Histological grade (Required and Recommended)

Reason/Evidentiary Support

The Gleason score of radical prostatectomy specimens is usually obtained by adding the two predominant Gleason patterns/grades or doubling the pattern in cases with uniform grade. In the 2005 International Society of Urological Pathology (ISUP) revision it was recommended that this is done for each dominant tumour nodule(s).[1] The rationale was that additional separate tumours of lower grade (e.g. transition zone cancers) would not be expected to mitigate the prognostic impact of the main tumour and, thus, their grades should not be included in the overall Gleason score. Reporting of separate tumours may, however, be difficult in practice, if the prostatectomy specimen is not totally embedded and multifocal tumour nodules may merge into a single large tumour mass.

The ISUP 2005 Gleason grading modified the definitions for Gleason scoring of needle biopsies to always include the highest grade, regardless of its amount. It was recommended that minor (<5%) secondary or tertiary patterns of higher grade be included in the Gleason scores of biopsy specimens where there are 2 or 3 different patterns, respectively. The rationale behind this recommendation was that biopsies only sample a minor fraction of the tumour and reporting of small components of higher grade would indicate to the clinician that there might be more extensive involvement of high-grade disease elsewhere in the tumour. The issue of how to deal with a minor (<5%) secondary pattern of higher grade in radical prostatectomy specimens was not specifically addressed in the 2005 consensus conference. However, it was agreed that in radical prostatectomy specimens, where the Gleason score was composed of two most predominant grades, a minor (<5%) tertiary grade should be mentioned separately in the report. The grading practices for radical prostatectomy specimens currently vary and some pathologists would include a tertiary component of Gleason pattern 5 in the Gleason score, at least if more than 5%.

At the 2014 ISUP expert consultation meeting on Gleason grading, a grouping of the Gleason scores into 5 grade categories was proposed. Over the past decades Gleason scores below 6 have become less commonly used, especially on needle biopsies. There is also an understanding that Gleason score 7 tumours have a worse outcome if there is a predominant pattern 4 (4+3) than if pattern 3 dominates (3+4). In line with this, a recommendation has been issued to report the percentage of Gleason pattern 4 in cases with a Gleason score of 7 (ISUP grades 2 or 3). Some pathologists also report the percentage of Gleason pattern 4/5.

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.

At the 2014 ISUP expert consultation meeting it was not decided how tertiary patterns of higher grade be reported in radical prostatectomy specimens when applying the ISUP grading. By also reporting the Gleason score and tertiary Gleason patterns of higher grade this information is included.

Table 1: ISUP grading system, radical prostatectomy 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
	5+3=8	Predominantly lacking glands and lesser component (**) of well-formed glands
Grade 5	9-10	Lack gland formation (or with necrosis) with or without poorly formed/fused/cribriform glands

* A high-grade pattern is included in the grade only if it is at least 5%. If less than 5%, it should be mentioned separately in the report.

** The low-grade pattern is included in the grade only if it is at least 5%.

References

1 Epstein JI, Allsbrook WCJ, Amin MB and Egevad LL (2005). The 2005 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma. *Am J Surg Pathol* 29(9):1228–1242.