Melanosis of the bladder: a rare condition

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Introduction

Melanosis of the bladder is a very rare condition which can be mistaken for haemosiderosis, endometriosis in women, or primary or metastatic melanoma, unless confirmed histologically. This article reports a case of a 66-year-old man with melanosis of the bladder, seen at cystoscopy for non-visible haematuria. Given the lack of reported cases on melanosis of the bladder, a combination of the multidisciplinary team recommendations and the patient's wishes led to a follow-up plan of cystoscopic surveillance. This guidance was also informed by the concomitant suspected keratinising squamous metaplasia, which is potentially precancerous.

Discussion

Deposition of melanin within the bladder is a very rare condition with only a few cases reported in the literature. Melanosis can occur in several organs including the skin, colon and oral mucosa. The diagnosis of melanosis of the bladder is confirmed on histology with special staining with Melanin bleach to confirm the pigment is melanin (Stuhldreher et al, 2011). Melanosis of the bladder can be mistaken for haemosiderosis, endometriosis or metastatic melanoma, resulting in unnecessary investigations or treatment.

Case report

A 66-year-old Caucasian man, with a past medical history of hypertension and diet-controlled type 2 diabetes, was referred by his GP to the urology department with the passage of malodorous urine, bothersome storage lower urinary tract symptoms and non-visible haematuria. He was an ex-smoker.

He was started on an alpha blocker for the lower urinary tract symptoms as he had an enlarged, benign prostate on digital rectal exam. A non-contrast computed tomography kidney, ureter, bladder showed bilateral non-obstructive renal calculi. The initial flexible cystoscopy revealed poor views because of intravesical debris. Empirical antibiotics were administered. The urine was eventually negative for infection. He was given dietary advice for the renal calculi and yearly ultrasound surveillance organised. His lower urinary tract symptoms improved with alpha blockers and anticholinergics were not required.

A subsequent cystoscopy demonstrated multiple flat erythematous lesions with suspected keratinisation which were biopsied. The histology showed non-keratinising squamous metaplasia. While there was no mention of keratinisation in the histopathology report, the cystoscopic findings meant that this was a possibility. Owing to the potential risk of malignant transformation, a period of flexible cystoscopy surveillance on a 6-monthly basis was recommended.

Following a year of surveillance, cystoscopy demonstrated a very unusual appearance to the urothelium. Most of the bladder had a patchy dark pigmentation, the nature of which was unclear at cystoscopy and representative biopsies were taken (Figure 1). Biopsies from these areas demonstrated acute on chronic cystitis and bladder mucosa with granular brown pigmentation within the cytoplasm of the urothelial cells (Figure 2). Special staining with Melanin bleach confirmed this pigment to be melanin. Immunohistochemistry with Melan A confirmed the absence of melanocytes.

The patient's symptoms of malodorous urine resolved spontaneously. He denied any ongoing bothersome lower urinary tract symptoms. Given the paucity of literature available, a combination of the multidisciplinary team recommendations and the patient's wishes led to a follow-up plan of 6-monthly cystoscopic surveillance. This plan was also informed by the concomitant suspected keratinising squamous metaplasia, which is potentially precancerous.

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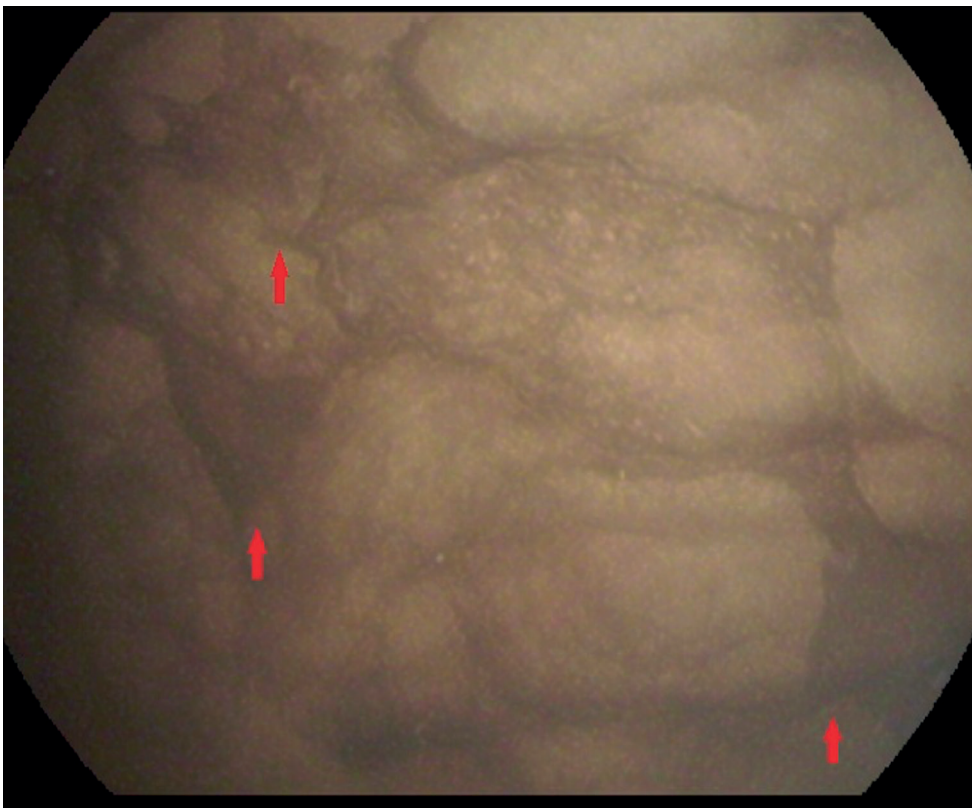

Figure 1. Flexible cystoscopy demonstrating patchy dark pigmentation within the bladder wall.

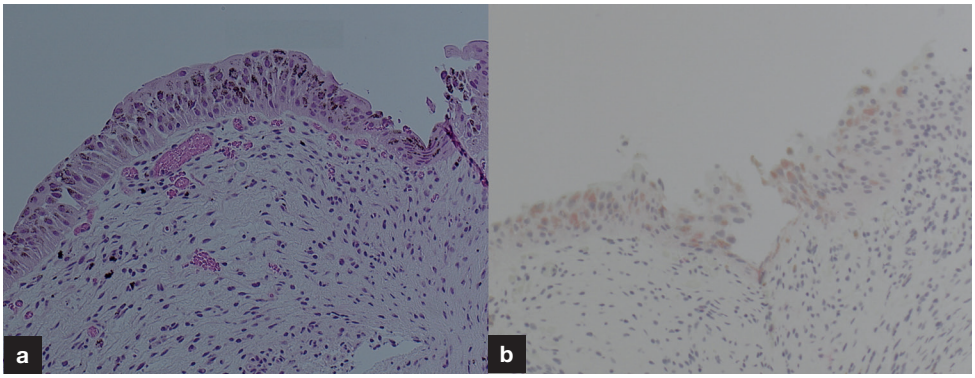

Figure 2. Bladder biopsy viewed under microscopy with magnification x20. a. Bladder mucosa with granular brown pigmentation within the cytoplasm of the urothelial cells. b. Special staining with Melanin bleach to confirm the pigment is melanin.

Melanosis of the bladder has been reported in the literature in patients ranging from 23–84 years of age with no gender bias. Clinical symptoms include incontinence, bladder outflow obstruction, abdominal pain and haematuria, and follow up in many cases (Sawalem et al, 2019) demonstrated spontaneous resolution.

There is little reported evidence to suggest malignant transformation in this condition. Engelhardt et al (2006) reported no malignant change in their patient after a 10-year period. There have been cases (Yau et al, 2017) of concurrent bladder melanosis and urothelial carcinoma. However, because of the lack of reported cases, it is unclear whether the conditions are related.

Melanosis of the bladder is considered an independently benign condition. There is little guidance in the literature on how to clinically manage this condition, specifically whether cystoscopic surveillance is required or whether there is a benefit to transurethral resection or ablation of these lesions. In light of this, the authors have chosen to continue cystoscopic surveillance of the bladder melanosis for this patient.

Learning points

- Melanosis of the bladder is a rare benign condition and many of the documented cases in the literature resolved spontaneously.
- Melanosis of the bladder can be mistaken for primary or metastatic melanoma. The correct diagnosis can be confirmed on histological examination which can avoid unnecessary treatment.
- Owing to the limited literature on malignant transformation, cystoscopic surveillance is a management option to consider following patient counselling.

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