Lymphovascular invasion (Required and Recommended)

Reason/Evidentiary Support

In several studies, the presence of vascular space has been correlated with a significantly elevated risk for distant metastasis, particularly in non-seminomatous germ cell tumours (NSGCTs). Some clinicians manage the patients with clinical stage I disease that lack evidence of lymphatic or vascular invasion in their orchidectomy specimens by surveillance.

Most of the previous studies on lymphovascular invasion (LVI) appear not to use immunochemistry routinely in its diagnosis. Although one recent paper suggests that the routine use of immunochemistry to identify LVI may be helpful, further studies are needed and at present we recommend that diagnosis should be made on H&E backed up by immunochemistry for lymphovascular vessels in challenging cases.[1]

We recommend that vascular invasion be called either present or 'not identified' as equivocation in the report is unhelpful to the clinician. We advise restricting the definition of vascular invasion so that those cases which are equivocal are assigned as 'not identified'. Vascular invasion is much more likely to be seen at the periphery of the tumour than within the centre of solid tumour masses. It is often seen in fibrous bands surrounding or intersecting the main tumour mass, as well as in the region of rete testis. LVI may be seen in the tunica albuginea, spermatic cord vessels or the parenchyma of the testis. All warrant a stage of pT2.

In seminoma, although vascular invasion is a statistically significant factor for predicting for relapse in occasional small historical cohort studies,[2] it has not proved independently statistically significant in stage I seminoma in large cohort pooled studies;[3,4] however, it was found significant in a recent cohort of 1954 patients.[5] This may be secondary to the frequent presence of tumour smearing artefact in seminoma, making identification of genuine LVI challenging.

For NSGCTs, LVI has been shown in multiple studies to be a powerful predictor of metastatic disease and recurrence.[6-13]

If LVI is present in a mixed or combined germ cell tumour, it is good practice to state which subtype of tumour is showing the LVI as this may alter clinical management if it was an embryonal carcinoma component showing LVI versus classical seminoma. Indicating that a case is 'uncertain' for vascular invasion is unhelpful for the treatment of patients with germ cell tumours.

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