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## Standards and Datasets for Reporting Cancers

# Dataset for histopathology reports for testicular tumours and post-chemotherapy residual masses (2<sup>nd</sup> edition)

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## 1 INTRODUCTION

Testicular cancer is the most common cancer in men under the age of 45. The majority of tumours are germ cell tumours, with a smaller proportion of Leydig cell, Sertoli cell and other tumours. The incidence of germ cell tumours has been increasing since the 1940s at a rate of 3–6% per annum.<sup>1,2</sup> Nevertheless, they remain relatively rare with an incidence rate of between 6 and 7 new patients per 100 000 population in the UK. Cisplatin-based chemotherapy transformed the prognosis of patients with germ cell tumours but improvements in survival for patients with metastatic disease have continued even during the cisplatin era, rising from 76% during the period 1977–1986 to 88% for 1987–1996.<sup>3</sup> There is evidence that patients with poor prognosis have better outcomes when treated in larger institutions<sup>4</sup> and that this may not simply be due to stricter adherence to treatment protocols.<sup>5</sup>

The National Institute for Health and Clinical Excellence (NICE) guidance, *Improving Outcomes in Urological Cancer* ([www.nice.org.uk](http://www.nice.org.uk)), therefore recommended the establishment of a supra-network specialised testicular cancer multidisciplinary team, serving a population base of 2–4 million and managing 50–100 new patients a year. Patients with testicular cancer diagnosed by local urological multidisciplinary cancer teams should be referred to the specialist supra-network team and the diagnostic slides made available for review. It is expected that pathologists reporting testicular tumours and post-chemotherapy residual masses participate in an external quality assurance scheme as recommended by the NICE guidance.

Aspects of the epidemiology, biology, clinical diagnosis and treatment, and pathological prognostic factors of germ cell tumours have recently been reviewed.<sup>6</sup> There have been remarkable international collaborative efforts in the field of germ cell tumours with large numbers of randomised clinical trials, recently aimed at minimising treatment to reduce the risk of long term sequelae, such as the development of non germ cell cancers, cardiovascular events, infertility and sexual dysfunction,<sup>7</sup> but without compromising cure rates. The identification of pathological factors predictive of relapse in patients with disease apparently confined to the testis at presentation (clinical stage I) has meant that patients at low risk can be offered surveillance. For patients with metastatic disease, international collaboration led to the development of an International Consensus Classification,<sup>8</sup> based on the primary site, the presence and distribution of metastases and the level of the serum tumour markers alpha-fetoprotein (AFP), human chorionic gonadotrophin (HCG) and lactate dehydrogenase (LDH). This was subsequently adopted by the TNM classification system.<sup>9</sup>

Patients presenting with metastatic disease and evidence of a testicular tumour with high levels of serum AFP and/or HCG are referred for immediate chemotherapy without prior biopsy or orchidectomy because of the very rapid doubling times of germ cell tumours<sup>10</sup> and the fact that tumour volume is a determinant of outcome. However, in the absence of a testicular lesion, biopsy may be required to differentiate between a germ cell tumour and other tumours secreting HCG (bladder, breast, bronchus, gastrointestinal tract, kidney, lymphoid tissue) or AFP (gastrointestinal tract, liver).

These guidelines are not based on a full evidence review but on selected papers with large numbers of patients, often in the context of randomised clinical trials. The evidence for the importance of histopathological features in the management of patients with germ cell tumours is reasonably consistent, although there are intercontinental differences in the relative importance

attributed to different factors for clinical management. These guidelines therefore reflect best clinical practice in the United Kingdom, which is broadly in line with the rest of Europe.

Guidelines for the reporting of testicular tumour specimens are required and should be adopted for the following reasons.

1. Subtyping and staging of testicular tumours determine subsequent clinical management and follow-up.
2. Consistent reporting of pathological risk factors, which vary depending on the tumour subtype and clinical context, will allow patients to make informed decisions about their care.
3. Adoption of a consistent approach to classification and risk assessment of testicular cancers is essential for audit and epidemiological studies.

The following organisations have been consulted on writing the dataset:

- British Association of Urological Surgeons (BAUS)/BAUS section of oncology
- British Uro-oncology Group
- National Cancer Research Institute (NCRI) Testis Clinical Studies Group.

## **2 CLINICAL INFORMATION REQUIRED ON THE SPECIMEN REQUEST FORM**

This includes laterality, the type of specimen (biopsy, simple or radical orchidectomy, lymphadenectomy or post-chemotherapy residual mass), the anatomical origin of lymph nodes and history of prior testicular tumours and treatment. Information concerning serum tumour markers is useful, although results may not always be available at the time the clinicians submit the specimen.

## **3 PREPARATION OF SPECIMENS BEFORE DISSECTION**

Orchidectomy and lymphadenectomy specimens generally require fixation in formalin for 24 hours at least. Fixative can be slow to penetrate the thick testicular coverings, and therefore careful incision into the capsule can be useful for tumour preservation. It should be noted that ‘bivalving’ of the fresh specimen can lead to bulging of the cut surfaces and the distortion can make assessment of the relationship between the tumour and the rete and tunica difficult. Because germ cell tumours are particularly poorly cohesive, there may also be artifactual contamination of relevant resection margins. This spread of tumour can also mimic vascular invasion.

## **4 SPECIMEN HANDLING AND BLOCK SELECTION**

A synoptic reporting proforma has been added as an *aide memoire* for the main features of these neoplasms (Appendix C). The proforma extracts the dataset currently used in diagnosis and staging. This would usually be supplemented by a more detailed written report. Aspects of best practice in handling testicular tumour specimens have recently been reviewed.<sup>11,12</sup>

## **4.1 Gross examination**

### **4.1.1 Orchidectomy specimens**

Subcapsular orchidectomies are generally only performed in the context of prostate cancer, and these operations have become rarer with the uptake of medical therapy for androgen ablation. Simple orchidectomies, usually for benign disease, involve the removal of the testis, epididymis and very short segment of cord via the scrotum. Most patients with a clinical diagnosis of testicular tumour undergo a radical orchidectomy, whereby the testis is removed with the tunica, epididymis and a length of spermatic cord via an inguinal approach. Organ-sparing surgery, to preserve a degree of natural hormonal production, is an option in specific cases, for instance in patients with bilateral testicular tumours.<sup>13,14</sup> Excision margins are inked in these cases.

Radical testicular specimens should be orientated by identifying the cord, the slightly more bulbous head of epididymis tapering to the tail of the epididymis, separated from the testis proper by the epididymal sinus.

Specimens are measured in three dimensions and the length of spermatic cord recorded. The terms of proximal and distal are best avoided when referring to the cord as they can cause confusion. A block is taken from the cord resection margin prior to incision of the tumour to avoid contamination. Sections from the midpoint and the base of cord can also be taken at this time, as they more commonly reveal vascular invasion than the cord resection margin. Direct invasion into the cord, whether into the lower cord or the surrounding fibro adipose tissue outside the tunica, should be noted for staging purposes (pT3). The parietal tunica vaginalis can then be reflected and the presence of a hydrocele and/or adhesions noted. Unless there is invasion through the tunica albuginea into the vaginalis, the vaginalis is often not well represented in tissue sections as it separates from the testis. The absence of invasion should therefore be recorded at this time for staging purposes. Breaches in the tunica are also noted. The specimen can then be bivalved through the rete and epididymis.

In summary, the following are noted:

- tumour location (upper pole, mid section or lower pole)
- the appearance (solid or cystic) and colour of the tumour
- the maximum tumour size
- the relationship of the tumour to the tunicas, rete (if identifiable), epididymis and cord
- the presence of abnormalities in the residual normal testis.

### **4.1.2 Primary lymphadenectomy specimens**

Although retroperitoneal lymph node dissections can be performed as an alternative to surveillance or chemotherapy in patients with stage I disease, this is unusual in the UK. Any such specimens are measured in three dimensions. Lymph nodes are identified and described as either macroscopically normal or involved by tumour.

### **4.1.3 Excision of residual masses after chemotherapy**

A complete retroperitoneal lymph node dissection may be performed in these cases but often only the involved lymph nodes are removed ('lumpectomy'). Specimens are measured in three dimensions. It is useful to ink the surgical resection margins as completeness of excision is a

determinant of outcome. The masses usually consist of single or multiple lymph nodes but occasionally visceral metastasis may be resected.

## **4.2 Block selection**

Comprehensive sampling is essential for both primary resections and residual masses as the identification of even small area of a different subtype can alter patient management and impact on prognosis. Although the recommendation of one block per centimetre of tumour is usual, more may be required to adequately represent all the macroscopically different areas of tumour as well as the interface with surrounding structures for staging and management purposes. Conversely, large but homogeneous tumours may require less.

### **4.2.1 Orchidectomy specimens for clinically localised disease**

Blocks are selected to represent:

- the cord resection margin, midpoint and base of cord at least (prior to sectioning the tumour to avoid contamination)
- the relationship of the tumour(s) to the rete testis, epididymis and cord
- the minimum distance of the tumour to the nearest inked resection margin for partial orchidectomies
- all areas of the tumour(s) with different macroscopic appearances (solid, cystic, pale or haemorrhagic)
- adjacent testis including the capsule, a common site for vascular invasion
- uninvolved testis.

### **4.1.2 Retroperitoneal lymph node dissections and post-chemotherapy residual masses**

Blocks are selected to represent:

- all areas of the positive node(s) with different macroscopic appearances (solid, cystic, pale or haemorrhagic)
- the minimum distance of the tumour to the nearest inked resection margin
- all macroscopically negative nodes to search for micrometastatic disease.

For post-chemotherapy residual masses, particularly in the absence of a biopsy diagnosis prior to treatment, it is often useful to include areas of necrosis as ghost outlines of the tumour often remain and allow the distinction between seminoma and teratoma.

## **5 CORE DATA ITEMS**

### **Classification of testicular tumours**

There are two major classifications of germ cell tumours, the British Testicular Tumour Panel (BTTP)<sup>15-17</sup> and the World Health Organization (WHO).<sup>18</sup> The BTTP classification was based on a review of over 1000 cases with clinical outcome, prior to the introduction of platinum based therapy. Whereas the WHO classification lists tumour subtypes individually, the BTTP tends to group different patterns of differentiation into categories that were clinically relevant at the time. The BTTP approach led to the early recognition of the malignant potential of testicular tumours

entirely composed of differentiated, somatic elements in the adult male,<sup>15</sup> and the use of teratoma differentiated rather than mature teratoma to distinguish them from their ovarian counterparts, which are essentially benign. The malignant nature of these tumours in adult<sup>19,20</sup> but not pre-pubertal<sup>21,22</sup> males was subsequently confirmed. Unfortunately, the category of teratoma in the WHO classification contains both benign and malignant tumours. Dermoid cysts are classified as teratomas, yet are considered to be benign,<sup>18,23</sup> although only a very small number of cases have been reported. It is essential for clinical management purposes that it is clear that tumours composed entirely of differentiated somatic elements can metastasise and the term of teratoma differentiated appears to convey that understanding. Furthermore, these tumours are refractory to germ cell type chemotherapy, and can undergo secondary transformation towards a somatic malignancy. This was only clearly recognised and characterised relatively recently<sup>24</sup> and was not described in the BTTP classification. Equally, the BTTP only catalogued trophoblastic tumours with a biphasic pattern equivalent to choriocarcinoma. The few cases of cystic trophoblastic tumour were described subsequently, usually in post-chemotherapy residual masses, and they appear to be associated with good prognosis.<sup>25,26</sup> Placental site trophoblastic tumours are even rarer.<sup>27,28</sup>

Correlations between the major categories of BTTP and the WHO classifications are easy to draw, as shown in table below.

<b>WHO</b>	<b>BTTP</b>
Seminoma	Seminoma
Seminoma with syncytiotrophoblastic cells	
Spermatocytic seminoma	Spermatocytic seminoma
Embryonal carcinoma	Malignant teratoma undifferentiated (may include areas of yolk sac tumour)
Yolk sac tumour	Yolk sac tumour if in pure form (prepubertal males mainly)
Trophoblastic tumours	
Choriocarcinoma	Malignant teratoma trophoblastic
Other trophoblastic tumours	Not included in the BTTP classification as only described subsequently in the testis.
Monophasic choriocarcinoma	
Placental site trophoblastic tumour	
Teratoma	Teratoma differentiated
Dermoid cyst	
Monodermal teratoma	
Teratoma with somatic type malignancies	Not described.
Mixed forms	
Mixed embryonal carcinoma and teratoma	Malignant teratoma intermediate
Mixed teratoma and seminoma	Combined teratoma differentiated and seminoma
Choriocarcinoma and teratoma/embryonal carcinoma	Malignant teratoma trophoblastic

The BTTP classification offers a convenient summary for clinical purposes, particularly for tumours with complex histology. The central issue is that of clear understanding between pathologists and other clinicians, and a practical solution to ensure this is to list all the different elements of the tumour as per WHO classification but provide a summary by the BTTP as well as the WHO classification.

### **Pathological prognostic factors in stage I disease**

For classical seminomas, tumour size (up to 40 mm versus over 40 mm), invasion of the rete testis and vascular invasion (lymphatic and/or venous) have been identified as risk factors for relapse<sup>29</sup> and are used in some centres to identify patients who may benefit from adjuvant radiotherapy or chemotherapy<sup>30</sup> rather than surveillance. Invasion into the rete testis was defined as direct spread into the stroma of the rete testis and not tubular involvement (pagetoid spread of intratubular germ cell neoplasia or luminal invasion) in the pooled analysis of large surveillance studies.<sup>29</sup> It should be emphasised that the assessment of vascular invasion can be particularly difficult in seminomas due to the extremely friable nature of the tumour, hence the need for careful handling as emphasised earlier.

For teratomas/nonseminomatous germ cell tumours, vascular invasion (lymphatic and/or venous) has consistently been identified as a risk factor<sup>31-34</sup> and is used to guide management. The presence and extent of undifferentiated teratoma has also been shown to be predictive,<sup>33,34</sup> but not always on multivariate analysis.<sup>34</sup> In teratoma differentiated, the presence of immature elements is not a prognostic factor but the development of secondary malignant transformation, characterised by an invasive growth pattern, is associated with poor prognosis unless complete surgical excision is achievable.<sup>24</sup>

### **Metastatic disease and post-chemotherapy residual masses**

The role of pathology in metastatic disease is to confirm the diagnosis of a germ cell tumour if there is clinical uncertainty. However, prognosis and treatment decisions are then based on the International Consensus Classification.<sup>8</sup>

Serum markers and imaging are used to assess response to chemotherapy. Residual masses may persist after completion of treatment. Patients with seminoma do not generally require resection of a persistent mass, as the presence of residual viable seminoma and the development of recurrence are rare.<sup>35,36</sup> On the other hand, in patients with teratoma, two thirds of resections contain viable disease, and it is not possible to identify preoperatively those with fibrosis or necrosis only.<sup>35,37</sup> The presence of germ cell elements other than teratoma differentiated, seen in 20–30% of cases, and incomplete resection are independent risk factors for progression.<sup>37-39</sup> The presence of undifferentiated teratoma has been identified as the single most significant risk factor for progression in patients with complete resections.<sup>39</sup> Patients with teratoma differentiated in their primary orchidectomy are more likely to have an incomplete response<sup>40</sup> and are at higher risk of harbouring teratoma differentiated in residual masses, and therefore viable persistent tumour. However the absence of teratoma differentiated from the primary tumour does not preclude its presence in metastases.<sup>41,42</sup> The presence of cytologically atypical epithelial or mesenchymal elements in teratoma differentiated is not uncommon in post-chemotherapy specimens and does not alter prognosis. However, if the somatic cells show an invasive pattern,

this is indicative of secondary transformation towards a somatic malignancy, which is associated with a higher risk than teratoma differentiated alone.<sup>43</sup>

## **Summary of core data items**

### **5.1 Clinical**

- Type of specimen and procedure.
- Anatomic site.

### **5.2 Pathological**

#### **5.2.1 Orchidectomy specimens**

##### **5.2.1.1 Macroscopic items**

- Number, location and description of tumour(s).
- Tumour size.
- Margin status.

##### **5.2.1.2 Microscopic items**

- Tumour subtype(s).
- Invasion of the rete testis (classical seminoma) or epididymis.
- Direct invasion of the cord.
- Vascular (lymphatic and/or venous) invasion (unusually for the TNM system, microscopic vascular invasion contributes to staging).
- Cord resection margin (radical orchidectomies).
- Surgical margin status (partial orchidectomies).
- Primary tumour category (pT stage).
- Regional nodal status (pN stage) including number involved relative to total number and level of positive nodes.
- Presence or absence of intratubular germ cell neoplasia.

#### **5.2.2 Lymphadenectomies or resections of residual masses**

- Tumour subtype(s).
- Viability of the tumour(s).
- Margin status.

## **6 NON-CORE DATA ITEMS**

- Proportion of undifferentiated teratoma.
- Presence of normal spermatogenesis.

## **7 DIAGNOSTIC CODING**

### **7.1 TNM classification**

The 6<sup>th</sup> edition of TNM<sup>9</sup> is recommended – see Appendix A.

### **7.2 SNOMED coding**

See Appendix B.

## **8 REPORTING OF BIOPSY SPECIMENS**

Testicular biopsies are most commonly performed in the context of infertility and intratubular germ cell neoplasia may be an ‘incidental’ finding. The rationale for performing contralateral biopsies in patients with germ cell tumours is to offer low-dose irradiation to prevent the development of an invasive germ cell tumour and the need for a second orchidectomy and therefore complete androgen ablation. However, the value of routine biopsies is controversial<sup>44</sup> as the overall prevalence is low (approximately 5%) and up to a quarter of patients treated for intratubular germ cell neoplasia develop androgen insufficiency requiring testosterone supplementation.<sup>45</sup> Nevertheless, patients with an atrophic contralateral testis and who present before the age of 31 appear to be at higher risk<sup>46</sup> and may be offered biopsy.

Generally three levels are taken. It is useful to retain spare sections of immunocytochemistry in case of doubt about the diagnosis of intratubular germ cell neoplasia. A Feulgen stain can be useful for the rapid identification of spermatozoa as they are bright red in a blue background.

Opinions are divided concerning the value of Bouin's fixation.<sup>11,47</sup> It offers better cytological detail and allows a better assessment of spermatogenesis but can adversely affect the results of immunocytochemistry. Formalin fixation can induce artefact with ballooning of the cytoplasm, mimicking neoplasia, but most cases can be resolved with the use of markers.

### **8.1 Macroscopic items**

Biopsies are measured and completely embedded.

### **8.2 Microscopic items**

- Approximate number of tubular cross-sections present.
- Assessment of spermatogenesis.
- Presence or absence of intratubular germ cell neoplasia.

## **9 REPORTING OF FROZEN SECTIONS**

Frozen sections of testicular lesions are rarely required as ultrasound diagnosis is extremely reliable. However, they may be requested to confirm the diagnosis prior to orchidectomy in patients with bilateral tumours or if clinical findings are equivocal. The identification of undifferentiated teratoma is usually straightforward but the distinction between seminoma with a

prominent granulomatous reaction and a reactive process may be difficult. Similarly, the distinction between teratoma differentiated and an epidermal cyst is compromised by the problem of sampling as the diagnosis of teratoma differentiated is made on the demonstration of skin appendages, non-squamous somatic elements or intratubular germ cell neoplasia. Urologists and their patients must be made aware of the inherent difficulties of the technique and these potential pitfalls.

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## APPENDIX A TNM PATHOLOGICAL STAGING (6TH EDITION, UICC<sup>9</sup>)

The classification applies only to germ cell tumours of the testis. The assessment of the serum tumour markers alpha-fetoprotein (AFP), human chorionic gonadotropin (hCG) and lactate dehydrogenase (LDH) contributes to the staging. Although pathologists may not be aware of specific levels to allow stage grouping, the details are provided here for information.

The major change in the 6<sup>th</sup> edition<sup>9</sup> compared with the 5<sup>th</sup> edition<sup>48</sup> affects the assessment of nodes and applies to all cancer sites. A tumour nodule in the connective tissue of the lymph drainage area is classified as a regional lymph node metastasis if the nodule has the form and smooth contour of a lymph node, even in the absence of histologically proven residual lymph node tissue.

### **pT Primary tumour**

- pTx Primary tumour cannot be assessed (used if no radical orchidectomy has been performed, except for pTis and pT4, where radical orchidectomy is not always necessary for classification purposes).
- pT0 No evidence of primary tumour (e.g. histological scar in testis).
- pTis Intratubular germ cell neoplasia (carcinoma in situ).
- pT1 Tumour limited to testis and epididymis without vascular/lymphatic invasion; tumour may invade tunica albuginea but not tunica vaginalis.
- pT2 Tumour limited to testis and epididymis with vascular/lymphatic invasion, or tumour extending through tunica albuginea with involvement of tunica vaginalis.
- pT3 Tumour invade spermatic cord with or without vascular/lymphatic invasion.
- pT4 Tumour invade scrotum with or without vascular/lymphatic invasion.

In the case of multiple tumours, the tumour with the highest T category should be classified and the multiplicity or number of tumours should be indicated in parentheses, e.g. pT2 (m) or pT2 (5).

### **pN Regional lymph nodes**

The regional lymph nodes are the abdominal para-aortic (periaortic), preaortic, interaortocaval precaval, paracaval, retrocaval, and retroaortic nodes. Nodes along the spermatic vein should be considered regional.

Laterality does not affect the N classification.

The intrapelvic and the inguinal nodes are considered regional after scrotal or inguinal surgery.

- pNx Regional lymph nodes cannot be assessed.
- pN0 No regional lymph node metastasis.
- pN1 Metastasis with a lymph node mass 2 cm or less in greatest dimension and 5 or fewer positive nodes, none more than 2 cm in greatest dimension.

pN2 Metastasis with a lymph node mass more than 2 cm but not more than 5 cm in greatest dimension; or more than 5 nodes positive, none more than 5 cm; or evidence of extranodal extension of tumour.

pN3 Metastasis with a lymph node mass more than 5 cm in greatest dimension.

**pM Distant metastasis**

pMX Distant metastasis cannot be assessed.

pM0 No distant metastasis.

pM1 Distant metastasis

pM1a Non-regional lymph node(s) or lung

pM1b Other sites.

**S Serum tumour markers**

SX Serum marker studies not available or not performed.

S0 Serum marker study levels within normal limits.

	<b>LDH</b>		<b>hCG (mIU/ml)</b>		<b>AFP (ng/ml)</b>
S1	<1.5 x N	and	<5000	and	<1000
S2	1.5–10 x N	or	5000–50,000	or	1000–10,000
S3	>10 x N	or	>50,000	or	>10,000

N indicates the upper limit of normal for the LDH assay.

**Stage grouping**

Stage 0	pTis	N0	M0	S0,SX
Stage I	pT1–4	N0	M0	SX
Stage IA	pT1	N0	M0	S0
Stage IB	pT2	N0	M0	S0
	PT3	N0	M0	S0
	pT4	N0	M0	S0
Stage IS	Any pT/TX	N0	M0	S1–3

Stage II	Any pT/TX	N1-3	M0	SX
Stage IIA	Any pT/TX	N1	M0	S0
	Any pT/TX	N1	M0	S1
Stage IIB	Any pT/TX	N2	M0	S0
	Any pT/TX	N2	M0	S1
Stage IIC	Any pT/TX	N3	M0	S0
	Any pT/TX	N3	M0	S1
Stage III	Any pT/TX	Any N	M1, M1a	SX
Stage IIIA	Any pT/TX	Any N	M1, M1a	S0
	Any pT/TX	Any N	M1, M1a	S1
Stage IIIB	Any pT/TX	N1-3	M0	S2
	Any pT/TX	Any N	M1, M1a	S2
Stage IIIC	Any pT/TX	N1-3	M0	S3
	Any pT/TX	Any N	M1, M1a	S3
	Any pT/TX	Any N	M1b	Any S

## APPENDIX B SNOMED CODING OF TESTICULAR TUMOURS

Right testis	T78010
Left testis	T78020
Side unknown	T78000
Right epididymis	T79110
Left epididymis	T79120
Side unknown	T 79100
Spermatic cord	T79300
Seminoma, classical	M90613
Seminoma, metastatic	M90616
Spermatocytic seminoma	M90633
Malignant teratoma undifferentiated	M90823
MTU, metastatic	M90826
Teratoma differentiated	M90801
TD, metastatic	M90806
Malignant teratoma trophoblastic	M91003
Leydig cell tumour	M86500
Sertoli cell tumour	M86310
Sex cord stromal tumour	M85901

## APPENDIX C REPORTING PROFORMA FOR TESTICULAR CANCER

Surname..... Forenames..... Date of birth..... Sex....  
 Hospital..... Hospital no..... NHS no.....  
 Date of receipt..... Date of reporting..... Report no.....  
 Pathologist..... Surgeon.....

### Nature of specimen/procedure and core macroscopic items

Biopsy  Right  Orchidectomy  Right  Retroperitoneal lymph node dissection   
 Left  Left   
 Partial

Tumour location .....  
 Maximum tumour size .....(mm)

Nodes Yes  No   
 Please specify origin.....

Surgical margins Negative  Positive  Site(s).....  
 Distance to the nearest margin .....(mm)

### Core microscopic items

Tumour type/s (one or more)	<b>Germ cell tumour</b>	<input type="checkbox"/>	<b>Non germ cell</b>	<input type="checkbox"/>
	Classical seminoma	<input type="checkbox"/>	Leydig cell tumour	<input type="checkbox"/>
	Spermatocytic seminoma	<input type="checkbox"/>	Sertoli cell tumour	<input type="checkbox"/>
	Undifferentiated teratoma/embryonal carcinoma	<input type="checkbox"/>	Undifferentiated sex cord/stromal	<input type="checkbox"/>
	Yolk sac tumour	<input type="checkbox"/>	Other	<input type="checkbox"/>
	Malignant teratoma trophoblastic/choriocarcinoma	<input type="checkbox"/>	Please specify:.....	
	Teratoma differentiated/teratoma	<input type="checkbox"/>		
	Other	<input type="checkbox"/>		
Please specify:.....				

No evidence of primary tumour (e.g. scar in testis, pT0)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Intratubular germ cell neoplasia only (pTis)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Tumour limited to testis/epididymis without vascular invasion, invasion of tunica albuginea but not vaginalis (pT1)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Tumour limited to testis/epididymis but tunica vaginalis involvement (pT2)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Tumour limited to testis/epididymis with vascular invasion (pT2)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Tumour invades spermatic cord with or without vascular invasion (pT3)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Tumour invades scrotum with or without vascular invasion (pT4)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Margins N/A  Positive  Site(s).....  
 Negative  Distance to the nearest margin .....(mm)

BTTP classification If seminoma, invasion into rete Yes  No   
 pTNM stage: pT ..... pN..... pM..... SNOMED codes  
 T..... M.....  
 T..... M.....

Signature of pathologist..... Date.....