Intraductal carcinoma of prostate (Recommended)

Reason/Evidentiary Support

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.