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Blue Nevus of the Prostate in Needle Biopsy Specimen

Kostas Chondros[1*], Stavros-Emmanouil Tzoulakis[2], Georgios Georgiou[3], Linda Giannikaki[3], Ploutarhos Anezinis[2]
[1]Department of Urology, University General Hospital of Heraklion, Heraklion, Crete, Greece
[2]Department of Urology, General Hospital of Heraklion "Venizeleio-Pananeio", Heraklion, Crete, Greece
[3]Department of Pathology, General Hospital of Heraklion "Venizeleio-Pananeio", Heraklion, Crete, Greece

***Corresponding Author:**
Name: Kostas Chondros
Email: hondrosk@gmail.com

Abstract: Prostate gland is an unusual location for melanocytic lesions such as blue nevus. Typically, all three different types of melanchromatic lesions in the prostate, blue nevus, melanosis and malignant melanoma, are very rare and must be differentially diagnosed. These lesions are incidental findings in prostatic tissue biopsies and have a potential correlation with prostate adenocarcinoma. Blue nevus itself is a benign lesion and there is no need for further treatment. We present a case of a 69-year-old male who underwent needle biopsy procedure for prostate cancer investigation. On histological examination together with prostatic hyperplasia, the presence of a blue nevus, as incidental finding was diagnosed.
Keywords: Blue nevus, Prostate needle biopsy, Melanosis

INTRODUCTION

Blue Nevus is a benign melanocytic lesion and skin is its most frequent location. It is composed of elongated bipolar melanocytes with intracytoplasmic brown melanin pigment. Extracutaneous melanocytic lesions are rather rare. They have been reported in organs such as mouth, vagina, cervix, iris and brain. Blue nevus and other melanin pigmented lesions can rarely occur in the uro-genital tract in two locations: spermatic cord and prostate.

Blue Nevus of the prostate is an extremely infrequent histopathologic incidental finding without any significant clinical symptoms or importance. Other melanotic lesions of the prostate such as melanosis and malignant melanoma must be differentially diagnosed from blue nevus because of their different clinical behavior (especially that of melanoma) and different treatment strategy. In worldwide literature, only 34 cases reported the presence of blue nevus in prostate tissue from prostatectomies, autopsies, transurethral resectomies and needle biopsies (table-1). The first report was back in 1963 from Nigogosyan et al, with an autopsy from a 50-year-old male [1]. Only 2 cases relate to blue nevus detection after prostate needle biopsies.

CASE PEPORT

Our patient is a 69-year-old male with a history of arterial hypertension and BPH in the last 5 years treated with alfozocin. The patient claimed that he had already done a previous prostate biopsy with normal findings 3 years ago, but with no further documentation. He came up complaining for LUTS despite the medical treatment. His IPSS score was 10 and the digital rectal examination detected a significant enlargement of the prostate but with no stiffness or asymmetry. The suprapubic ultrasound reported a prostate size of 100cm^3 with transition zone enlargement, normal bladder wall and a post void residual of 90mL. The Uroflow examination was indicative of lower urinary track obstruction. The cystoscopy showed multiple urethral stenosis and thickened bladder wall.

The PSA level was 10.5ng/dl. Despite that the PSA density was low (0.105), and the lack of previous PSA values, he underwent a needle biopsy procedure for cancer exclusion. There were 6 tissue samples taken for each prostate lobe sized 1.1cm up to 2cm. Tissue specimens were processed according to routine histological techniques. Microscopic examination of the HE-stained slides showed benign prostate hyperplasia with chronic inflammation. In addition, in two locations small aggregations of bipolar dendritic cells having brown intracytoplasmic pigment (Fig. 1 a+ b) and singly arranged were identified. They showed no cytologic atypia or mitosis. The brown pigment proved to be melanin with the Masson-Fontana stain, while absence of Perl's stain denied iron storage (Fig 1 c). Also, the dendritic cells were positive for the immunohistochemical stains S-100 (Fig 1 d), Melan-A and HMB45, and negative for CD 68, confirming their

melanocytic nature. In conclusion the diagnosis of prostate blue nevus was made.

Table 1: Previous case reports of Prostate Blue Nevus

Source	Year	Procedure	Age/s	Symptoms
1.Nigogosyan *et al.*[1]	1963	Autopsy	50	M.Myeloma
2.Guillan and Zelman [5]	1970	Autopsy	2cases	NA
3.Gardner and Spitz [6]	1971	Autopsy	20	NA
4.Jao *et al.*[7]	1971	Prostatectomy	76	NA
5.Block *et al.*[8]	1972	Prostatectomy	66	NA
6.Langley and Weitzner [9]	1974	NA	6cases	NA
7.Tannenbaum M. [10]	1974	NA	NA	NA
8.Rios and Wright [11]	1976	Autopsy	67	NA
9.Kovi *et al.*[12]	1977	TURP	65	NA
10.Scarani and Lorenzini [13]	1979	NA	NA	NA
11.Ro *et al.*[14]	1988	TURP	68,76	Urinary obstruction
12.Botticelli *et al.*[15]	1989	Prostatectomy	69,70,66	NA
13.Lew *et al.*[16]	1991	Prostatectomy	80	NA
14.Martinez Marinez *et al.* [17]	1992	Prostatectomy	81,69	Urinary obstruction
15.Nogueras Gimeno *et al.* [18]	1993	NA	NA	NA
16.Vesga Molina *et al.*[19]	1995	NA	NA	NA
17.Redondo *et al.* [20]	1998	TURP	58	NA
18.Cuervo Pinna *et al.*[21]	2001	Prostatectomy	71	NA
19.Di Nuovo *et al.* [22]	2002	Needle biopsy	66	NA
20.Humphrey [23]	2003	Needle biopsy	70	NA
21.Anderco *et al.* [24]	2010	TURP	69	Asymptomatic
22.Marti-Mestre J *et al.* [25]	2010	TURP	68	Urinary retention
23.Raspollini *et al.* [26]	2011	Prostatectomy	64	NA
24.Kudva and Hegde [27]	2011	TURP	53	Dysuria
25.Montalvo and Redrobán [28]	2013	Prostatectomy	63	Prostatism
26.Present Case	2014	Needle Biopsy	69	BPH

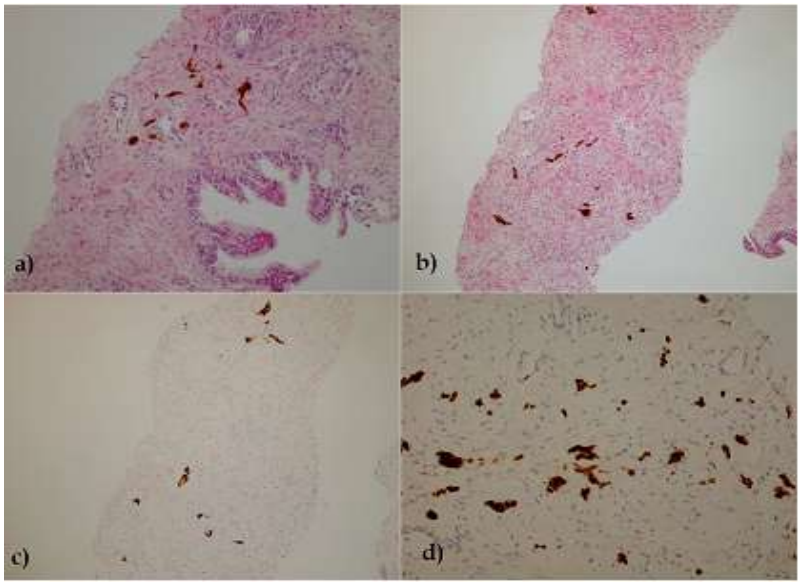

Fig. 1: a) + b) bipolar dendritic cells with brown pigment in prostatic stroma. (H&A, X200) c) The dendritic cells are negative with Pearl's stain d) Dendritic cells are positive in S100 immunohistochemical stain.

DISCUSSION

Intracytoplasmic brown pigment in prostatic tissue could be due to the presence of melanin, hemosidirin or lipofuscin. Lipofuscin can be stored in histologically normal looking, hyperplastic or neoplastic prostatic tissue, in both stromal and epithelial compartments. Iron deposits occur in areas with previous hemorrhage or in hemochromatosis. Perls' histochemical stain highlights its presence. The presence of melanin in prostate is seen in melanosis, blue nevus or melanoma [2].

Blue nevus of the prostate is categorized in melanocytic pigmented lesions, consisting of dendritic melanocytes singly arranged in the stroma. The origin of these melanocytes is still controversial. They may be derived from precursor cells, melanoblasts, which did not complete their migration from the neural crest to the epidermis during embryogenesis [3]. Others suggest that they are transformed Schwann cells, at least partly explaining the development of cases of non-cutaneous melanoma [4].

Melanosis is referred to the presence of melanin into prostate stromal cells and/or into epithelial cells. On the contrary, in the case of blue nevus, pigmented melanocytic cells with long dendritic projections are scattered on the stroma of the prostatic tissue. Rarely these two cases may coexist, and the differential diagnosis is more difficult but it has no actually clinical importance. The most important, is the distinction of these benign lesions from malignant melanoma. Malignant melanoma is characterized by the presence of atypical melanocytes with mitotic figures and potential necrosis. Its recognition is much of importance because the furtherer treatment of these patients is recommended to be more aggressive: radical surgical removal of the prostate plus lymph node dissection with or/without adjuvant chemotherapy. In cases of melanosis and blue nevus no further treatment is needed.

There is no specific clinical presentation of these lesions and there is no causal relationship with high PSA serum levels. In all cases, melanotic lesions are detected in biopsy material after surgical tissue removal, either by prostatectomies or needle biopsies. In worldwide literature no reports relate prostate blue nevus with other dermatological conditions or specific pathologies. Finally, according to the current data the mean age of occurrence is 68 years.

CONCLUSION

Blue nevus represents an extremely rare benign lesion that doesn't require any further treatment. Nevertheless, it is critical to be differentially diagnosed from other melanotic lesions, and especially from malignant melanoma.

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