| **Required/ Recommended** | **Element name** | **Values** | **Commentary** | **Implementation notes** |
| --- | --- | --- | --- | --- |
| Recommended | CLINICAL INFORMATION | Not provided  OR  Multi selection value list (select all that apply): •Previous history of prostate cancer (including the Gleason grade and score of previous specimens if known) • Previous biopsy, specify date and where performed • Previous therapy, specify  • Other, specify | It is the responsibility of the clinician requesting the pathological examination to provide information that will have an impact on the diagnostic process or affect its interpretation. The use of a standard pathology requisition/request form including a checklist of important clinical information is encouraged to help ensure that relevant clinical data is provided by the clinicians with the specimen. Generally, information about pathological findings in prior specimens or previous treatment aids interpretation of the microscopic findings and accurate pathological diagnosis. Radiation and/or endocrine therapy for prostate cancer have a profound effect on the morphology of both cancer and benign prostatic tissue. Following irradiation, benign acinar epithelium shows nuclear enlargement and nucleolar prominence, 1 while basal cells may show cytological atypia, nuclear enlargement and nuclear smudging. 2 There may also be increased stromal fibrosis, which may resemble tumour-induced desmoplasia. These changes may persist for a considerable period, having been reported up to 72 months after treatment, and are more pronounced in patients who have undergone brachytherapy compared to those who have received external beam radiation therapy.2,3 It is important to document any previous radiotherapy to help the pathologist to interpret changes accurately. Radiation may be associated with apparent upgrading of prostate cancer in prostatectomy specimens. 4 Likewise, neoadjuvant androgen deprivation therapy (ADT) may induce morphological changes in both prostate cancer and benign tissue. Androgen blockade induces basal cell hyperplasia and cytoplasmic vacuolation in benign prostatic tissue, although this is unlikely to be confused with malignancy. 5 More significantly from a diagnostic point of view, neoadjuvant ADT may increase the risk of overlooking acinar adenocarcinoma on low power microscopic examination due to collapse of glandular lumina, cytoplasmic pallor and shrinking of nuclei.6-8 The effect of androgen blockage on prostate cancer is variable and an apparent upgrading of the cancer has been reported in a number of studies.4,5 As for needle core biopsies, in transurethral resection or enucleation specimens taken following either radiotherapy or androgen deprivation therapy, tumours that show significant treatment effect should not be graded.9 The Gleason score of prostate cancer in any previously submitted specimen should also be provided by the clinician as this allows assessment of any progression of the tumour towards a higher grade/ more undifferentiated state, which itself may be of prognostic significance.  References  1 Cheng L, Cheville JC and Bostwick DG (1999). Diagnosis of prostate cancer in needle biopsies after radiation therapy. Am J Surg Pathol 23(10):1173–1183.  2 Magi-Galluzzi C, Sanderson HBS and Epstein JI (2003). Atypia in non-neoplastic prostate glands after radiotherapy for prostate cancer: duration of atypia and relation to type of radiotherapy. Am J Surg Pathol 27:206–212.  3 Herr HW and Whitmore WF, Jr (1982). Significance of prostatic biopsies after radiation therapy for carcinoma of the prostate. Prostate 3(4):339–350.  4 Grignon DJ and Sakr WA (1995). Histologic effects of radiation therapy and total androgen blockage on prostate cancer. Cancer 75:1837–1841.  5 Vailancourt L, Ttu B, Fradet Y, Dupont A, Gomez J, Cusan L, Suburu ER, Diamond P, Candas B and Labrie F (1996). Effect of neoadjuvant endocrine therapy (combined androgen blockade) on normal prostate and prostatic carcinoma. A randomized study. Am J Surg Pathol 20(1):86–93.  6 Montironi R, Magi-Galluzzi C, Muzzonigro G, Prete E, Polito M and Fabris G (1994). Effects of combination endocrine treatment on normal prostate, prostatic intraepithelial neoplasia, and prostatic adenocarcinoma. J Clin Pathol 47(10):906-913.  7 Civantos F, Marcial MA, Banks ER, Ho CK, Speights VO, Drew PA, Murphy WM and Soloway MS (1995). Pathology of androgen deprivation therapy in prostate carcinoma. A comparative study of 173 patients. Cancer 75(7):1634-1641.  8 Bostwick DG and Meiers I (2007). Diagnosis of prostatic carcinoma after therapy. Arch Pathol Lab Med 131(3):360-371.  9 Epstein JI and Yang XJ (2002). Benign and malignant prostate following treatment. In: Prostate Biopsy Interpretation, Lippincott Williams and Wilkins, Philadelphia, Pennsylvania, 209–225. |  |
| Recommended | PRE-PROCEDURE SERUM PSA | Numeric:  • \_\_\_ ng/mL | The clinician requesting the pathological examination should provide information on the pretransurethral resection/enucleation serum prostate-specific antigen (PSA) level, if measured. The use of a standard pathology requisition/request form including a checklist of important clinical information is strongly encouraged to help ensure that relevant clinical data is provided by the clinicians with the specimen and its use. If the patient is on 5-alpha-reductase inhibitor medications, such as finasteride or dutasteride, this should be recorded as it may lower serum PSA levels and affect interpretation of serum PSA values for detecting prostate cancer.1-4  References  1 Guess HA, Gormley GJ, Stoner E and Oesterling JE (1996). The effect of finasteride on prostate specific antigen: review of available data. J Urol 155(1):3-9.  2 Oesterling JE, Roy J, Agha A, Shown T, Krarup T, Johansen T, Lagerkvist M, Gormley G, Bach M and Waldstreicher J (1997). Biologic variability of prostate-specific antigen and its usefulness as a marker for prostate cancer: effects of finasteride. The Finasteride PSA Study Group. Urology 50(1):13-18.  3 Marberger M, Freedland SJ, Andriole GL, Emberton M, Pettaway C, Montorsi F, Teloken C, Rittmaster RS, Somerville MC and Castro R (2012). Usefulness of prostate-specific antigen (PSA) rise as a marker of prostate cancer in men treated with dutasteride: lessons from the REDUCE study. BJU Int 109(8):1162-1169.  4 Andriole GL, Humphrey P, Ray P, Gleave ME, Trachtenberg J, Thomas LN, Lazier CB and Rittmaster RS (2004). Effect of the dual 5alpha-reductase inhibitor dutasteride on markers of tumor regression in prostate cancer. J Urol 172(3):915-919. |  |
| Recommended | CLINICAL STAGE | Text | In the large majority of cases these procedures are performed for the relief of benign prostatic hyperplasia when it is not anticipated that there will be a cancer present and clinical stage is not applicable; if cancer is found on microscopic examination in this situation it will be assigned to category T1. In the small number of cases in which it is known that there is cancer present, a transurethral resection of the prostate may be done to relieve an obstruction where a patient is not amenable to other procedures. In these cases, the clinical stage may be more relevant. |  |
| Required | OPERATIVE PROCEDURE | Single selection value list:  • Not specified • Transurethral resection  • Enucleation (suprapubic/simple/open prostatectomy)  • Other, *specify* | Information regarding the nature of the surgical procedure undertaken is generally regarded as a required item in International Collaboration on Cancer Reporting (ICCR) datasets since it allows the morphological findings to be placed in context. |  |
| Required | SPECIMEN WEIGHT | Numeric: • \_\_\_ g | The specimen weight is the best estimate of the amount of tissue resected and received by the pathology laboratory for examination and current histological sampling guidelines are based on this parameter.1 The specimen may be weighed in either the operating theatre or in the pathology laboratory.  References  1 Trpkov K TJ, Kulaga A, Yilmaz A (2008). How much tissue sampling is required when unsuspected minimal prostate carcinoma is identified on transurethral resection. Arch Path Lab Med. 132:1313-1316. |  |
| Recommended | SPECIMEN DIMENSIONS | Numeric: • \_\_\_ mm x \_\_\_ mm x \_\_\_mm | Information regarding the size of the specimen received is generally regarded as either a recommended or required item in International Collaboration on Cancer Reporting (ICCR) datasets, since it documents the tissue actually received by the pathology laboratory and upon which the diagnostic and prognostic information is based. Enucleation (suprapubic/simple/open prostatectomy specimens) are often received in pieces and only the largest piece or pieces need to be measured. | Enucleation/ suprapubic/ open prostatectomy specimens only. |
| Recommended | BLOCK IDENTIFICATION KEY | Text | Information regarding the nature of the surgical procedure undertaken is generally regarded as a recommended item in International Collaboration on Cancer Reporting (ICCR) datasets since it facilitates internal and external case review. Although a reviewer does not need information about the origin of each block in a transurethral resection specimen in order to provide an informed specialist opinion, such data may be more useful in enucleation specimens. Moreover, recording the origin/designation of tissue blocks facilitates retrieval of blocks, for example for further immunohistochemical or molecular analysis, research studies or clinical trials. | 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): • Adenocarcinoma (Acinar, usual type)  • Other, specify | The vast majority (>95%) of prostate cancers are acinar adenocarcinomas.1 Other types of carcinoma are rarer but must be recorded if present, since some variants, such as ductal adenocarcinoma, small cell carcinoma, sarcomatoid carcinoma and urothelial-type adenocarcinoma, have a significantly poorer prognosis.1-7 The tumour type should be assigned in line with the 2016 World Health Organisation (WHO) classification and mixtures of different types should be indicated.1 Subtypes of prostate carcinoma are often identified in combination with acinar type and in such cases the tumour type should be classified according to the subtype.  **WHO classification of tumours of the prostatea1**  Descriptor /ICD-O codes  **Epithelial tumours**  *Glandular neoplasms*  Acinar adenocarcinoma 8140/3  Atrophic  Pseudohyperplastic  Microcystic  Foamy gland  Mucinous (colloid) 8480/3  Signet ring-like cell 8490/3  Pleomorphic giant cell  Sarcomatoid 8572/3  Prostatic intraepithelial neoplasia, high-grade 8148/2  Intraductal carcinoma 8500/2  Ductal adenocarcinoma 8500/3  Cribiform 8201/3  Papillary 8260/3  Solid 8230/3  Urothelial carcinoma 8120/3  *Squamous neoplasms*  Adenosquamous carcinoma 8560/3  Squamous cell carcinoma 8070/3  Basal cell carcinoma 8147/3  **Neuroendocrine tumours**  Adenocarcinoma with neuroendocrine differentiation 8574/3  Well-differentiated neuroendocrine tumour 8240/3  Small cell neuroendocrine carcinoma 8041/3  Large cell neuroendocrine carcinoma 8013/3  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 Urothelial carcinomas arising in the bladder or urethra are dealt with in separate datasets; however, those rare urothelial carcinomas arising within the prostate are included in this dataset.  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 Christensen WN, Steinberg G, Walsh PC and Epstein JI (1991). Prostatic duct adenocarcinoma. Findings at radical prostatectomy. Cancer 67(8):2118-2124.  3 Rubenstein JH, Katin MJ, Mangano MM, Dauphin J, Salenius SA, Dosoretz DE and Blitzer PH (1997). Small cell anaplastic carcinoma of the prostate: seven new cases, review of the literature, and discussion of a therapeutic strategy. Am J Clin Oncol 20:376-380.  4 Dundore PA, Cheville JC, Nascimento AG, Farrow GM and Bostwick DG (1995). Carcinosarcoma of the prostate. Report of 21 cases. Cancer 76:1035-1042.  5 Hansel DE and Epstein JI (2006). Sarcomatoid carcinoma of the prostate. A study of 42 cases. Am J Surg Pathol 30:1316-1321.  6 Osunkoya AO and Epstein JI (2007). Primary mucin-producing urothelial-type adenocarcinoma of prostate: report of 15 cases. Am J Surg Pathol 31:1323-1329.  7 Curtis MW, Evans AJ and Srigley J (2005). Mucin-producing urothelial-type adenocarcinoma of prostate: report of two cases of a rare and diagnostically challenging entity. Mod Pathol 18:585-590. | 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 | HISTOLOGICAL GRADE | **Gleason score:**  Single selection value list:  Primary pattern/grade:  • 1  • 2  • 3  • 4  • 5  Secondary pattern/grade:  • 1  • 2  • 3  • 4  •5  o Indeterminate, specify reason  **International Society of Urological Pathology (ISUP) Grade (Grade Group)**  Single selection value list:  •ISUP Grade (Grade Group) 1 (Gleason score ≤6)  • ISUP Grade (Grade Group) 2 (Gleason score 3+4=7)  • ISUP Grade (Grade Group) 3 (Gleason score 4+3=7)  • ISUP Grade (Grade Group) 4 (Gleason score 8)  • ISUP Grade (Group Group) 5 (Gleason score 9-10)  • Indeterminate, specify reason  Recommended: Numeric /single select  **Percentage Gleason pattern 4/5 (applicable for Gleason scores ≥7)**  \_\_%  OR  • Not identified | Prostate cancer in transurethral resection specimens is graded according to similar principles as in needle core biopsies since, like needle biopsies, transurethral resection of the prostate (TURP) does not sample the entire tumour. Since transurethral resection of the prostate mainly samples the transition zone, cancers arising in this part of the prostate are over-represented in TURP specimens. However, peripheral zone tissue is sometimes also resected and large peripheral zone cancers may involve the transition zone. Thus, TURP specimens include the same spectrum of cancers as needle biopsies, albeit with a different distribution. For example, small low-grade transition zone cancers are more often detected by TURP than by needle biopsies. It has been demonstrated that the Gleason score of cancer detected at TURP predicts cancer-specific survival1,2 and local progression. 3 Grading of cancer in TURP specimens was not specifically addressed in the International Society of Urological Pathology (ISUP) 2005 revision. In one study however, conventional Gleason score was compared to modified Gleason score including the highest Gleason grade regardless of amount.1 Both were independent predictors of cancer-specific survival in multivariate analysis but conventional Gleason score showed slightly stronger correlation with outcome. No studies have been done on the validity of the ISUP 2014 grading system on TURP detected cancer but there is no reason to assume that this grading would not be valid when applied on TURP specimens. Moreover, the issue of how to deal with tertiary patterns is unresolved as there is not enough evidence at present to prove its validity. It is therefore required that the ISUP grade (Grade group) should be reported together with the Gleason score. Percent Gleason patterns 4 and 5 has been reported to predict cancer-specific survival independently of Gleason score.1 TURP is sometimes done for palliative reasons in patients with locally advanced prostate cancer. These cancers have usually been treated with androgen deprivation and a common reason for the TURP is that the tumour has become hormone refractory. It is important that information about the hormonal treatment is given on the request form. Prostate cancer showing morphological signs of hormonal treatment should not be graded as the treatment effect can mimic a higher grade. However, these tumours are almost invariably high-grade cancers. The grade groups and associated definitions are outlined in Table 1. Both the Gleason score and the ISUP grade (Grade group) should always be reported for the sake of clarity.  **Table 1: ISUP grading system, core/needle biopsies and TURP specimens**  ISUP grade / (Grade group) Gleason score / Definition  Grade 1 / 2-6 / Only individual discrete well-formed glands  Grade 2 / 3+4=7 / Predominantly well-formed glands with lesser component (\*) of poorly- formed/fused/cribriform glands  Grade 3 / 4+3=7 / Predominantly poorly-formed/fused/cribriform glands with lesser component (\*\*) of well-formed glands  Grade 4 / 4+4=8 / Only poorly-formed/fused/cribriform glands  3+5=8 / Predominantly well-formed glands and lesser component (\*) lacking glands (or with necrosis)  5+3=8 / Predominantly lacking glands and lesser component (\*\*) of well-formed glands (or with necrosis) Grade 5 / 9-10 / Lack gland formation (or with necrosis) with or without poorly formed/fused/cribriform glands  \* Any component of the high-grade pattern (i.e. even if less than 5%) is included in the grade.  \*\* The low-grade pattern is included in the grade only if it is at least 5%.  References  1 Egevad L, Granfors T, Karlberg L, Bergh A and Stattin P (2002). Percent Gleason grade 4/5 as prognostic factor in prostate cancer diagnosed at transurethral resection. Journal of Urology 168(2):509–513.  2 Cuzick J, Fisher G, Kattan MW, Berney D, Oliver T, Foster CS, Moller H, Reuter V, Fearn P, Eastham J and Scardino P (2006). Long-term outcome among men with conservatively treated localised prostate cancer. Br J Cancer 95(9):1186-1194.  3 Eastham JA, Kattan MW, Fearn P, Fisher G, Berney DM, Oliver T, Foster CS, Moller H, Reuter V, Cuzick J and Scardino P (2008). Local progression among men with conservatively treated localized prostate cancer: results from the Transatlantic Prostate Group. Eur Urol 53(2):347- 354. |  |
| Required | PROSTATIC TISSUE INVOLVED BY TUMOUR | Numeric:  \_\_% Prostatic tissue involved by tumour measured on the basis of area (TURP or enucleation/suprapubic prostatectomy specimens)  OR  \_\_% Prostatic tissue involved by tumour measured on the basis of number of chips (TURP specimens only) |  | Should be an estimate <5% and then 10% increments. |
| Recommended | PERINEURAL INVASION | Single selection value list: • Not identified • Present | The significance of perineural invasion in prostate transurethral resection of the prostate (TURP) or enucleation specimens is uncertain and there is little published literature specific to these particular specimen types. In needle core biopsy a systematic review of the literature concluded that the weight of evidence suggested that in clinically localised disease perineural invasion was a significant prognostic factor for extraprostatic extension (EPE) and subsequent local recurrence.1 Hence, it may be significant and perineural invasion should be recorded when present in TURP and enucleation specimens.  References  1 Harnden P, Shelley MD and Clements H et al (2007). The prognostic significance of perineural invasion in prostate cancer biopsies. A systemic review. Cancer 109:13-24. |  |
| Recommended | SEMINAL VESICLE INVASION | Single selection value list: • Not identified  • Present | Seminal vesicle invasion (SVI) is rarely identified in transurethral resection (TUR) specimens, hence its absence does not need to be explicitly stated. However, if seminal vesicle/ejaculatory duct invasion is present it should be recorded and the following comments apply. SVI is defined as involvement of the muscular wall of the extraprostatic portion of the seminal vesicle.1 If seminal vesicle tissue is present and involved by tumour, this should be reported since it indicates that the tumour may be pT3b in the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC) Staging system.2,3 However, in transurethral resection of the prostate (TURP) and enucleation specimens it is often difficult to distinguish between extraprostatic seminal vesicle and intraprostatic seminal vesicle or ejaculatory duct tissue, and it is important not to over interpret invasion of the latter two structures as SVI since their involvement by tumour does not constitute pT3b disease. If there is doubt as to whether the involved tissue represents the extraprostatic seminal vesicle or the intraprostatic seminal vesicle/ejaculatory duct, this should be stated in the report and SVI should not be definitively diagnosed.  References  1 Berney DM, Wheeler TM, Grignon DJ, Epstein JI, Griffiths DF, Humphrey PA, van der Kwast T, Montironi R, Delahunt B, Egevad L, Srigley JR and ISUP Prostate Cancer Group (2011). International Society of Urological Pathology (ISUP) consensus conference on handling and staging of radical prostatectomy specimens. Working group 4: seminal vesicles and lymph nodes. Mod Pathol 24:39-47.  2 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.  3 Brierley JD, Gospodarowicz MK, Wittekind C (eds) (2016). UICC TNM Classification of Malignant Tumours, 8th Edition. Wiley-Blackwell. |  |
| Recommended | LYMPHOVASCULAR INVASION | Single selection value list: • Not identified  • Present | Lymphovascular invasion (LVI) is rarely identified in transurethral resection (TUR) specimens, hence its absence does not need to be explicitly stated. However, if LVI is present it should be recorded and the following comments apply. Invasion of lymphatic or blood vessels (i.e. thin-walled endothelial-lined spaces) is uncommonly identified in transurethral resection or enucleation specimens and there is little published data on the significance of LVI specifically relating to tissue obtained during these procedures. However, there is good evidence that LVI is a significant independent prognostic indicator of increased risk of recurrence post radical prostatectomy;1-4 therefore, if LVI is identified in a TUR/enucleation specimen it may well be significant and its presence should be recorded. The presence of LVI does not affect assignment of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC ) T category.  References  1 Herman CM, Wilcox GE, Kattan MW, Scardino PT and Wheeler TM (2000). Lymphovascular invasion as a predictor of disease progression in prostate cancer. Am J Surg Pathol 24(6):859–863.  2 Cheng L, Jones TD, Lin H, Eble JN, Zeng G, Carr MD and Koch MO (2005). Lymphovascular invasion is an independent prognostic factor in prostatic adenocarcinoma. J Urol 174(6):2181–2185.  3 Yee DS, Shariat SF, Lowrance WT, Maschino AC, Savage CJ, Cronin AM, Scardino PT and Eastham JA (2011). Prognostic significance of lymphovascular invasion in radical prostatectomy specimens. BJU Int 108:502-507.  4 May M, Kaufmann O, Hammermann F, Loy V and Siegsmund M (2007). Prognostic impact of lymphovascular invasion in radical prostatectomy specimens. BJU Int 99(3):539-544. |  |
| Recommended | EXTRAPROSTATIC EXTENSION | Single selection value list: • Not identified  • Present  • Indeterminate | Extraprostatic extension (EPE) became accepted terminology at a 1996 consensus conference, and replaces earlier ambiguous terms such capsular penetration, perforation, or invasion.1 In radical prostatectomy specimens EPE is an independent prognostic indicator of increased risk of recurrence post radical prostatectomy and is important in assignment of the American Joint Committee on Cancer (AJCC)/Union for International Cancer Control (UICC) T category.2,3 There is little data specifically on the significance of EPE in transurethral resection of the prostate (TURP) or enucleation specimens given that it is rarely identified; however, it may occasionally be seen and should be reported when present since it indicates that the tumour is at least pT3a in the TNM system. 4 In TURP specimens it is defined as tumour admixed with adipocytes. The presence of bladder neck smooth muscle involvement by carcinoma in a TURP specimen may indicate that the tumour is at least category pT3a. Typically it is a high grade cancer infiltrating among well-formed and thick smooth muscle bundles with absence of normal prostate glands or stroma. These bladder neck chips are often admixed with chips showing either cancer in the prostate or just normal prostate tissue.  References  1 Sakr WA, Wheeler TM, Blute M, Bodo M, Calle-Rodrigue R, Henson DE, Mostofi FK, Seiffert J, Wojno K and Zincke H (1996). Staging and reporting of prostate cancer-sampling of the radical prostatectomy specimen. Cancer 78(2):366–368.  2 Wheeler TM, Dillioglugil O, Kattan MW, Arakawa A, Soh S, Suyama K, Ohori M and Scardino PT (1998). Clinical and pathological significance of the level and extent of capsular invasion in clinical stage T1-2 prostate cancer. Hum Pathol 29(8):856–862.  3 Epstein JI, Partin AW, Sauvageot J and Walsh PC (1996). Prediction of progression following radical prostatectomy. A multivariate analysis of 721 men with long-term follow-up. Am J Surg Pathol 20(3):286–292.  4 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. |  |
| Recommended | INTRADUCTAL CARCINOMA OF PROSTATE | Single selection value list: • Not identified  • Present | Intraductal carcinoma of the prostate (IDC-P) is an uncommon finding in transurethral resection (TUR) specimens, hence its absence does not need to be explicitly stated. However, if IDC-P is present it should be recorded and the following comments apply. IDC-P is usually associated with invasive prostate cancer, however, occasionally isolated IDC-P is found without invasive carcinoma; this latter situation is rare and beyond the scope of this dataset. IDC-P has been well characterised at the histological and molecular levels over the past decade and its clinical significance is now also better understood.1 The diagnosis of IDC-P is based on morphology and the key criteria include: 1) large calibre glands that are more than twice the diameter of normal non-neoplastic peripheral glands; 2) preserved (at least focally) basal cells identified on H&E staining or with basal cell markers, such as p63, keratin 34βE12 and keratin 5/6, however, the use of immunohistochemistry to identify basal cells is optional, rather than mandatory, for the diagnosis of IDC-P); 3) significant nuclear atypia including enlargement and anisonucleosis; and 4) comedonecrosis, which is often but not always present.2,3 It is important to distinguish IDC-P from high grade prostatic intraepithelial neoplasia (HGPIN): compared to IDC-P, HGPIN has less architectural and cytological atypia, and cribriform HGPIN is rare. IDC-P is strongly associated with high volume, high grade invasive prostate carcinoma and metastatic disease, hence the presence of IDC-P in a transurethral resection of the prostate (TURP) specimen, even if invasive carcinoma cannot be identified, mandates either further investigation or definitive therapy (depending on the clinical situation).4-6 There was a strong consensus (82%) at the International Society of Urological Pathology (ISUP) consensus meeting (Chicago 2014) that IDC-P should not be assigned an ISUP or Gleason grade. 7  References  1 Zhou M (2013). Intraductal carcinoma of the prostate: the whole story. Pathology. 45(6):533-539.  2 Cohen RJ, Wheeler TM, Bonkhoff H and Rubin MA (2007). A proposal on the identification, histologic reporting, and implications of intraductal prostatic carcinoma. Arch Pathol Lab Med 131(7):1103-1109.  3 Guo CC and Epstein JI (2006 ). Intraductal carcinoma of the prostate on needle biopsy: Histologic features and clinical significance. Mod Pathol. 19(12):1528-1535.  4 Kovi J, Jackson MA and Heshmat MY (1985). Ductal spread in prostatic carcinoma. Cancer 56(7):1566-1573.  5 McNeal JE and Yemoto CE (1996). Spread of adenocarcinoma within prostatic ducts and acini. Morphologic and clinical correlations. Am J Surg Pathol 20(7):802-814.  6 Robinson BD and Epstein JI (2010). Intraductal carcinoma of the prostate without invasive carcinoma on needle biopsy: emphasis on radical prostatectomy findings. J Urol 184(4):1328-1333.  7 Epstein JI, Egevad L, Amin MB, Delahunt B, Srigley JR and Humphrey PA (2015). The 2014 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma: Definition of Grading Patterns and Proposal for a New Grading System. Am J Surg Pathol 40(2):244-52. | If no Intraductal carcinoma of prostate is present in any specimen, this need only be recorded once for the whole case. |
| Recommended | COEXISTENT PATHOLOGY | Single selection value list: • None identified  • Present, specify | In some cases clinical management decisions may be aided by knowledge of coexisting pathology, such as high grade prostatic intraepithelial neoplasia (HGPIN), glandular atypia suspicious for malignancy (atypical small acinar proliferation), prostatic urethral lesions, granulomatous prostatitis etc. If there is carcinoma present, the presence of HGPIN is generally not significant, except perhaps occasionally in the situation where the carcinoma is of very limited extent. Low grade PIN should not be reported. Likewise, if there is carcinoma present in a specimen, the presence of glandular atypia suspicious for malignancy (atypical small acinar proliferation) is generally not significant, except perhaps occasionally in the situation where the carcinoma is of very limited extent. In transurethral resection of the prostate (TURP) specimens where there is no cancer identified but atypical small aciner proliferation (ASAP) is present, the risk of carcinoma being present in subsequent specimens is not known, but in core biopsies is approximately 50%.1-4 Lesions of the prostatic urethra, e.g. urothelial carcinoma in situ (CIS), urethral polyps, nephrogenic adenoma, villous adenoma etc, should also be recorded if present. Active prostatitis and granulomatous prostatitis may cause a rise in serum prostate-specific antigen (PSA), although inflammatory lesions may coexist with carcinoma and it is important not to assume that their presence always accounts for an unexplained increase in a patient’s PSA.  References  1 Iczkowski KA, MacLennan GT and Bostwick DG (1997). Atypical small acinar proliferation suspicious for malignancy in prostate needle biopsies: clinical significance in 33 cases. Am J Surg Pathol 21(12):1489-1495.  2 Iczkowski KA, Chen HM, Yang XJ and Beach RA (2002). Prostate cancer diagnosed after initial biopsy with atypical small acinar proliferation suspicious for malignancy is similar to cancer found on initial biopsy. Urology 60(5):851-854. 3 Mancuso PA, Chabert C, Chin P, Kovac P, Skyring T, Watt WH and Napaki S (2007). Prostate cancer detection in men with an initial diagnosis of atypical small acinar proliferation. BJU Int 99(1):49-52.  4 Cheville JC, Reznicek MJ and Bostwick DG (1997). The focus of "atypical glands, suspicious for malignancy" in prostatic needle biopsy specimens: incidence, histologic features, and clinical follow-up of cases diagnosed in a community practice. Am J Clin Pathol 108(6):633- 640. |  |