EPIDEMIOLOGY:

1% of adult neoplasms and 5% of urological tumours. Its incidence has increased particularly in industrialised countries. 1%-2% bilateral. Predominant histology is germ cell tumours (GCT) (90%-95%).

Peak incidence is in the third decade of life for non-seminoma (NS) and mixed GCTs, and the fourth decade for pure seminoma.

Risk factors: cryptorchidism, hypospadias, decreased spermatogenesis and sub- or infertility, familial history of TCs among first-degree relatives and the presence of a contralateral tumour or GCNIS.

HISTOLOGICAL CLASSIFICATION, WHO 2016:

Germ cell tumours: Germ cell neoplasia in situ (GCNIS)
Derived from GCNIS: Seminoma • Embryonal carcinoma • Yolk sac tumour, post-pubertal type • Trophoblastic tumours • Teratoma, post-pubertal type • Teratoma with somatic malignant components • Mixed germ cell tumours

Germ cell tumours unrelated to GCNIS: Spermatocytic tumour • Yolk sac tumour, pre-pubertal type • Mixed germ cell tumour, pre-pubertal

Sex cord/stromal tumours: Leydig cell tumour • Sertoli cell tumour • Granulosa cell tumour • Thecoma/fibroma group of tumours • Other sex cord/gonadal stromal tumours • Tumours containing both germ cell and sex cord/gonadal stromal - Gonadoblastoma

Miscellaneous non-specific stromal tumours: Ovarian epithelial tumours • Tumours collecting ducts and rete testis

STAGING: TNM UICC, 2016, 8th edn:

Stage IA: primary tumours limited to the testis and epididymis, with no evidence of microscopic vascular or lymphatic invasion, no sign of metastases on clinical examination or imaging, and post-orchidectomy serum tumour marker levels within normal limits.

Stage IB: more locally invasive primary tumour, but no sign of metastatic disease.

Stage IS: persistently elevated (and usually increasing) serum tumour marker levels after orchidectomy, indicating subclinical metastatic disease (possibly a second GCT in the remaining testis).

SUMMARY OF DIAGNOSTIC EVALUATION:

Physical examination: Perform physical examination including suprapubic, cervical, axillary and inguinal lymph nodes, breast and testicles.

Serum tumour markers (STM): Measure STM before & after orchidectomy taking into account half-life.

Imaging:
- Perform bilateral testicular ultrasound (US) in all patients with suspicion of TC.
- Perform contrast CT scan (chest, abdomen and pelvis) in patients with TC.
- If iodine allergy or other limiting factors perform abdominal and pelvic magnetic resonance imaging.
- Perform MRI of the brain in patients with multiple lung metastases, or high ß-hCG values, or those in the poor-prognosis risk group.
- Do not use PET or bone scan for staging.

Inguinal exploration and initial management:
- Perform orchidectomy and pathological examination of the testis to confirm the diagnosis and to define the local extension (pT category).
- Testis sparing surgery may be offered in synchronous bilateral, metachronous contralateral tumours or in patients with a solitary testis in order to attempt to preserve fertility.
- Discuss biopsy of the contralateral testis to patients with TC and who are at high-risk for contralateral germ cell neoplasia ‘in situ’ (GCNIS).

Others:
- Discuss sperm banking with all men prior to starting treatment for TC.
- Encourage patients with TC to perform self-examination and to inform first-degree male relatives of the need for self-examination.