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Three Cases of Malacoplakia of the Gallbladder

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ABSTRACT

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Malacoplakia is a granulomatous disease with a histiocytic infiltrate containing calcified bodies called Michaelis-Gutmann bodies considered to represent an abnormal response to infection involving defective lysosomes and abnormal microtubular assembly. The disease most frequently involves urinary and genital tracts, but has also been described from most organs. Reports from the gallbladder are extremely rare and as it might simulate specific infection, parasitic infestation as well as malignancy it is of importance for the surgeon and pathologist to be aware of the entity.

In this article we present three cases of malacoplakia of the gallbladder, a rare disease in this location.

INTRODUCTION

Malacoplakia is a granulomatous disease where microscopic examination shows a histiocytic infiltrate (von Hansemans cells) with calcified bodies called Michaelis-Gutmann bodies. These can be seen both intra and extracellularily. The etiology of the disease is unclear. It is thought that it arises as a result of an abnormal response to an infection involving defective lysosomes and abnormal microtubular assembly [1]. The first article describing the disease was published in 1902 [2]. The disease most frequently involves the urinary tract although it has been described in many other organs including the male and female genital tract, the gastrointestinal tract, the retroperitoneum, and the skin [3]. Very few cases have been reported from the gallbladder [4, 5, 6]. As the entity might simulate specific infection, parasitic infestation and malignancy we thought it of importance to report another three cases.

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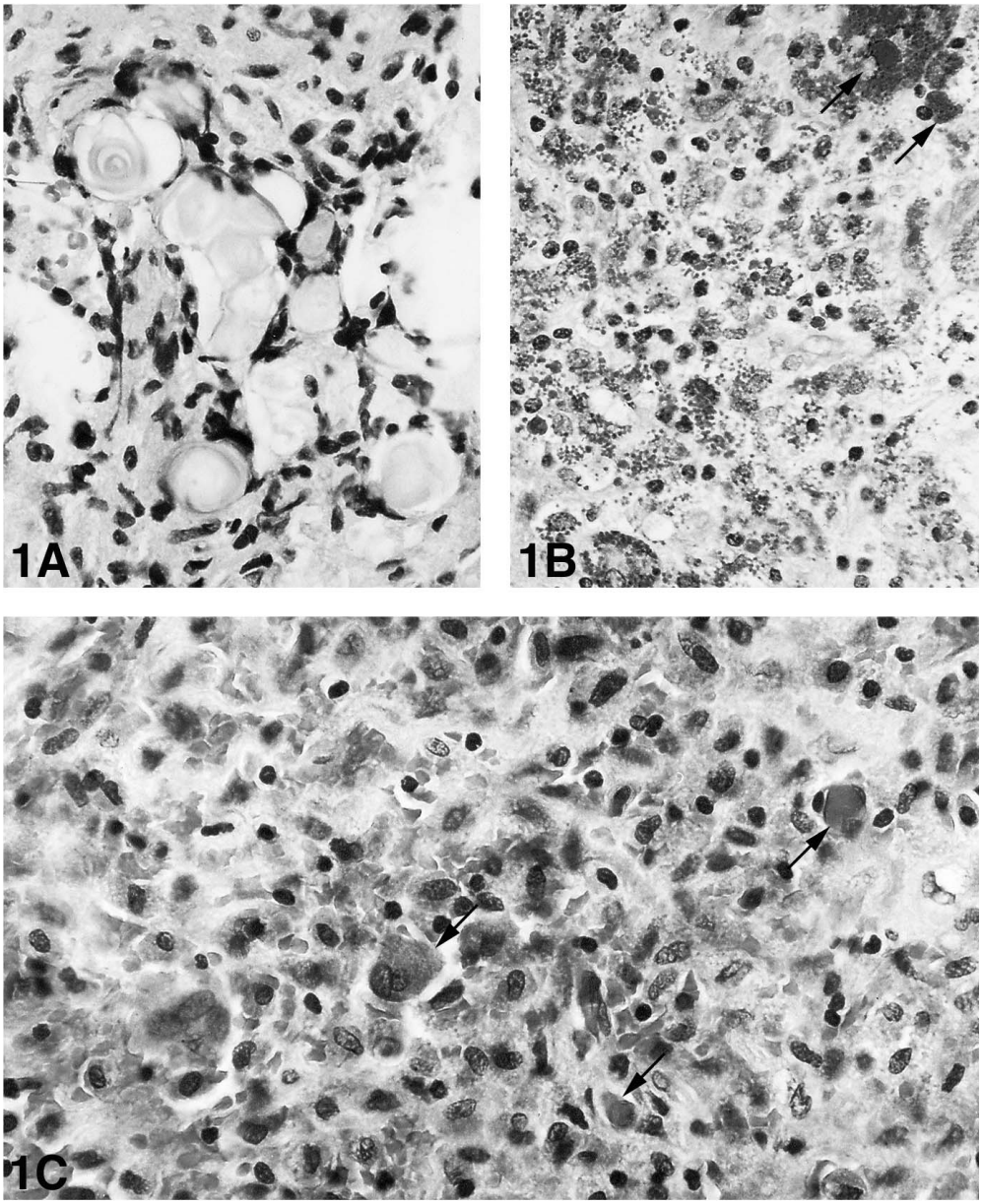

Fig. 1. Case 1. A concentric assembly of calcified bodies, HE stain (a). A positive PAS staining showing the characteristic Michaelis-Gutmann bodies (b). A histiocytic infiltrate also containing Michaelis-Gutmann bodies, HE stain (c).

MATERIALS AND METHODS

The surgical specimens were fixed in formaline 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.

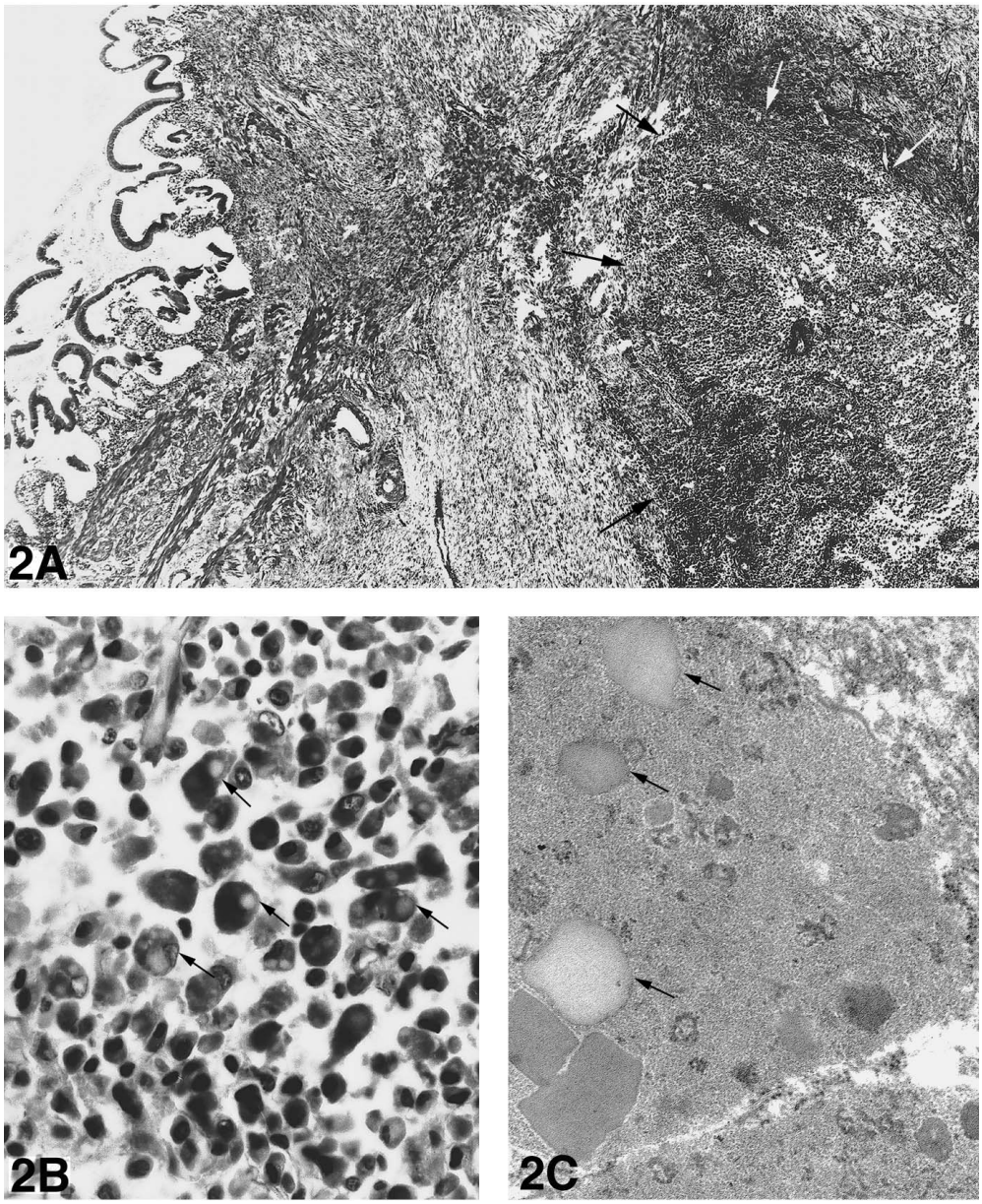

Fig. 2. Case 2. The histiocytic infiltrate in the wall is partly arranged in a nodular fashion (a). A HE stain showing the presence of the Michaelis-Gutmann bodies (b). An electron microscopic picture confirming the presence of the Michaelis-Gutmann bodies (c).

Samples from case 2 were also examined with a transmission electron microscopy (TEM). For TEM formaldehyde-fixed tissue was transferred to 2 % glutaraldehyde in 0.1M cacodylate buffer with 4% sucrose. (Effective osmolar pressure 300mOsm/l) The material was dehydrated in graded alcohols and embedded in Agar

100 resin. The sections were cut at 50–70nm, double stained with 5% uranyl acetate and 0.3% lead citrate, and examined in a Philips CM12 electron microscope.

CASE REPORTS

Case 1. A 64-year old man was referred for a cholecystectomy in the year 2003 at The University Hospital in Uppsala, Sweden because of an inflamed and thickened gallbladder. An open cholecystectomy was performed.

Macroscopically the gallbladder had a thickened wall with small nodules.

Case 2. A 40-year old woman was referred for cholecystectomy in the year 1993 at Soba University Hospital in Khartoum, Sudan because of repeated attacks of calcular cholecystitis. An open cholecystectomy was performed.

Macroscopically the gallbladder was reddened and thickened with yellowish nodular areas.

Case 3. A 37-year old woman was referred for cholecystectomy in the year 2004 at The University Hospital in Uppsala, Sweden because of an inflamed and thickened gallbladder which was removed laparoscopically.

Macroscopically the gallbladder had a thickened wall and a 1,5 cm stone in the collum area.

Microscopic examination of samples from all the cases showed chronic inflammation with a histiocytic infiltrate partly arranged in a nodular fashion (Fig.1c, 2a, 2b). In this histiocytic infiltrate the characteristic Michaelis-Gutmann bodies was found in the cytoplasm. These stained positively in the PAS stain in all cases (Fig. 1b, 3) and in case 1 a concentric assembly of calcified bodies was found (Fig. 1a). In case 2 their presence was also confirmed with an electron microscopic examination (Fig. 2c). A von Kossa's stain for calcium was performed for all cases but

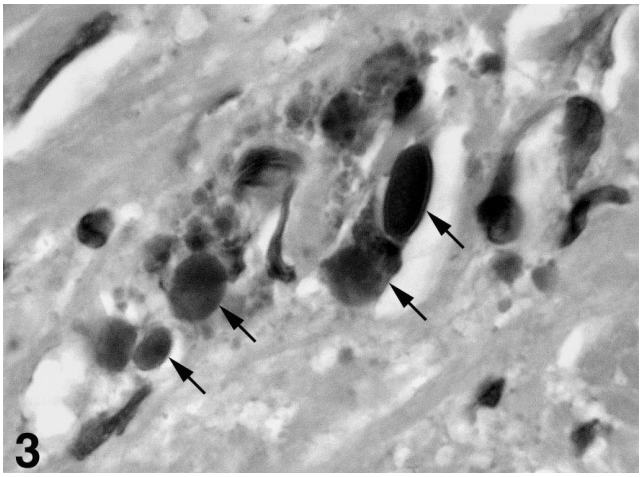

Fig. 3. Case 3. A positive PAS stain showing the Michaelis-Gutmann bodies.

unfortunately the staining wasn't reliable in case 2 and 3. Some histiocytes contained iron-pigments.

DISCUSSION

Malacoplakia of the gallbladder is a rare disease with only a handful of cases described [4, 5, 6, 7]. Characteristically the Michaelis-Gutmann bodies usually stain positively for periodic acid-Schiff stain, van Kossa's stain for calcium and iron [3, 7]. Clinically the appearance of the gallbladder might suggest a specific infection as tuberculosis, infestation of parasites e.g. leishmaniasis [8] (especially so in tropical regions) and a malign process. It is therefore of importance for surgeons and histopathologist to know that this entity does exist also in the gallbladder, in order to install proper treatment and to avoid unnecessary extensive surgery.

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