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UROLOGICAL ONCOLOGY

Precise pathological assessment plays a key role in proper patient management in nonseminoma germ cells tumor

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Approximately 30% of stage I nonseminomatous germ cell tumors will have retroperitoneal relapse. The rate for stage I seminomas is 15–20% [1]. Lymphovascular invasion (LVI) in Stage I germ cell tumors is one of the most important risk factors for relapse. Others include histologic type of germ cell tumor and – in mixed tumors – relative proportion of tumor components, especially percentage of embryonal carcinoma. It is worth emphasizing that particular tumor subtypes are inherently associated with LVI – choriocarcinoma being a primary example. However, LVI does not represent a significant risk factor for retroperitoneal relapse in Stage I seminoma cases with literature emphasizing the importance of tumor diameter >4 cm and rete testis invasion [2].

Awareness of factors increasing this risk is necessary for appropriate patient approach. Management of clinical stage I testicular tumor is still a matter of debate and is dependent on many factors as well as institutional preferences. Surveillance, adjuvant chemotherapy or radiotherapy, and retroperitoneal lymph node resection are options depending on tumor histology [3]. Risk–adapted treatment is based on the presence or absence of risk factors. Literature data, especially referring to non–seminoma, report risk–adapted treatment to be equally effective compared with other recognized treatment methods [4]. This is also accepted in seminomas [5].

Yossepowitch et al analyzed 145 patients with testicular germ cell tumors who had undergone radical orchiectomy [6]. Lymphovascular invasion was detected in 38 (26%) men and was significantly correlated with younger age, testicular pain at presentation, elevated pre–orchiectomy serum tumor markers, nonseminoma histology, and advanced clinical stage. In their cohort of men with clinical stage I tumors, testicular pain had a 1.8X–higher likelihood of LVI than those without orchalgia ($p = 0.02$), and patients with elevated serum tumor markers had an 8.5–fold increased probability of LVI in comparison with those with normal tumor marker levels ($p = 0.05$). Furthermore in the group of men with nonseminoma histology, the presence of elevated tumor markers at presentation was a strong predictor of LVI on both univariate and multivariate analyses ($p = 0.03$), controlled for age, pain at presentation, and clinical stage. The relationship between tumor marker levels and LVI has not been extensively studied so far.

Authors used widely accepted diagnostic criteria for assessment of LVI. However it is worth emphasizing that in many cases this can be problematic, mostly due to tissue crushing or retraction artifact. Diagnosing LVI in routine H&E (hematoxilin and eosin) sections only can be difficult and the pathologist may seek the assistance of immunohistochemical stains for endothelial markers to validate their observation.

Germ cell tumors are aggressive but potentially curable malignancies. Thus, correct diagnosis and comprehensive tumor characteristics enable proper clinical management and treatment. Accounting for appropriate prognostic factors in a particular case is crucial for patients' prognoses. LVI appears to be such an important factor in germ cell tumors. It is one of the basic elements of a histopathology report of any testicular tumor. However, it is not a usual practice to examine extra sections or deeper levels of paraffin blocks in search of tumor emboli or LVI. Clinical information on factors potentially associated with LVI might initiate such practice among pathologists. Authors suggest that providing pathologists with information on preorchiectomy tumor marker levels and, possibly, testicular pain at presentation may alert them to the likelihood of finding LVI in a testicular tumor specimen. In view of available literature these results are particularly important for non–seminomas, as LVI is a signifi-

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cant risk factor for relapse in these tumors. We are still in need of further studies concerning seminoma cases, where no such correlation has been identified.

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