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UROLOGY - LETTER TO THE EDITOR

Florid mesothelial hyperplasia of the tunica vaginalis: report of two cases with immunohistochemical findings

Daniel Abensur Athanazio[1,2] · Andrea de Oliveira Cruz[1] · Luiza Oliveira Barbosa[1] · Isabela Soares Pimenta[1] · Nathanael Pinheiro de Freitas Jr.[1]

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Editor,

Mirroring reactive lesions in other surface membranes, mesothelial hyperplasia of the tunica vaginalis may be so florid that it can mimic malignant mesothelioma or adenocarcinoma. In the largest series reported to date ($n = 12$), by Epstein et al. [1], 75% of all cases are associated with hydrocele and 1 case (8%) with hematocele. Before that series, mesothelial hyperplasia of tunica vaginalis was thought to be associated more commonly with hernial sacs, while malignant mesothelioma would be more associated with hydrocele sacs [2]. Awareness of that florid reactive condition is important, since true malignant mesothelioma of tunica vaginalis is a rare tumor—0.3% to 5% of all malignant mesotheliomas, with about 100 cases reported so far [2].

Case 1: a 41-year-old patient who had a long-term history of hydrocele. At intraoperative inspection, a focal thickening of tunica vaginalis was noted (Fig. 1). Case 2: a 72-year-old patient sought medical attention due to progressive swelling of the scrotum with clinical suspicion of hydrocele. At intraoperative inspection, the cavity showed abundant hemorrhagic content; the testis was atrophic and there was thickening of tunica vaginalis (Fig. 2). In both cases at microscopy, the tunica vaginalis showed fibrous organization and chronic inflammation. Small epithelial structures with nest or tubular morphology were observed entrapped within fibrous tissue—widely spaced and horizontally orientated. The epithelial density is always low. The epithelial cells showed vesicular nuclei and small nucleoli. Mitoses were not seen. Mesothelial differentiation was confirmed by expression of cytokeratin 5/6, calretinin and WT1. In Case 2, an additional panel excluded the expression of carcinoembryonic antigen, prostate (PSA) and germinative cell markers (OCT3/4, alpha-fetoprotein and Glypican-3). The benign nature of the lesions was corroborated by the expression of desmin, weak and focal expression of EMA and a weak expression (non-mutated pattern) of P53 (Figs. 1, 2).

The spectrum of reactive and neoplastic changes of mesothelial proliferations is broad in pleural, peritoneal and pericardial surfaces. In these settings, the differential diagnosis between reactive mesothelial proliferations and malignant mesothelioma or carcinoma may be difficult. Mesothelial hyperplasia of the tunica vaginalis is an underrecognized lesion that may impose similar diagnostic difficulties. In the largest series to date, Epstein et al. described 12 cases in consultation cases. Morphologic characterization of these lesions includes: small tubules with non-branching morphology entrapped in fibrous tissue—widely spaced and horizontally oriented. Glands appear in low density and no mitoses are seen. No immunohistochemistry study was carried out [1].

In other serous membranes, the most useful tool to assist morphology in the discrimination of benign and malignant mesothelial lesions is the use of a immunohistochemical panel of desmin, EMA and P53, whereas lack of desmin expression, strong and diffuse positivity for EMA and mutated pattern of P53 expression may support the diagnosis of malignancy [3–6]. In the cases presented herein, the immunophenotype was supportive of benign florid mesothelial proliferation (Figs. 1, 2).

✉ Daniel Abensur Athanazio
daa@ufba.br

[1] Imagepat Laboratory, Rua Lucaia, 209-Edf. Eventus Empresarial, Rio Vermelho, Salvador 41940-660, Brazil

[2] Departamento de Patologia e Medicina Legal, Faculdade de Medicina da Bahia, Universidade Federal da Bahia, Praça XV de novembro, s/n-Largo do Terreiro de Jesus, Salvador, BA 40025010, Brazil

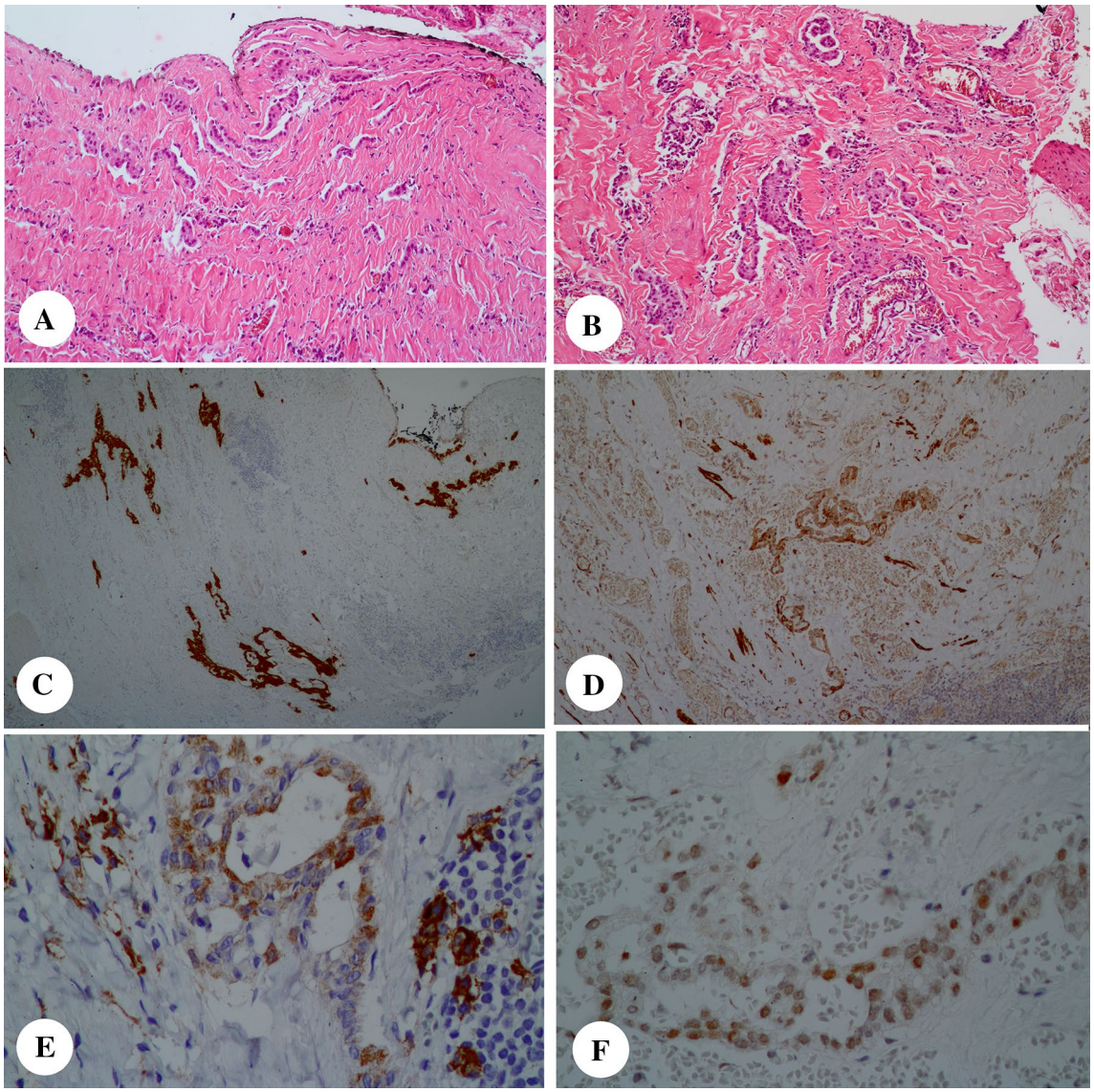

Fig. 1 Case 1. 41-year-old patient with long-term hydrocele. **a**, **b** Florid epithelial proliferation in thick fibrous tissue (×40 and ×100, HE). Immunohistochemistry findings: **c** calretinin (×100). **d** Desmin (×100). **e** EMA (×400) and **f** P53 (×400)

In conclusion, the morphologic picture of entrapped groups of mesothelial cells deep in fibrous tissue may cause diagnostic difficulty. Awareness of the existence of florid cases of mesothelial hyperplasia in tunica vaginalis is important to avoid a misdiagnosis of malignant mesothelioma or adenocarcinoma. This report adds immunophenotypical findings to the essentially morphological description by Epstein and colleagues. They corroborate the benign nature of these lesions, based on their known diagnostic value in similar lesions from other serous surfaces.

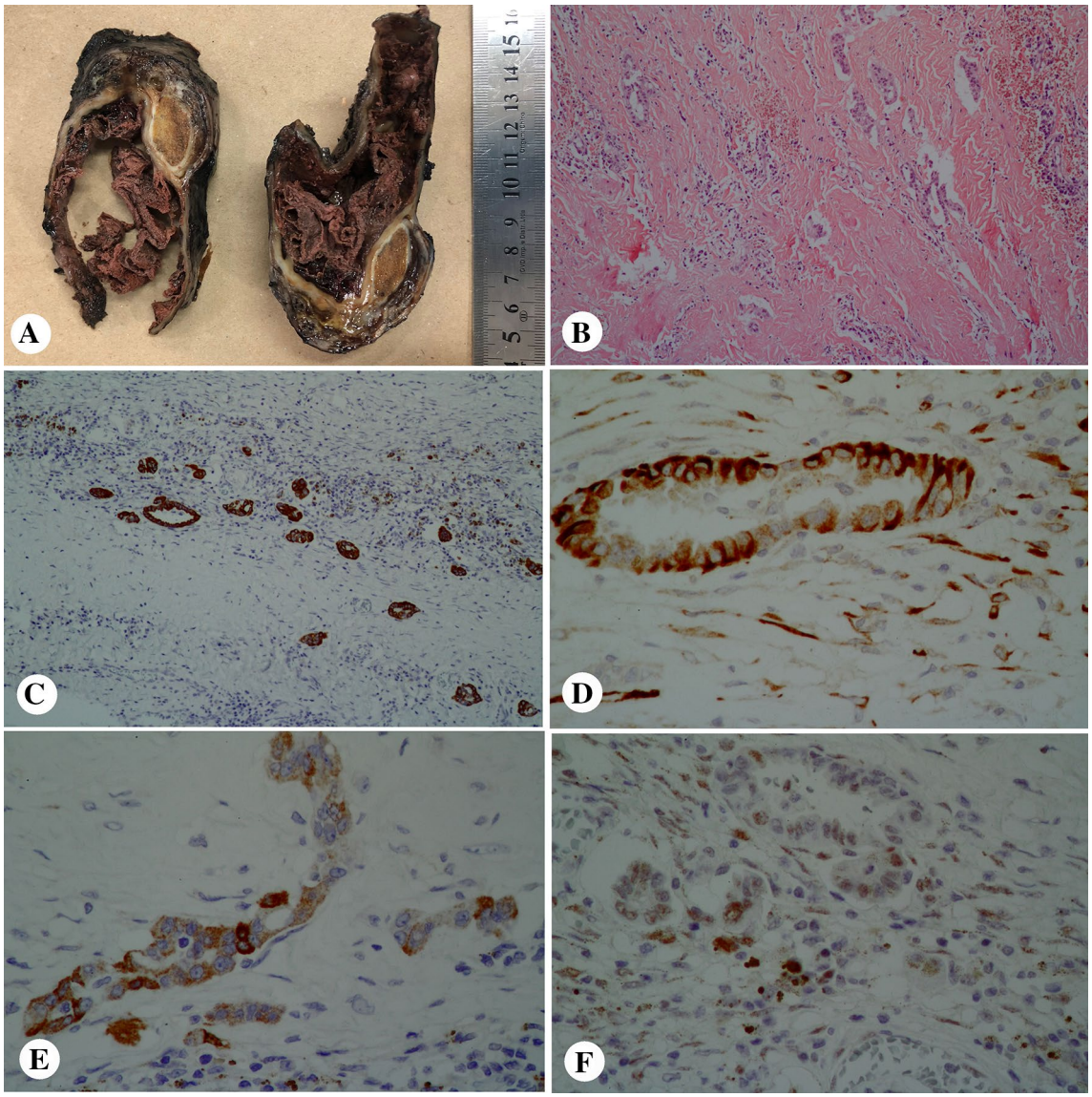

Fig. 2 Case 2. 72-year-old patient with hematocele. **a** Gross appearance with hemorrhagic content in cavity, thick fibrous tunica vaginalis and atrophic testis. **b** Epithelial proliferation in thick fibrous tissue (×100). Immunohistochemistry findings: **c** cytokeratin 5/6 (×100). **d** Desmin (×400). **e** EMA (×400) and **f** P53 (×400)

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

1. Lee S, Illei PB, Han JS, Epstein JI (2014) Florid mesothelial hyperplasia of the tunica vaginalis mimicking malignant mesothelioma: a clinicopathologic study of 12 cases. Am J Surg Pathol 38(1):54–59
2. Chekol SS, Sun CC (2012) Malignant mesothelioma of the tunica vaginalis; diagnostic studies and differential diagnoses. Arch Pathol Lab Med 136:113–117
3. Churg A, Colby TV, Cagle P et al (2000) The separation of benign and malignant mesothelial proliferations. Am J Surg Pathol 24:1183–1200
4. Attanoos RL, Griffin A, Gibbs AR (2003) The use of immunohistochemistry in distinguishing reactive from neoplastic mesothelium. A novel use for desmin and comparative evaluation with epithelial membrane antigen, p53, platelet-derived growth factor-receptor, P-glycoprotein and Bcl-2. Histopathology 43:231–238
5. King JE, Thatcher N, Pickering CA, Hasleton PS (2006) Sensitivity and specificity of immunohistochemical markers used in the diagnosis of epithelioid mesothelioma: a detailed systematic analysis using published data. Histopathology 48(3):223–232
6. Addis B, Roche H (2009) Problems in mesothelioma diagnosis. Histopathology 54(1):55–68