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Malacoplakia and Spermatic Granuloma Complicating Vasectomy

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ABSTRACT

Malacoplakia is a granulomatous disease with a histiocytic infiltrate containing calcified structures called Michaelis-Gutmann bodies. These structures are considered to represent an abnormal response to infection involving defective lysosomes and abnormal microbubular assembly. The disease most frequently involves urinary and genital tracts, but has also been described from most other organs. Here we present the first case of malacoplakia only involving the vas deferens.

INTRODUCTION

Malacoplakia is a granulomatous disease, which most frequently involves the urinary and genital tract but has also been described from most other organs [1,2]. The disease is characterized microscopically by a histiocytic infiltrate (the so-called von Hansemanns cells) containing calcified structures named Michaelis-Gutmann bodies. These can be seen both intra- and extracellularily and are considered to represent an abnormal response to infection involving defective lysosomes and abnormal microtubular assembly [3]. The first article describing the disease was published in 1902 [4]. Urinary organs as targets usually involve the urinary bladder and testis with sometimes engagement of the epididymis [5]. Sole engagement of the epididymis without concurrent involvement of the testis is reported in 9 cases [5]. We have not been able to find a case of malacoplakia solely targeting the vas deferens. We thus find it of interest to report one case, as besides spermatic granuloma the firm fibrous lump palpated clinically might simulate tumour or other forms of specific inflammatory states.

MATERIALS AND METHODS

The surgical specimens were fixed in formalin and routinely processed. Paraffin sections were stained with hematoxylin and eosin (HE), periodic acid-Schiff stain (PAS) for mucin, Prussian blue for iron and von Kossa´s stain for calcium.

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For electron microscopy paraffin-embedded, formalin-fixed material was used. Using light microscopy the area in question was marked and the corresponding field on the paraffin block taken out. A very thin slice (0.25mm) was deparaffinized in xylene for 1.5h in a 60°C oven, thereafter rinsed in fresh xylene again and kept in room temperature for another 30 min. The deparaffinized tissue was cut into small cubes and immersed in 100% "blue" ethanol (0.5% methyleneblue) then in 99.5% ethanol followed by propylene oxide for 30 min each. The tissue was then infiltrated in propylene oxide/resin 1:1 for 2h and in pure resin for 1.5h, polymerized over night in a 60°C oven. Ultrathin sections were cut and stained with 4% uranyl acetate dissolved in distilled water for 30 min in 40°C, washed with distilled water and then stained with Reynolds lead citrate [6] for 2 min in room temperature. The grids were examined in a Philips CM10 electron microscope at 60kV.

CASE REPORT

A 39-year old man presented with a tumour in the right vas deferens, which he had noted since 1998. Before that the patient had undergone ligation of the vas deferens. The tumour was removed in 2004. Macroscopically a cystic lesion was present with a diameter of 2 cm. The cyst was filled with a brownish material. Microscopic examination showed a benign cyst in the vas deferens covered with a fibrotic capsule. In the cyst wall a spermatic granuloma was observed containing sperms and a granulomatous inflammatory reaction was also present. Focally, an area in the outer part of the wall contained granulated histiocytes (Fig. 1). These granules stained positive with iron (Fig. 2a), PAS (Fig. 2b) and von Kossa´s staining (Fig. 2c). Electron microscopy confirmed the presence of the characteristic Michaelis-Gutmann bodies (Fig. 3a and 3b).

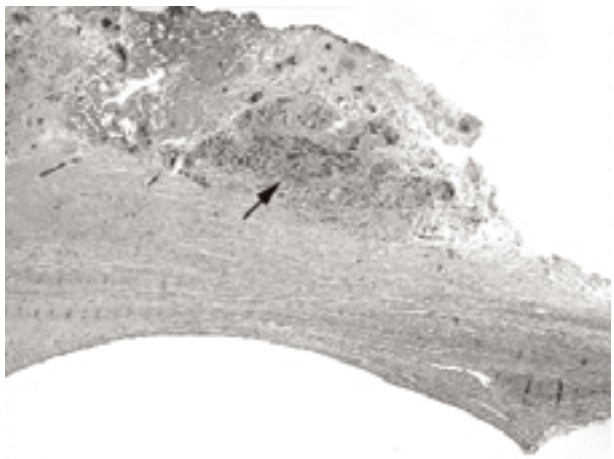

Fig 1. The area in the wall of the cyst containing granulated histiocytes.

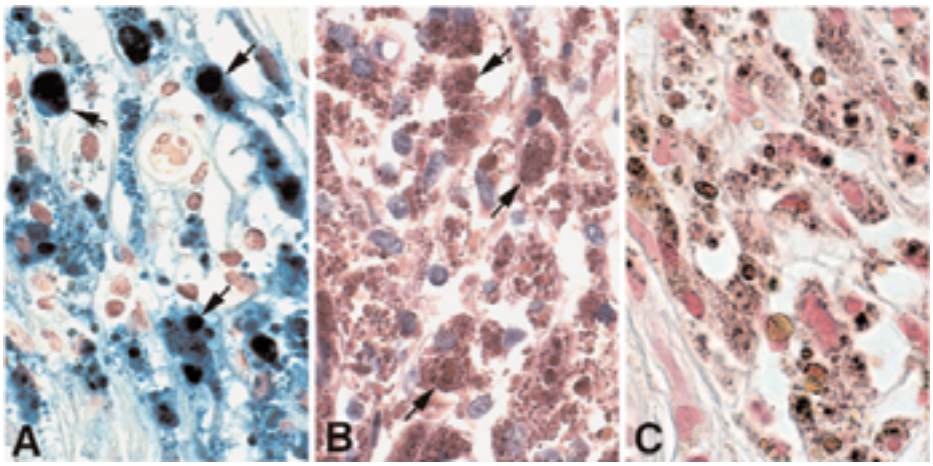

Fig 2. The Michaelis-Gutmann bodies staining positive with iron (a), PAS (b) and von Kossa´s (c) staining.

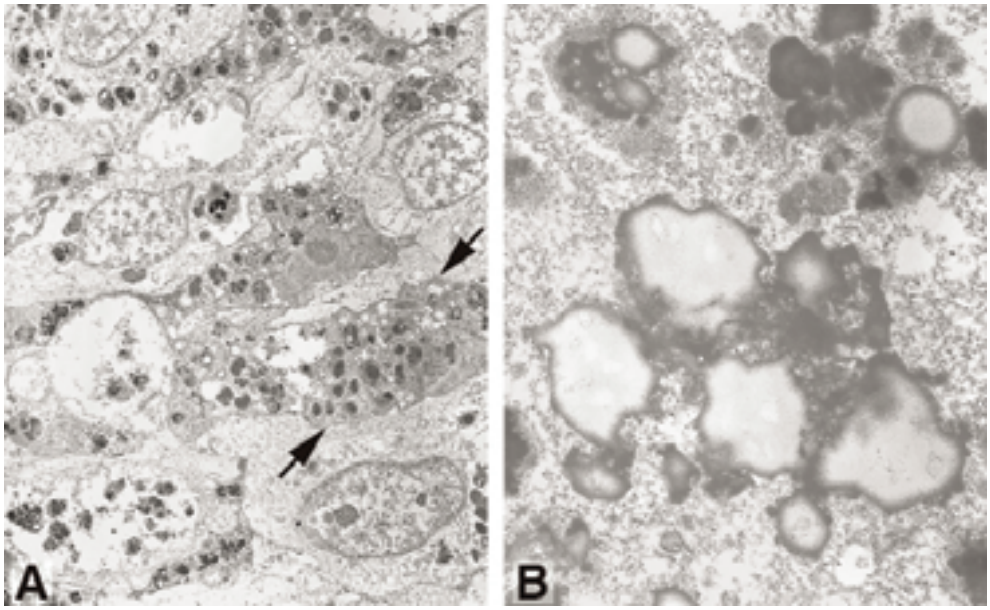

Fig 3. An electron microscopic picture showing the characteristic Michaelis-Gutmann bodies (a and b).

DISCUSSION

Malacoplakia of the vas deferens seems to be a rare disease as we were not able to find a published case solely targeting the vas deferens. The histopathological appearance is characteristic and is easily recognized. As malacoplakia is a disease that can affect

many organs it is important to know that this entity exists. Not only for histopathologists but also for clinicians as the macroscopic appearance can easily simulate a malignant process and specific infections as *e.g.* tuberculosis. Spermatic granuloma is a well-known complication after the vasectomy procedure [7, 8], but it is also important to notice whether malacoplakia is present as those lesions represent a septic component of the granuloma lesion.

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