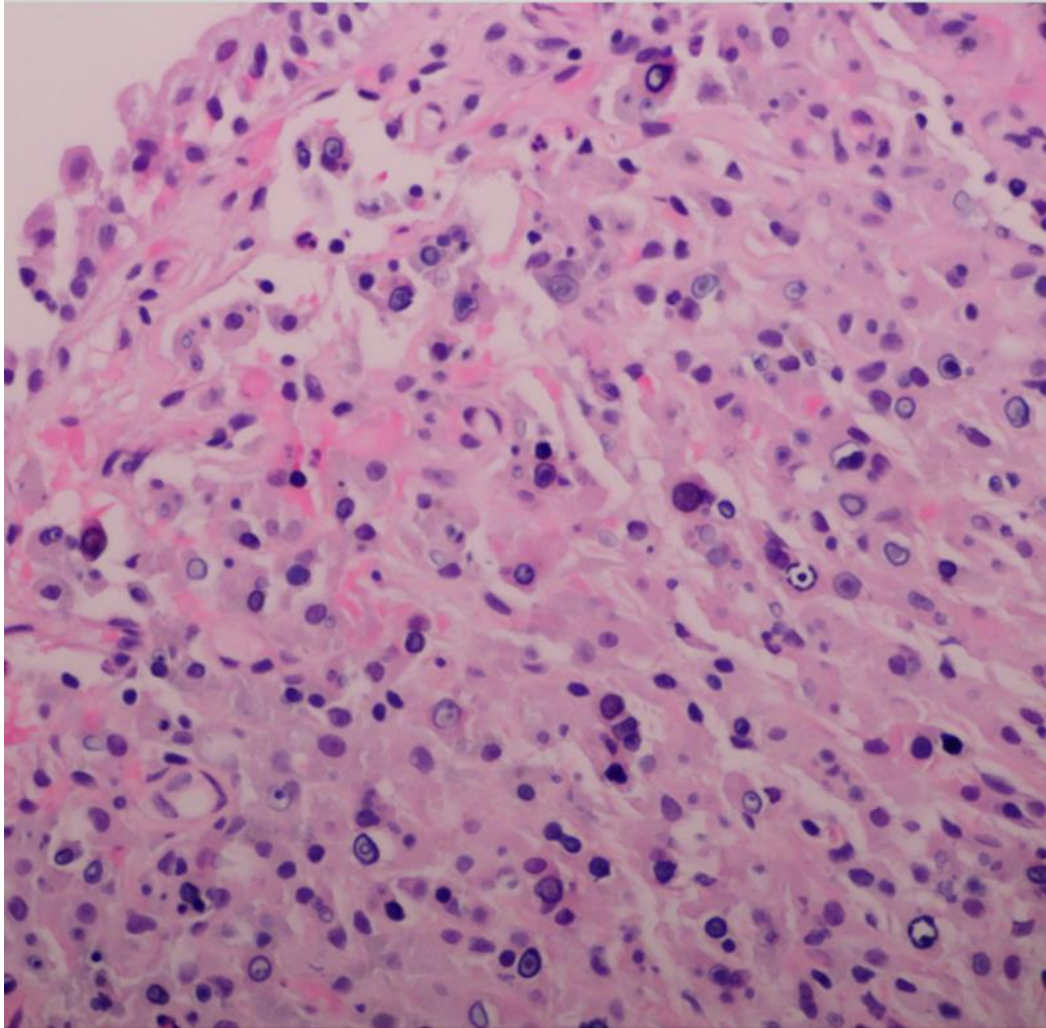
History:

A 42-year-old postmenopausal patient presented for recurrent urinary tract infection with abdominal pain and bloating. Imaging showed multiple uterine fibroids in the body, posterior and right lower uterine segment, and concentric thickening of the urinary bladder suggestive of chronic outlet obstruction. Cystoscopy revealed multiple 3 to 5 mm tan raised lesions throughout the bladder.

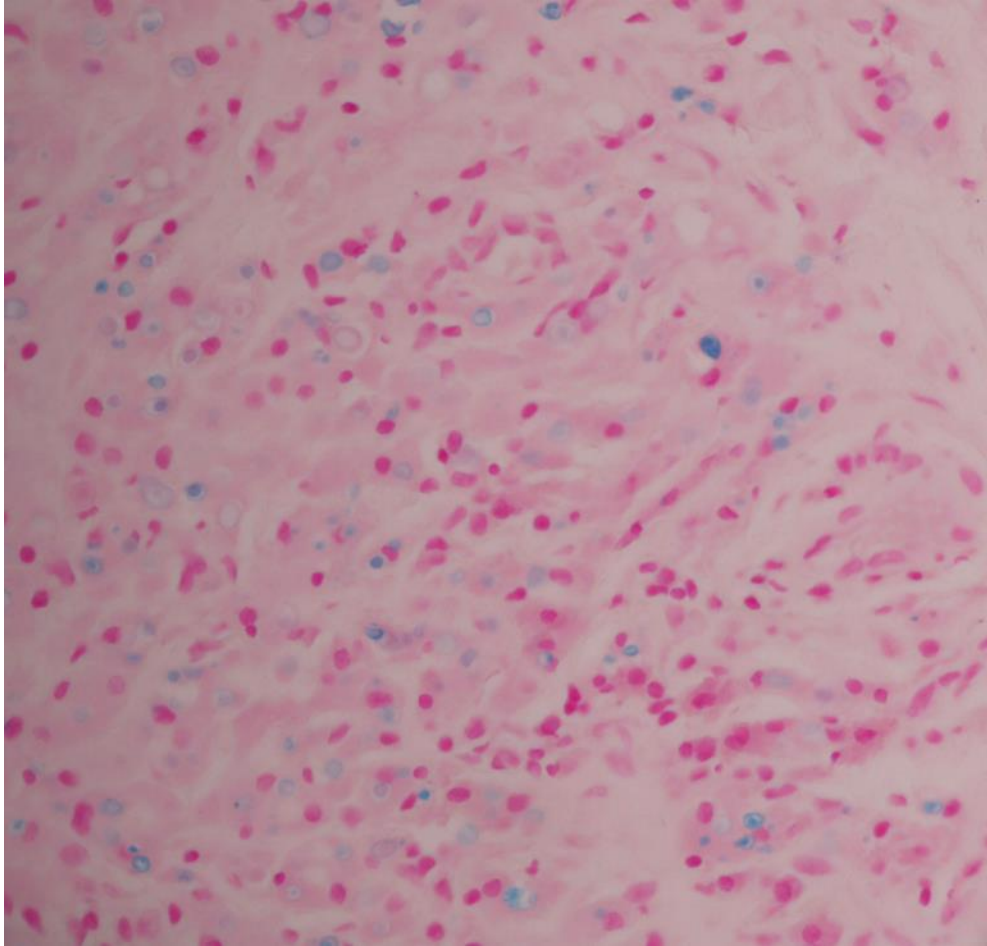
Microscopic Images:



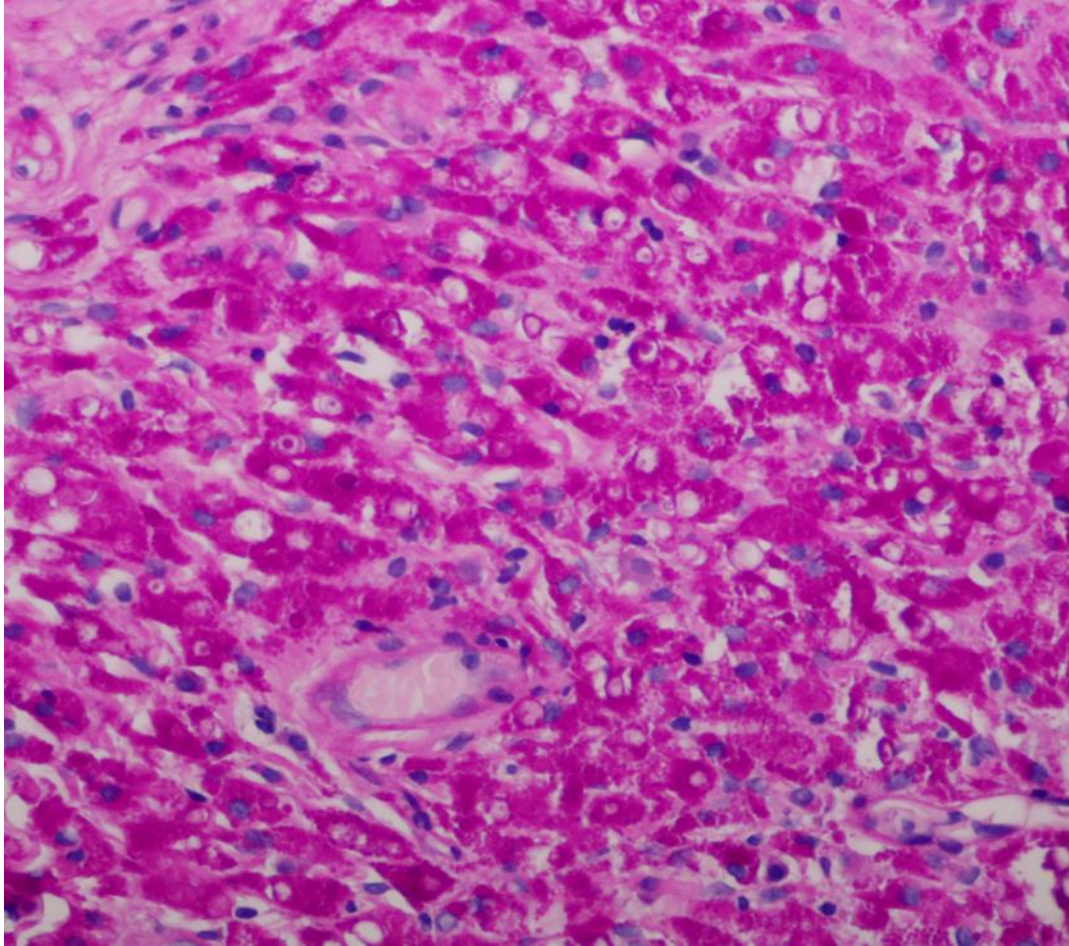
Urinary bladder mucosa showing a diffuse sheet of eosinophilic mononuclear cells (macrophages) beneath urothelium (H&E, 200X)



Urinary bladder mucosa showing rounded concentric basophilic intracytoplasmic inclusions within the macrophages known as Michaelis-Gutmann bodies (H&E, 400X)



Iron stain (400X)



Periodic acid stain (400X)

Diagnosis:

Malakoplakia, urinary bladder

Differential diagnoses:

1. Extranodal Rosai-Dorfman disease
2. Poorly differentiated carcinoma
3. Lymphoma

Discussion:

Malakoplakia is a chronic inflammatory disease that was identified in 1901 by von Hansemann and first reported in 1902 by Michaelis and Guttman. It commonly involves the urogenital tract

and has been reported in many organ systems, including the gastrointestinal tract, bone, lungs, and skin. This disease has a higher predominance in females (4:1 female-male ratio) with the average age of presentation being 50 years old. The patient usually presents with a history of recurrent urinary tract infections, lower urinary tract symptoms, or hematuria.

Bacterial infections, including E. Coli (80% of cases) are thought to be part of the pathogenesis, as research suggests defective bacterial phagocytosis and lysosome function is the cause of the disease. Gross examination shows single to multiple, tan-yellow, nodular, or polypoidal lesions on the intact mucosal surface. Histopathological examination shows calcified lysosomes known as Michaelis-Gutmann bodies within clusters of macrophages. These are rounded concentric basophilic intracytoplasmic inclusions within the macrophages. The cells are positive for a Von Kossa stain (calcium), and iron stain, and macrophages are highlighted on PAS stain and stained positive for CD68. Additional findings included large foamy macrophages with granular cytoplasm, occasional multi-nucleated giant cells, and lymphocytes. The histologic differential diagnosis includes extranodal Rosai-Dorfman disease, poorly differentiated carcinoma, and hematological malignancy.

References:

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3. Subbaraya S, Sawant A, Pawar P, Patil S. Malakoplakia prostate presenting as urinary retention: a report of two cases and review of the literature. *BMJ Case Rep.* 2021 Jul 28;14(7):e243927. doi: 10.1136/bcr-2021-243927. PMID: 34321270; PMCID: PMC8319990.
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