Prostate melanosis associated with acinar adenocarcinoma

Prostate melanosis is an uncommon lesion of uncertain etiology where melanin deposition is seen in the epithelium, in stroma or in the form of a blue nevus. There are three reports in the literature of association between melanosis and prostatic adenocarcinoma. This is the fourth report of this association.

Palabras clave: prostate melanosis; acinar adenocarcinoma

INTRODUCCIÓN

The prostate contains two different types of pigments: lipofuscin and melanin. Lipofuscin is found in the benign prostate epithelium (1), as well as in advanced intraepithelial prostatic neoplasias (2,3) and prostatic adenocarcinomas (4,5). Melanin is rarely found, except for melanocytic lesions such as the blue nevus, melanosis and malign melanomas. Prostatic melanosis is an extremely rare event with only 20 cases reported so far. Here we present a case where the melanic pigment was found in the stroma, the normal epithelium and associated to the neoplastic epithelium of the prostatic acinar adenocarcinoma.

DESCRIPTOR DEL CASO CLÍNICO

Patient A.S., caucasian, 85 y.o. PSA = 79 ng/ml (values up to 10 ng/ml are considered normal). The patient was submitted to transurethral resection of the prostate (yielding several fragments adding up to 7.0 g) and bilateral orchiectomy. Both testicles were received for anatomopathological analysis unmarked for side. The largest one measured 3.5x3.0 cm and weighed 11 g and the smallest measured 3.0x2.8 cm and weighed 10 g.

Microscopic analysis showed infiltrative glandular lesion with acinar fusion (Gleason pattern 7 = 4+3). Moreover, dark granules were observed in fibromuscular cells of the stroma of both the prostatic epithelium and neoplastic acini. The granules were negative for the iron-Prussian blue reaction and positive for the Fontana-Masson staining, indicating a melanic nature. These melanin-containing stroma cells are long with smooth edges. The testicles presented no noticeable feature and both showed normal spermatogenesis.

Immunohistochemistry analysis using an anti-PSA monoclonal antibody (Dako. Clone ER-PR8. 5/300 dilution) positively stained the usual stroma and epithelial neoplastic cells.

RESULTADOS

Benign melanocytic proliferations are a rare event and their association with adenocarcinoma is even more so. The origin of the melanocytes found in the prostate is uncertain, though it probably results from a joint migration with the mesoderm. The presence of melanin in the epithelium probably depends on the transmission from stromal melanocytes and although rare, malignization of the stromal component should be discarded.

DISCUSIÓN

Only two different types of benign melanocytic proliferation have been described in the prostate so far. The first one is the blue nevus, in which melanin is found exclusively in the stroma of the affected tissue. The other is known as melanosis and, as described here, shows melanin both in the prostatic stroma and epithelium. So far, only 20 reports melanosis have been made in the li-
terature since 1963, including the ones by Nogogosyan et al.(6). Three of these 20 cases were associated with adenocarcinoma.

The origin of ectopic melanocytes is controversial. Reais et al. postulated that melanoblasts originate from the neural crest, migrating along with the mesoderm and, under the appropriate conditions, mature into melanocytes in the connective tissue (7). Nakkey and Rapaport suggested the possibility of Schwann and endoneural cells transforming into melanocytes (8). Indeed, some non-cutaneous cases of melanoma in ovaries, gall bladder, adrenal glands, parotids, esophagus and vagina have been reported.

There are a few theories speculating on the reason for the existence of melanin in the normal or neoplastic prostatic epithelium. In all reported cases of melanosis associated with carcinoma (including the one reported here), melanin was present in the neoplastic epithelium and only one case (described in 1989 by Furusato et al. (9) did not show melanin in the unaffected epithelium.

In 1970, Giulian et al. (1) investigated 330 prostates and later, in the following decade, Langley et al. (10) investigated another 150 prostates showing 13 and 2 cases respectively where stroma cells contained melanin. In all these 15 cases, the melanin-containing stroma cells were adjacent to epithelial cells that also contained melanin. This lead the authors to suggest that the pigment was transferred from epithelial to stroma cells. Further electron microscopy studies showed that stroma melanocytes presented ultrastructural characteristics of early stage melanosomes, unlike those of the epithelium, thus corroborating the transfer theory. Only one case, reported in 1967 by Goldman et al. (11) showed melanocytes exclusively in the prostatic epithelium, indicating that such epithelium might be able to produce melanin.

Supposing that melanin is transmitted to the normal epithelium, it might as well be also transmitted to the neoplastic epithelium, specially because it coexists with melanocytes in the stroma. Seman et al. investigated 14 prostates, of which 8 presented carcinomas that showed neither melanin nor melanocytes in the adjacent stroma, thus not invalidating the hypothesis of transmission.

It is not yet possible to determine whether melanosis or the blue nevus of the prostate are a cause of carcinoma. It is also uncertain whether a melanocytic proliferation can become malign. In the case of common blue nevi, no malignization has been reported (12), even though one case of primary prostatic melanoma originating from a cellular blue nevus has been reported (13). It is thus necessary to discard the possibility of a melanoma when a benign proliferation is found.

REFERENCIAS

ICONOGRAFÍA

Figura 1.-