Human Pathology (2010) **41**, 88–93

ELSEVIER

Human PATHOLOGY

www.elsevier.com/locate/humpath

Original contribution

Small blue cells mimicking small cell carcinoma in spermatocele and hydrocele specimens: a report of 5 cases

ZhaoLi Lane MD[a], Jonathan I. Epstein MD[a,b,c,*]

[a]*Department of Pathology, The Johns Hopkins Hospital, Baltimore, MD 21231, USA*
[b]*Department of Urology, The Johns Hopkins Hospital, Baltimore, MD 21231, USA*
[c]*Department of Oncology, The Johns Hopkins Hospital, Baltimore, MD 21231, USA*

Received 28 May 2009; revised 29 June 2009; accepted 30 June 2009

Keywords:
Hydrocele;
Spermatocele;
Small cell carcinoma

Summary We identified 5 cases of hydrocele and spermatocele resections containing detached small cellular "blue" clusters, raising questions of small cell carcinoma by contributors to our consult service. Patients were 37, 39, 52, 67, and 70 years old. None of the 4 patients with follow-up developed small cell carcinoma. On routine stained sections, there were multiple clusters of detached hypercellular cells with focal streaming, high nuclear-to-cytoplasmic ratios, and hyperchromatic nuclei without prominent nuclei. There were no mitotic figures, apoptotic bodies, or necrosis. In 4 of 5 cases, there was sufficient tissue to perform immunohistochemistry along with 10 cases each of normal rete testis and epididymis. CD56 was positive in 4 of 4 cases of the "blue cells" and in 9 of 10 of normal rete testis; yet, it was positive in only 2 of 10 normal epididymis. Synaptophysin and chromogranin were negative in all cases of "blue cells." PAX2 was negative in all cases of "blue cells" similar to the 1 of 9 positive staining in rete testis and in contrast to the positivity seen in 9 of 9 cases of normal epididymis. Ki-67 was negative or showed only rare positive cells in all of the cases of the "blue cells." Clusters of blue cells suggestive of sloughed rete testis cells can mimic small cell carcinoma in hydrocele and spermatocele specimens based on their low power appearance and positive CD56 staining. Closer examination of the cells' bland morphology, low expression of Ki-67, and lack of chromogranin and synaptophysin, along with recognition of this entity, can prevent a misdiagnosis of malignancy.

1. Introduction

For an 8-year period, we have received a group of identical cases consisting of clusters of hyperchromatic cells in hydrocele and spermatocele specimens. These "blue cells" showed some morphological and immunophenotypic features, which led contributing pathologists to consider the diagnosis of small cell carcinoma. The current study describes the clinical and pathologic features of this benign mimicker of small cell carcinoma.

2. Materials and methods

We identified 5 cases of hydrocele and spermatocele resections containing multiple detached small cellular blue clusters, which raised questions of small cell carcinoma by contributors. Cases were sent to our consult service from February 2002 to March 2009. Each case that had available

* Corresponding author.
E-mail address: jepstein@jhmi.edu (J. I. Epstein).

0046-8177/$ – see front matter © 2010 Elsevier Inc. All rights reserved.
doi:10.1016/j.humpath.2009.06.018

tissue was also evaluated immunohistochemically. Labeling was performed for calretinin (Ventana, Tucson, AZ, CK5/6 (Ventana), CK7 (Dako USA, Carpinteria, CA), CK20 (Ventana), synaptophysin (Ventana), chromogranin (Ventana), Ki-67 (Ventana), CD56 (Ventana), and Pax2 (Zymed, San Francisco, CA). All of the antibodies, with the exception of PAX2, were

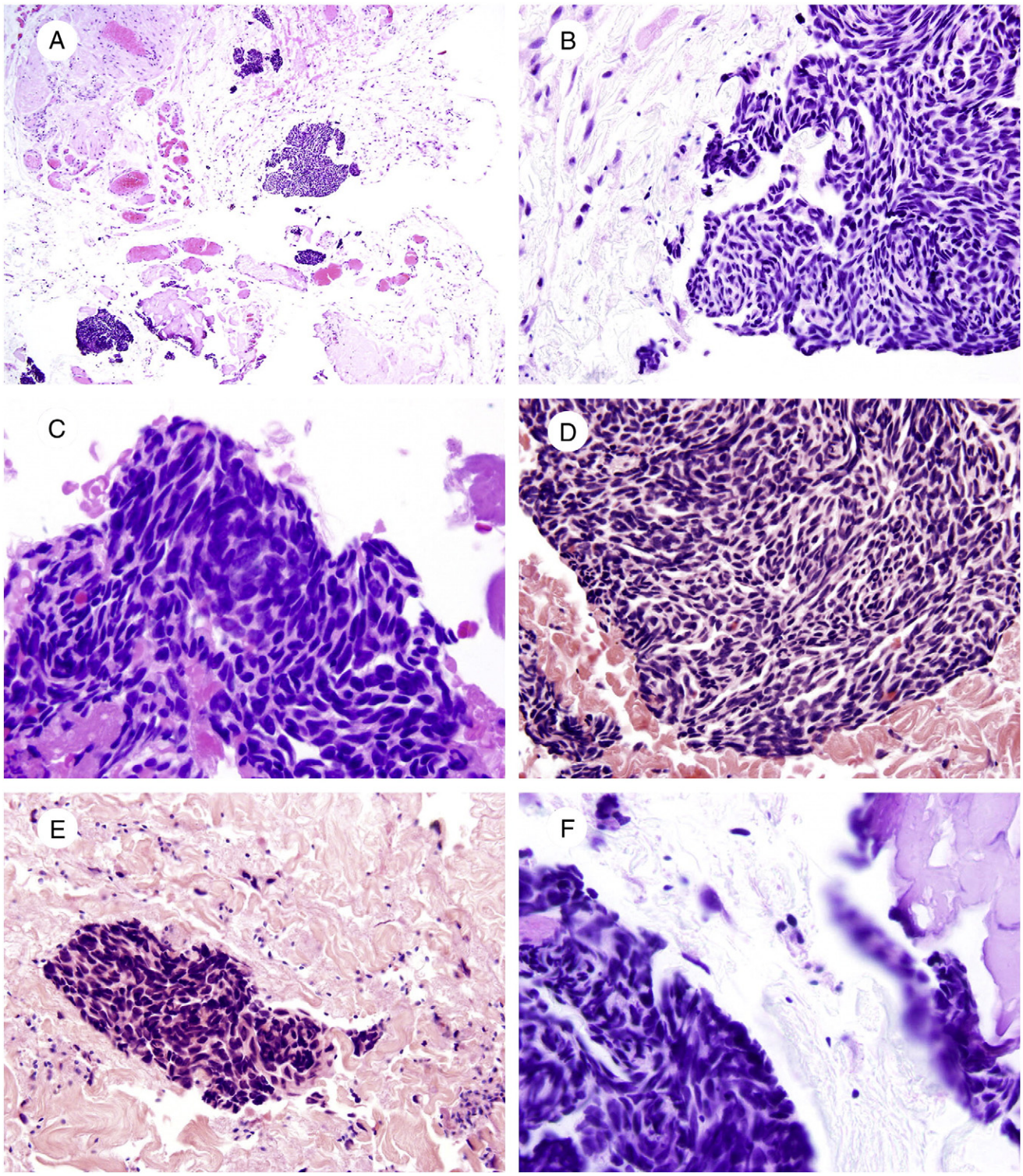

Fig. 1 A, Low magnification of hydrocele with scattered clusters of blue cells. B, Cellular clusters of blue cells with high nuclear-to-cytoplasmic ratios and slight spindling of cells. Note adjacent scattered spermatozoa. C, High magnification show bland nuclei without nucleoli. Cells lack mitotic figures or apoptotic bodies. The nuclei are closely related to each other within areas of the appearance of "molding." D, Cluster of blue cells seen in a spermatocele specimen. E, Spermatocele specimen with numerous spermatozoa associated with the blue cells. F, Rare spermatozoa associated with cluster of blue cells in a hydrocele specimen.