33
Testicular Cancer

1. GROSS DESCRIPTION

Specimen

— biopsy (open or needle)/radical orchidectomy (testis, tunica vaginalis, coverings and spermatic cord).
— weight (g) and size (cm)–overall and testicular.
— length of spermatic cord (cm).

Tumour

Site

— testicular/paratesticular.
— bilateral: 1–3% of cases, synchronous or metachronous, similar or dissimilar types. Commonest is seminoma or spermatocytic seminoma but beware lymphoma in the older age group.
— testicular cancer usually presents with a painless lump or swelling of some duration. Investigation involves careful clinical examination and ultrasound assessment to detect hypoechoic areas of tumour. Tumour staging is by chest X-ray for pulmonary involvement and CT scan for abdominopelvic and mediastinal lymph node disease. FNA and needle biopsy are avoided due to the potential risk of iatrogenic tumour dissemination and because a testis should always be excised if there is a suspicion of tumour. Exceptions to this would be medically unfit patients or those with known disseminated leukaemia, lymphoma or carcinoma in whom FNA/core biopsy would provide a relatively accessible and non-invasive tissue diagnosis of relapse as a basis for further treatment. In the orchidectomy specimen the pathologist must determine: a. the extent of the tumour spread, b. distinguish between seminoma (radiosensitive), teratoma (chemosensitive) and sex cord stromal tumours, and c. establish if blood or lymphatic vascular invasion is present (indicator for chemotherapy in stage I disease). Serum AFP and HCG are significantly raised in non-seminomatous germ cell tumour while HCG may be modestly elevated in pure seminoma, and LDH is an indicator of bulky advanced or metastatic disease. Resection is by radical inguinal orchidectomy as a scrotal approach would then in addition incorporate pelvic lymph nodes as regional.

Size
— length × width × depth (cm) or maximum dimension (cm).

Appearance
— pale/fleshy/nodular ± necrosis: seminoma/lymphoma.
— cysts/cartilage ± necrosis: teratoma.
— haemorrhage: choriocarcinoma, yolk sac tumour.
— fibrous/calcific scar: regression.
— pale or tan/lobulated, often small and circumscribed: Leydig cell/stromal tumour.
— note that some inflammatory conditions, e.g. granulomatous orchitis or malakoplakia, can mimic germ cell tumour macroscopically.

Edge
— circumscribed/irregular.

2. HISTOLOGICAL TYPE
Therapeutic distinction is drawn between seminomatous and non-seminomatous germ cell tumours due to adjunctive radiotherapeutic and chemotherapy approaches, respectively.
NB: List and semiquantify the percentage of tumour types present in a mixed germ cell tumour. Histopathological grading is not applicable.
Germ cell tumours comprise 95% of testicular neoplasms (of which 40–50% are seminoma) and sex cord stromal lesions 4%.

Seminoma
— classical (93% of cases) or anaplastic with the same behaviour despite different mitotic rates and the term anaplastic is not really justified.
— typically large, polygonal cells with clear to eosinophilic cytoplasm and an intervening stroma with aggregates of lymphocytes. Granulomas and HCG positive syncytiotrophoblastic giant cells may also be present.
— usually sheets of cells but trabecular, diffuse single cell interstitial, pseudoglandular and tubular patterns also occur, and "cystic" spaces due to oedema. Sometimes sclerotic stroma.
— spermatocytic: benign with three cell types and PLAP negative in old age (see page 353).

Malignant teratoma

— differentiated, MTD.	Embryonic differentiation
— intermediate (a mix of MTD and MTU), MTI.	
— undifferentiated (syn. embryonal carcinoma), MTU.	
— yolk sac (endodermal sinus) tumour, YST.	Extraembryonic differentiation
— trophoblastic/choriocarcinoma, MTT*.	

*Requires additional specific chemotherapy.