Case Report

Bladder Melanosis: Two Clinical Cases and Review of the Literature

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Received: November 15, 2017; Accepted: December 24, 2017; Published: December 31, 2017

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Abstract

Bladder melanosis was first described in the last Century and it is a very rare diagnosis. It’s usually asymptomatic but anatomopathological studies are mandatory to rule out the presence of bladder melanoma. We here describe two cases of bladder melanosis in whom biopsies were performed in both cases revealing deposits of melanin confirming the diagnosis.

Keywords: Bladder melanosis, melanoma, cistoscopy

Introduction

Bladder melanosis is a rare lesion first described in 1986 by Alroy et al. [1]. Despite being a process listed as benign, it’s important to distinguish it from other entities as primary malignant melanoma of the bladder or metastatic melanoma.

Bladder melanosis occurs by excessive deposition of melanin in bladder mucosa. It is usually asymptomatic but there are described unspecific symptoms such as dysuria, nocturia, voiding dysfunction or recurrent cystitis. The suspected diagnosis is made by cystoscopy evidencing, typically, patched areas of brown-black coloured mucosa. Confirmation is obtained by bladder biopsy, which shows enhancement with Mason-Fontana or Schmorl dyes and discoloration with hydrogen peroxide [2]. There is no consensus about follow up. Even though being a rare benign entity, some authors recommend follow-up with cistoscopy.

Case Report

Case 1

The first case is of a 75-year-old male with a diagnosis of Parkinson’s disease and ischemic heart disease. In the context of follow-up of inferior urinary tract symptoms, a suggestive image of bladder neoplasm was detected in ultrasound, thus, a cistoscopy was scheduled. Cistoscopy showed the presence of bladder trabeculae and patched areas of black bladder mucosa. Bladder mucosa biopsies were performed.
Immunohistochemical techniques were applied (HMB-45, MART-1, S-100) which showed the presence of melanin and enhancement with Masson-Fontana dye, which confirmed the diagnosis of bladder melanosis.

**Case 2**

The second case is of a 75-year-old woman consulting for right renal colic. Tomography showed the presence of proximal right ureteral lithiasis of 17x11mm with periureteral and perirenal urine extravasation, so it was decided the placement of double J stent. During placement a unique black bladder mucosa area was evidenced and biopsy was performed. Immunohistochemical techniques (HMB-45 and Melan A (Figures 1 and 2) were performed demonstrating the presence of melanin and enhancement with Masson-Fontana and Perls dyes (Figure 3), which confirmed the diagnosis of bladder melanosis.

**Figure 1:** HMB-45 20x test showing melanin deposits

**Figure 2:** Melan A test 20x showing melanin deposits
Both cases have been followed in an outpatient manner with cytology and ultrasound on a yearly basis without having found no pathology in the follow-up.

![Image: Perls test 20x](image.png)

**Figure 3:** Perls test 20x

**Discussion**

Bladder melanosis is a very rare entity, in fact roughly twenty cases have been published in the literature [2]. There is controversy about the origin of this pigmentation due to the absence because of melanocytes in the urothelium. There are two theories to explain the source of this pigment into the bladder, first an abnormal migration of melanocytes from the neural crest during embryogenesis or second, the aberrant differentiation of pluripotent stem cells of the urothelium.

Differential diagnosis, mainly with bladder melanoma, include biopsy of the bladder mucosa as a mandatory procedure. Immunohistochemical studies can be employed to confirm the presence of the melanin pigment, such as HMB-45, MART-1, S-100 or Melan A, being the first one the more specific [3]. Mason-Fontana, Perls or Schmorl tests are also described. Hematoxylin-eosin test is not useful in this scenario. These dyes will allow to differentiate melanosis bladder from the bladder melanoma, which précises of the presence of atypical melanocytes [4]. Rule out the presence of melanoma is of paramount importance since bladder melanoma is commonly associated with metastasis [5]. On the other hand, bladder also can be affected by metastatic lesions of distant melanoma [6].

Regarding follow-up there are no guidelines, due probably to the rarity of this entity. An association of bladder melanosis with the presence of transitional bladder urothelial tumor [2,4] has been observed in at least three cases, that’s why some authors consider necessary the follow-up these patients. Yau et al. [7] suggest that it can’t be determined whether melanosis is a premalignant lesion or not, thus, many authors don’t agree in surveillance via cystoscopies and biopsies. In asymptomatic patients without risk factors, probably a study with cytology and ultrasound is enough including cistoscopic evaluation just in case bladder cancer is suspected.

**Conclusion**

Bladder melanosis is a rare entity. It is usually asymptomatic, and it is founded in cistoscopy in the context of study of some other pathologies. Bladder biopsy is mandatory to distinguish it from other malignant entities such
as bladder melanoma or bladder cancer. No treatment is needed but follow up is recommended since some cases have been associated with bladder cancer development.

References