| **Required/ Recommended** | **Element name** | **Values** | **Commentary** | **Implementation notes** |
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| Recommended | CLINICAL INFORMATION | •Not provided  OR Multi selection value list (select all that apply): •Previous history of testicular cancer, specify • Previous therapy, specify • Other, specify | Retroperitoneal lymphadenectomies (RPLNDs) may be performed at the time of diagnosis of a testicular tumour, or may be performed after chemotherapy, and this will affect the likely pathological changes seen. Although the majority of excisions will be for germ cell tumours, primary prophylactic excisions for malignant sex cord- stromal tumours are also occasionally performed.1  References  1 Hendry J, Fraser S, White J, Rajan P and Hendry DS (2015). Retroperitoneal lymph node dissection (RPLND) for malignant phenotype Leydig cell tumours of the testis: a 10-year experience. Springerplus 4:20. |  |
| Recommended | PRE-PROCEDURE SERUM TUMOUR MARKERS | •Not provided  OR  •Provided  Multi selection value list (select all that apply):  o Serum tumour markers within  normal limits  OR  o Specify serum tumour markers   used, level and date markers   were drawn  Numeric:  • Date \_\_\_\_  • AFP \_\_\_ ug/L  • LDH \_\_\_ IU/L  • b-HcG \_\_\_ IU/L | Serum marker studies play a key role in the clinical management of patients with testicular germ cell tumours and in the monitoring of recurrent disease.1-3 Most patients who undergo post chemotherapy retroperitoneal lymphadenectomies (RPLND) will have negative markers following orchiectomy as those with positive markers will be treated with further chemotherapy or radiotherapy. The occurrence of elevated serum levels of alpha-fetoprotein (AFP) or the beta subunit of human chorionic gonadotropin (b-hCG) may indicate the need for additional sections of certain specimens if the initial findings do not account for such elevations.  **Anatomic Stage/Prognostic Groups**    A “y” prefix indicates those cases in which classification is performed during or following initial multimodality therapy (i.e., chemotherapy, radiation therapy, or both chemotherapy and radiationtherapy).  Prognostic Factors  Serum Tumour Markers (S)  SX Serum marker studies not available or performed  S0 Serum marker study levels within normal limits  LDH hCG (mIU/mL) AFP (ng/mL)  S1 <1.5 x N# and <5,000 and <1,000  S2 1.5-10 x N or 5,000-50,000 or 1,000-10,000  S3 >10 x N or >50,000 or >10,000  # N indicates the upper limit of normal for the LDH assay.  The Serum Tumour Markers (S) category comprises the following:   * AFP – half-life 5 to 7 days * hCG – half-life 1 to 3 days * Lactate dehydrogenase (LDH)   References  1 Stephenson AJ, Bosl GJ, Motzer RJ, Kattan MW, Stasi J, Bajorin DF and Sheinfeld J (2005). Retroperitoneal lymph node dissection for nonseminomatous germ cell testicular cancer: impact of patient selection factors on outcome. J Clin Oncol 23(12):2781-2788.  2 Choueiri TK, Stephenson AJ, Gilligan T and Klein EA (2007). Management of clinical stage I nonseminomatous germ cell testicular cancer. Urol Clin North Am 34(2):137-148; abstract viii.  3 Donohue JP, Thornhill JA, Foster RS, Rowland RG and Bihrle R (1995). Clinical stage B nonseminomatous germ cell testis cancer: the Indiana University experience (1965-1989) using routine primary retroperitoneal lymph node dissection. Eur J Cancer 31a(10):1599-1604. |  |
| Required | SPECIMEN(S) SUBMITTED | • Not specified  OR  Multi selection value list (select all that apply):  • Retroperitoneal lymphadenectomy, specify nodal site (Text and Single selection value list:)   * No disease * Necrosis * Viable tumour   •Brain  •Lung  •Liver  •Other, specify | The type of retroperitoneal surgery performed is dependent on which testis was affected by tumour and a number of different surgical approaches are possible. Although there are exceptions, rightsided tumours metastasize to the interaortocaval lymph nodes first followed by the precaval and paracaval lymph nodes. Left-sided testicular tumours metastasize to the para- and preaortic areas. Contralateral involvement is more frequent in right-sided tumours as well as in bulky disease. The practice of specimen submission differs greatly, but often surgeons will resect separate nodal sites in separate containers. After chemotherapy, it is common practice to excise other remaining sites of disease, apart from retroperitoneal lymphadenectomies (RPLNDs) and these should be identified. |  |
| Required and Recommended | SIZE OF LARGEST NODAL METASTASIS | • Cannot be assessed  Numeric: Multi selection value list (select all that apply):  • Maximum dimensions \_\_\_ mm  Recommended  • Additional dimensions  \_\_\_ mm x \_\_\_mm | A number of studies have shown that the size of the retroperitoneal nodes is associated with the presence of tumour (teratoma and also of viable malignant elements). Nodal size may be difficult to measure when nodes are confluent. We suggest that where separate nodes are not readily identifiable then the largest diameter of the overall tumour be taken on macroscopy.1,2 The other two dimensions are recommended.  References  1 Hudolin T, Kastelan Z, Knezevic N, Goluza E, Tomas D and Coric M (2012). Correlation between retroperitoneal lymph node size and presence of metastases in nonseminomatous germ cell tumors. Int J Surg Pathol 20(1):15-18.  2 Spiess PE, Brown GA, Pisters LL, Liu P, Tu SM, Evans JG, Kamat AM, Black P and Tannir NM (2006). Viable malignant germ cell tumor in the postchemotherapy retroperitoneal lymph node dissection specimen: can it be predicted using clinical parameters? Cancer 107(7):1503-1510. |  |
| Recommended | BLOCK IDENTIFICATION KEY | Text | The origin/designation of all tissue blocks should be recorded and it is preferable to document this information in the final pathology report. This is particularly important should the need for internal or external review arise. The reviewer needs to be clear about the origin of each block in order to provide an informed specialist opinion. If this information is not included in the final pathology report, it should be available on the laboratory computer system and relayed to the reviewing pathologist. Recording the origin/designation of tissue blocks also facilitates retrieval of blocks, for example for further immunohistochemical or molecular analysis, research studies or clinical trials. Comprehensive sampling is essential for residual masses, as the identification of even a 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. The number of nodes harvested has been shown to impact on prognosis.1,2 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 resection margin (which may be inked) • all macroscopically negative nodes to search for micrometastatic disease • total number of nodes resected. It is recommended that a record is kept of a good representative paraffin block of tumour and if frozen tissue is stored.  References  1 Carver BS, Cronin AM, Eggener S, Savage CJ, Motzer RJ, Bajorin D, Bosl GJ and Sheinfeld J (2010). The total number of retroperitoneal lymph nodes resected impacts clinical outcome after chemotherapy for metastatic testicular cancer. Urology 75(6):1431-1435.  2 Nayan M, Jewett MA, Sweet J, Anson-Cartwright L, Bedard PL, Moore M, Chung P, Warde P and Hamilton RJ (2015). Lymph Node Yield in Primary Retroperitoneal Lymph Node Dissection for Nonseminoma Germ Cell Tumors. J Urol 194(2):386-391. | List overleaf or separately with an indication of the nature and origin of all tissue blocks. |
| Required | HISTOLOGICAL TUMOUR TYPE | Multi selection value list (select all that apply):  Text and Numeric  • Viable tumour   * Present \_\_\_\_\_% * Absent   • Germ cell tumour, specify type and percentage  \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_%  \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_%  \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_%  \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_%  • Other, specify | In concordance with the dataset for Orchidectomy specimens, the World Health Organisation (WHO) 2016 classification of testicular tumours should be used.1 Retroperitoneal lymphadenectomy (RPLND) before treatment The type of tumour identified in an RPLND is crucial information to determine further treatment. The tumour in prechemotherapy RPLNDs (also referred to as primary RPLNDs) generally (but not always) show similar findings to that in the orchidectomy specimen. In primary setting, pathologic N staging is more commonly used to determine the need for adjuvant chemotherapy with pN0 and pN1 leading to surveillance and pN2 and pN3 (rare) leading to adjuvant chemotherapy. RPLND after treatment After chemotherapy, and especially in late relapses, the pathology may be substantially different from that seen in primary RPLND.2 In general terms, after chemotherapy, 40-50% of germ cell tumour cases show pure necrosis with no viable tissue seen. A further 40% show teratoma, while the remaining 10% show a mixture of ‘malignant’ germ cell elements such as embryonal carcinoma, or yolk sac tumour, and a small number may show somatic transformation. Pure teratomatous metastasis is generally treated by surgical excision alone, whereas patients who have other residual germ cell tumour components are usually treated with additional chemotherapy. Metastatic sex cord-stromal tumours are also occasionally operated upon.3 Even the type of tumour seen substantially affects the prognostic and therapeutic implications4 with, for example, certain variants being associated with a good outcome5 while others are associated with an intermediate6 or more aggressive course.7 Diagnosis of these variants may be challenging and require expert consultation. The percentage of ‘viable malignant cells’ has also shown to be a determinant of prognosis in a number of studies. 8-11 10% is the most common cut-off used to determine the need for further treatment. For post-chemotherapy residual masses, particularly in the absence of a biopsy diagnosis prior to treatment, it is often useful to examine areas of necrosis, as ghost outlines of the tumour often remain and allow the distinction between seminoma and non-seminomatous germ cell tumour. The reporting of number and location of lymph nodes involved by necrosis, fibrosis, xanthomatous and fibroxanthomatous reaction is important to the treating physician to evaluate the extent and distribution of tumour in different lymph nodes. There is evidence that fibrosis often represents neoplastic stroma originating from teratoma or yolk sac tumor. The spindle cells in the areas of fibrosis are often reactive to cytokeratin and display allelic loss (85%) and 12p anomalies (33%) characteristic of germ cell tumours. Xanthomatous and fibroxanthomatous reaction may sometimes pose a diagnostic challenge and immunohistochemical staining for evaluation of residual tumour is deemed necessary in occasional cases. It is important to recognise that residual viable malignancy (embryonal carcinoma, yolk sac tumour, classical seminoma or choriocarcinoma) may trigger further chemotherapy and therefore it is important to only report viable elements along with percentage of viable tumour and not semi-viable or non-viable tumour. Necrosis and post-chemotherapy teratoma would not usually trigger further therapy, unless the clinical situation dictates otherwise. In the case of cystic trophoblastic tumour (CTT), an explanatory note should be provided to caution the physicians against further chemotherapy. Data for CTT are limited but the largest study of 15 patients with follow-up showed that 11 did not recur, three showed late recurrences of possibly unrelated yolk sac tumour and the one patient who did recur with a rise in hCG had unresected residual masses.5 For post-chemotherapy RPLND, it may be desirable to embed more of the specimen if it is found to contain necrosis or non-viable tumour to exclude small foci of viable tumour. Secondary somatic malignancy is rare and challenging to diagnose. The tumour typically consists of a pure population of atypical mesenchymal or epithelial cells and occupies at least one low-power field (×4 objective, 5 mm in diameter).1 Sarcomas are the most common type, though some postchemotherapy sarcoma-like tumours may be sarcomatoid yolk sac tumours.12 Primitive neuroectodermal tumour (PNET) is another relatively common somatic-type malignancy which behaves aggressively.13,14 Most carcinomas are adenocarcinomas, usually Not Otherwise Specified (NOS) type. Occasionally, patients may develop nephroblastoma.15 A somatic malignancy in a metastasis increases likelihood of dying from the disease and if it is localized, surgical resection is the optimal treatment.7 Patients usually respond poorly to the treatment for conventional germ cell malignancy.16 Some somatic malignancies may respond to a specific chemotherapy that is effective for the specific subtype, so accurate subtyping of the somatic transformation is important.  **WHO classification of tumours of the testis and paratesticular tissuea1**  Descriptor / ICD-O codes  **Germ cell tumours derived from germ cell neoplasia in situ (GCNIS)**  *Non-invasive germ cell neoplasia*  Germ cell neoplasia in situ 9064/2  Specific forms of intratubular germ cell neoplasia  Tumours of one histological type (pure tumours)  Seminoma 9061/3  Seminoma with syncytiotrophoblast cells  Non-seminomatous germ cell tumours  Embryonal carcinoma 9070/3  Yolk sac tumour, postpubertal-type 9071/3  Trophoblastic tumours  Choriocarcinoma 9100/3  Non-choriocarcinomatous trophoblastic tumours  Placental site trophoblastic tumour 9104/3  Epithelioid trophoblastic tumour 9105/3  Cystic trophoblastic tumour  Teratoma, postpubertal-type 9080/3  Teratoma with somatic-type malignancies 9084/3  *Non-seminomatous germ cell tumours of more than one histological type*  Mixed germ cell tumours 9085/3  *Germ cell tumours of unknown type*  Regressed germ cell tumours 9080/1  **Germ cell tumours unrelated to germ cell neoplasia in situ**  Spermatocytic tumour 9063/3  Teratoma, prepubertal type 9084/0  Dermoid cyst  Epidermoid cyst  Well-differentiated neuroendocrine tumour (monodermal teratoma) 8240/3  Mixed teratoma and yolk sac tumour, prepubertal-type 9085/3  Yolk sac tumour, prepubertal-type 9071/3  **Sex cord-stromal tumours**  *Pure tumours*  Leydig cell tumour 8650/1  Malignant Leydig cell tumour 8650/3  Sertoli cell tumour 8640/1  Malignant Sertoli cell tumour 8640/3  Large cell calcifying Sertoli cell tumour 8642/1  Intratubular large cell hyalinizing Sertoli cell tumour 8643/1  Granulosa cell tumour  Adult granulosa cell tumour 8620/1  Juvenile granulosa cell tumour 8622/0  Tumours in the fibroma-thecoma group 8600/0  *Mixed and unclassified sex cord-stromal tumours*  Mixed sex cord-stromal tumour 8592/1  Unclassified sex cord-stromal tumour 8591/1  **Tumour containing both germ cell and sex cord-stromal elements**  Gonadoblastoma 9073/1  a The morphology codes are from the International Classification of Diseases for Oncology (ICD-O). Behaviour is coded /0 for benign tumours; /1 for unspecified, borderline, or uncertain behaviour; /2 for carcinoma in situ and grade III intraepithelial neoplasia; and /3 for malignant tumours.  © WHO/International Agency for Research on Cancer (IARC). Reproduced with permission  References  1 World Health Organization (2016). World Health Organization (WHO) Classification of tumours. Pathology and genetics of the urinary system and male genital organs. Moch H, Humphrey PA, Reuter VE, Ulbright TM. IARC Press, Lyon, France.  2 Daneshmand S, Albers P, Fossa SD, Heidenreich A, Kollmannsberger C, Krege S, Nichols C, Oldenburg J and Wood L (2012). Contemporary management of postchemotherapy testis cancer. Eur Urol 62(5):867-876.  3 Hendry J, Fraser S, White J, Rajan P and Hendry DS (2015). Retroperitoneal lymph node dissection (RPLND) for malignant phenotype Leydig cell tumours of the testis: a 10-year experience. Springerplus 4:20.  4 Riggs SB, Burgess EF, Gaston KE, Merwarth CA and Raghavan D (2014). Postchemotherapy surgery for germ cell tumors--what have we learned in 35 years? Oncologist 19(5):498-506.  5 Ulbright TM, Henley JD, Cummings OW, Foster RS and Cheng L (2004). Cystic trophoblastic tumor: a nonaggressive lesion in postchemotherapy resections of patients with testicular germ cell tumors. Am J Surg Pathol 28(9):1212-1216.  6 Howitt BE, Magers MJ, Rice KR, Cole CD and Ulbright TM (2015). Many postchemotherapy sarcomatous tumors in patients with testicular germ cell tumors are sarcomatoid yolk sac tumors: a study of 33 cases. Am J Surg Pathol 39(2):251-259.  7 Rice KR, Magers MJ, Beck SD, Cary KC, Einhorn LH, Ulbright TM and Foster RS (2014). Management of germ cell tumors with somatic type malignancy: pathological features, prognostic factors and survival outcomes. J Urol 192(5):1403-1409.  8 Berney DM, Shamash J, Hendry WF, Arora A, Jordan S and Oliver RT (2001). Prediction of relapse after lymph node dissection for germ cell tumours: can salvage chemotherapy be avoided? Br J Cancer 84(3):340-343.  9 Fox EP, Weathers TD, Williams SD, Loehrer PJ, Ulbright TM, Donohue JP and Einhorn LH (1993). Outcome analysis for patients with persistent nonteratomatous germ cell tumor in postchemotherapy retroperitoneal lymph node dissections. J Clin Oncol 11(7):1294-1299.  10 Fizazi K, Tjulandin S, Salvioni R, Germa-Lluch JR, Bouzy J, Ragan D, Bokemeyer C, Gerl A, Flechon A, de Bono JS, Stenning S, Horwich A, Pont J, Albers P, De Giorgi U, Bower M, Bulanov A, Pizzocaro G, Aparicio J, Nichols CR, Theodore C, Hartmann JT, Schmoll HJ, Kaye SB, Culine S, Droz JP and Mahe C (2001). Viable malignant cells after primary chemotherapy for disseminated nonseminomatous germ cell tumors: prognostic factors and role of postsurgery chemotherapy--results from an international study group. J Clin Oncol 19(10):2647-2657.  11 Fizazi K, Oldenburg J, Dunant A, Chen I, Salvioni R, Hartmann JT, De Santis M, Daugaard G, Flechon A, de Giorgi U, Tjulandin S, Schmoll HJ, Bouzy J, Fossa SD and Fromont G (2008). Assessing prognosis and optimizing treatment in patients with postchemotherapy viable nonseminomatous germ-cell tumors (NSGCT): results of the sCR2 international study. Ann Oncol 19(2):259-264.  12 Magers MJ, Kao CS, Cole CD, Rice KR, Foster RS, Einhorn LH and Ulbright TM (2014). "Somatic-type" malignancies arising from testicular germ cell tumors: a clinicopathologic study of 124 cases with emphasis on glandular tumors supporting frequent yolk sac tumor origin. Am J Surg Pathol 38(10):1396-1409.  13 Michael H, Hull MT, Ulbright TM, Foster RS and Miller KD (1997). Primitive neuroectodermal tumors arising in testicular germ cell neoplasms. Am J Surg Pathol 21(8):896-904.  14 Giannatempo P, Pond GR, Sonpavde G, Albany C, Loriot Y, Sweeney CJ, Salvioni R, Colecchia M, Nicolai N, Raggi D, Rice KR, Flack CK, El Mouallem NR, Feldman H, Fizazi K, Einhorn LH, Foster RS, Necchi A and Cary C (2015). Treatment and clinical outcomes of patients with teratoma with somatic-type malignant transformation: an International collaboration. J Urol.  15 Michael H, Hull MT, Foster RS, Sweeney CJ and Ulbright TM (1998). Nephroblastoma-like tumors in patients with testicular germ cell tumors. Am J Surg Pathol 22(9):1107-1114.  16 Motzer RJ, Amsterdam A, Prieto V, Sheinfeld J, Murty VV, Mazumdar M, Bosl GJ, Chaganti RS and Reuter VE (1998). Teratoma with malignant transformation: diverse malignant histologies arising in men with germ cell tumors. J Urol 159(1):133-138. | Value list from the World Health Organisation Classification of tumours. Pathology and genetics of urinary system and male genital organs (2016).  Note that permission to publish the WHO classification of tumours may be needed in your implementation. It is advisable to check with the International Agency for Research on Cancer (IARC). |
| Required and Recommended | MARGIN STATUS | Single selection value list: • Cannot be assessed  • Not involved  Recommended/Text/ Numeric  o Closest margin  o Distance of tumour from closest margin \_\_\_ mm  • Involved, specify | Complete resection of viable ‘malignant’ germ cell elements is an important prognostic factor in retroperitoneal lymphadenectomy (RPLND) and therefore is a required element. It is therefore important to liaise with the surgeon to ensure that all margins are true margins, especially when adjacent lymph nodes/tissue is removed individually. Use of marking sutures may be useful in these circumstances to indicate orientation.1-5  References  1 Fizazi K, Tjulandin S, Salvioni R, Germa-Lluch JR, Bouzy J, Ragan D, Bokemeyer C, Gerl A, Flechon A, de Bono JS, Stenning S, Horwich A, Pont J, Albers P, De Giorgi U, Bower M, Bulanov A, Pizzocaro G, Aparicio J, Nichols CR, Theodore C, Hartmann JT, Schmoll HJ, Kaye SB, Culine S, Droz JP and Mahe C (2001). Viable malignant cells after primary chemotherapy for disseminated nonseminomatous germ cell tumors: prognostic factors and role of postsurgery chemotherapy--results from an international study group. J Clin Oncol 19(10):2647-2657.  2 Hendry WF, Norman AR, Dearnaley DP, Fisher C, Nicholls J, Huddart RA and Horwich A (2002). Metastatic nonseminomatous germ cell tumors of the testis: results of elective and salvage surgery for patients with residual retroperitoneal masses. Cancer 94(6):1668-1676.  3 Heidenreich A, Ohlmann C, Hegele A and Beyer J (2005). Repeat retroperitoneal lymphadenectomy in advanced testicular cancer. Eur Urol 47(1):64-71.  4 McKiernan JM, Motzer RJ, Bajorin DF, Bacik J, Bosl GJ and Sheinfeld J (2003). Reoperative retroperitoneal surgery for nonseminomatous germ cell tumor: clinical presentation, patterns of recurrence, and outcome. Urology 62(4):732-736.  5 Fizazi K, Oldenburg J, Dunant A, Chen I, Salvioni R, Hartmann JT, De Santis M, Daugaard G, Flechon A, de Giorgi U, Tjulandin S, Schmoll HJ, Bouzy J, Fossa SD and Fromont G (2008). Assessing prognosis and optimizing treatment in patients with postchemotherapy viable nonseminomatous germ-cell tumors (NSGCT): results of the sCR2 international study. Ann Oncol 19(2):259-264. |  |
| Required | EXTRANODAL EXTENSION | Single selection value list: • Not identified  • Present  • Indeterminate | The detection of extranodal extension of disease has been studied in a number of publications, and although some have shown it to be a poor prognostic indicator, this may not be independently significant of other prognostic parameters such as tumour size, incomplete excision and type of tumour. However, in the TNM staging it upstages from pN1 to pN2 and is utilised as a cut off point for the decision on further chemotherapy.1,2  References  1 Al-Ahmadie HA, Carver BS, Cronin AM, Olgac S, Tickoo SK, Fine SW, Gopalan A, Stasi J, Rabbani F, Bosl GJ, Sheinfeld J and Reuter VE (2013). Primary retroperitoneal lymph node dissection in low-stage testicular germ cell tumors: a detailed pathologic study with clinical outcome analysis with special emphasis on patients who did not receive adjuvant therapy. Urology 82(6):1341-1346.  2 Beck SD, Cheng L, Bihrle R, Donohue JP and Foster RS (2007). Does the presence of extranodal extension in pathological stage B1 nonseminomatous germ cell tumor necessitate adjuvant chemotherapy? J Urol 177(3):944-946. |  |
| Required | PATHOLOGICAL STAGING (TNM 8th edition)  Regional lymph nodes (pN) | Single selection value list:  • NX Regional lymph nodes cannot be assessed  • N0 No regional lymph node metastasis  • N1 Metastasis with a lymph node mass 2 cm or smaller in greatest dimension and less than or equal to five nodes positive, none larger than 2 cm in greatest dimension  • N2 Metastasis with a lymph node mass larger than 2 cm but not larger than 5 cm in greatest dimension; or more than five nodes positive, none larger than 5 cm; or evidence of extranodal extension of tumour  • N3 Metastasis with a lymph node mass larger than 5 cm in greatest dimension | This dataset includes the American Joint Committee on Cancer (AJCC) TNM 8th edition definitions. 1 The implementation of AJCC TNM 8th edition has been deferred until January 2018 in some jurisdictions. AJCC 7th edition2 and UICC 7th edition3 may be useful in the interim. Although significant differences exist between the AJCC and UICC 8th editions for primary testicular tumours, there are no such differences for pre or post treatment metastasis resections. These required elements will depend on the nature of the resected specimens. Although most postchemotherapy resections are of lymph node groups, usually in the retroperitoneum, there are occasional resections of other post-chemotherapy specimens from the lung, brain, liver or other sites. Most, but not all of these specimens will either be of teratoma or show necrosis. All nonlymphoid sites should be classified under M. An alternative method of staging which may be used is the Royal Marsden method (see below), which has been suggested in some studies to be more prognostically significant and helpful in guiding further therapy than TNM and it is included below as it is requested by some oncological centres.2-4  **TNM8 Descriptors for RPLNDs and other metastatic resections of primary testicular neoplasms1**  **Regional lymph nodes (pN)**  The regional lymph nodes are the abdominal para-aortic (peri-aortic), pre-aortic, interaortocaval  precaval, paracaval, retrocaval, and retro-aortic 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 smaller in greatest dimension and less than or  equal to five nodes positive, none larger than 2 cm in greatest dimension.  pN2 Metastasis with a lymph node mass larger than 2 cm but not larger than 5 cm in greatest  dimension; or more than five nodes positive, none larger than 5 cm; or evidence of  extranodal extension of tumour.  pN3 Metastasis with a lymph node mass larger than 5 cm in greatest dimension.  **Distant metastasis (pM)** (if resected)  No distant metastases  pM1 Distant metastasis.  pM1a Non-retroperitoneal nodal or pulmonary metastases.  pM1b Non-pulmonary visceral metastases.  A “y” prefix indicates those cases in which classification is performed during or following initial multimodality therapy (i.e., chemotherapy, radiation therapy, or both chemotherapy and radiation therapy).  Modified Royal Marsden Staging System  Stage I Tumour confined to the testis  Stage II Infradiaphragmatic nodal involvement  IIA greatest dimension of involved nodes less than 2 cm  IIB greatest dimension of involved nodes 2 cm or more but less than 5 cm  IIC greatest dimension of involved nodes 5 cm or more but less than 10 cm  IID greatest dimension of involved nodes 10 cm or more  Stage III Supraclavicular or mediastinal involvement  Stage IV Extranodal metastases  References  1 Amin M.B., Edge, S., Greene, F.L., Byrd, D.R., Brookland, R.K., Washington, M.K., Gershenwald, J.E., Compton, C.C., Hess, K.R., Sullivan, D.C., Jessup, J.M., Brierley, J.D., Gaspar, L.E., Schilsky, R.L., Balch, C.M., Winchester, D.P., Asare, E.A., Madera, M., Gress, D.M., Meyer, L.R. (Eds.) (2017). AJCC Cancer Staging Manual 8th ed. Springer, New York.  2 Edge SE, Byrd DR, Compton CC, Fritz AG, Greene FL and Trotti A (eds) (2010). AJCC Cancer Staging Manual 7th ed., New York, NY.: Springer.  3 International Union against Cancer (UICC) (2009). TNM Classification of Malignant Tumours (7th edition). Sobin L, Gospodarowicz M and Wittekind C (eds).Wiley-Blackwell, Chichester, UK and Hoboken, New Jersey.  4 Thomas G, Jones W, VanOosterom A and Kawai T (1990). Consensus statement on the investigation and management of testicular seminoma 1989. Prog Clin Biol Res 357:285-294. | Note that permission to publish the TNM cancer staging tables may be needed in your implementation. It is advisable to check. |
| Required | Distant metastasis (pM) (if resected) | Single selection value list:  • No distant metastases  • M1 Distant metastasis  • M1a Non-retroperitoneal nodal or pulmonary metastases  • M1b Non-pulmonary visceral metastases |  |  |