Investigation and staging

Investigation and staging

The diagnosis is confirmed by ultrasound scanning of the testis (Figure 86.16), which is also able to assess the contralateral testis. It is a mandatory test in all suspected cases of testicular tumour. In confirmed cases, staging is an essential step in planning treatment. Blood is taken prior to orchidectomy to measure the levels of tumour markers, which are raised in around 50% of cases. A rise in AFP is seen in ar ound 50–70% of NSGCTs and a rise in HCG is seen in 40–60% of NSGCTs and around 30% of seminomas. Lactate dehydrogenase (LDH) is expressed on chromosome 12p, which is often amplified in testis cancer cells. LDH is less specific for testis cancer than HCG or AFP . How ever, elevated LDH levels are associated with high tumour bur den in seminoma and recurrence in NSGCT . When raised, these markers are used to monitor the response to treatment. The mean serum half-lives of AFP and HCG are 5–7 days and 2–3 days, respectively , and reassessment of the - - - markers following orchidectomy can indicate whether all the tumour tissue has been removed. While a chest radiograph can show the ‘classical’ cannon - ball metastases (Figure 86.18a) CT scanning of the chest, abdomen and pelvis has taken over as the most useful means of detecting metastases and monitoring the response to ther - apy (Figure 86.18b). Summary box 86.8 Testicular tumours /uni25CF - /uni25CF - /uni25CF /uni25CF

(b) Figure 86.18 (a) Chest radiograph showing cannonball metastases from carcinoma of the testis and (b) computed tomography showing large para-aortic lymph node metastasis from carcinoma of the testis resulting in retroperitoneal mass (courtesy of Dr Davide Prezzi). A solid testicular lump that cannot be felt separately from the testis may be a malignant tumour Lymphatic spread is to the para-aortic lymph nodes Ultrasound is a mandatory investigation in all cases of suspected testicular tumour Tumour markers (AFP , HCG and LDH) should be measured prior to orchidectomy

Men should be o ff ered semen analysis and sperm banking prior to interventions such as surgery and chemotherapy that may render them infertile. Surgery: radical orchidectomy The orchidectomy is undertaken via an inguinal incision. The spermatic cord is displayed by dividing the external oblique aponeurosis and a soft clamp is placed across the cord to stop dissemination of malignant cells as the testis is mobilised into the wound. If there is a tumour the cord should be double transfixed and divided at the level of the internal inguinal ring and the testis removed. Management by staging and histological diagnosis (after orchidectomy) The treatment of patients with GCTs of the testis is usually successful, even in advanced cases. This largely reflects the excellent response of these tumours to chemotherapy and (for seminomatous tumours) to radiotherapy . Prognostic groups can be defined according to non-metastatic (stage I) and metastatic disease (lymph node metastasis – stage II; distant metastasis or nodal metastasis with elevated tumour markers – stage III). (The exact classification details can be found in the TNM Classification of Malignant Tumours , 8th edn; see Further reading .) Between 75% and 80% of patients with seminoma and about 55–64% of patients with NSGCT have stage I disease at diagnosis. The management strategies below are adapted from the European Association of

Urology’s current guidelines. Non-metastatic disease (stage I) About 15% of patients with clinical stage I (CSI) seminoma have subclinical metastatic disease, usually in the retroperitoneum, and will relapse after orchidectomy alone. Surveillance . Recurrence rates of 6% have been described in patients with low-risk features, including tumours size <4 /uni00A0 cm and no stromal rete testis invasion with cancer-specific survival rate reported with surveillance at >95%. The main limitation of surveillance is the need for intensive follow-up. Adjuvant chemotherapy. One course of adjuvant carboplatin therapy compared with radiotherapy shows no significant dif ference in recurrence rate, time to recurrence and survival after a median follow-up of 4 years. Adjuvant radiotherapy. Seminomas are radiosensitive. Radio therapy to a para-aortic field or to para-aortic and ipsilateral iliac nodes reduces the relapse rate to 1–3%. The rate of severe radiation toxicity is <2%. The main concern is the long-term risk of secondary malignancies . Up to 50% of patients with NSGCT with CSI disease have subclinical metastases and will relapse during surveillance. /uni25CF Surveillance. 14–48% of CSI-NSGCT patients undergoing surveillance have recurrence within 2 years of orchidec tomy . Careful surveillance can be an option for compliant, risk-stratified (based on the presence of lymphovascular recurrence rate as well as the salvage treatment. /uni25CF Adjuvant chemotherapy . One cycle of bleomycin–etoposide– cisplatin (BEP) is now the recommended strategy with re - currence rates of around 3%. The very long-term side ef - fects, particularly cardiovascular, remain to be ascertained. /uni25CF Retroperitoneal lymph node dissection (RPLND). The role of this surgery has now decreased with 2-year recurrence-free survival with adjuvant BEP /uni00A0×/uni00A0 1 versus RPLND favouring chemotherapy with recurrence-free survival of 99.5% ver - sus 91%. Metastatic disease (stages II and III) Treatment for metastatic testicular cancer is chemotherapy . Previously , radiotherapy was often used for early stage II seminoma but the cardiovascular and second malignancy risks have led to chemotherapy (three cycles of BEP or four cycles of etoposide and cisplatin [EP]) being the preferred alternative. Both are similarly e ff ective, with a trend towards greater e ffi cacy for chemotherapy in stage IIB seminoma. The initial treatment is chemotherapy (BEP) in all advanced cases of NSGCT except postpubertal teratoma without elevated tumour markers, which can be managed by RPLND surgery . Sex cord–stromal tumours Most of these tumours are benign (around 80%), so conser - vative treatment of small lesions with organ-sparing surgery is feasible, if the diagnosis is considered. For larger tumours, orchidectomy is necessary with multimodality treatment f or those with the rare malignant forms of these tumours. Summary box 86.9 Testis tumour staging and treatment /uni25CF /uni25CF /uni25CF /uni25CF -

Seminoma. NSGCT. Tumour markers (AFP , HCG and LDH) help to make the diagnosis and to follow the response to treatment CT scanning of chest, abdomen and pelvis is central to the staging of testicular tumours Testicular tumours are extremely sensitive to platinum-based chemotherapy Prognosis is excellent when the patient is treated with combination chemotherapy in a cancer centre

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