Histological tumour grade (Core)

Evaluation of histopathological grade in endometrioid carcinoma is very important in both the initial biopsy/curettage and the final hysterectomy specimen, as risk stratification and decisions on the extent of surgical treatment and administration of adjuvant therapy take into account information on grading.[1]

Serous, clear cell, undifferentiated and neuroendocrine carcinomas and carcinosarcomas are considered high grade by definition. Entities that are high grade by definition should be recorded as 'not applicable' in the reporting guide. However, grading for endometrioid carcinoma is prognostically important.[1,2] The value of the International Federation of Gynaecology and Obstetrics (FIGO) grading system was shown in a univariate analysis of more than 600 patients with clinical Stage I or occult Stage II endometrioid carcinoma.[3] The 5-year relative survival was 94% for patients with grade 1 tumours, 84% for those with grade 2 tumours, and 72% for those with grade 3 tumours.[4]

The 2009 FIGO grading criteria for endometrioid carcinoma is primarily based on architectural features.[4] Grade 1, 2, and 3 tumours exhibit ≤5%, 6-50%, and >50% solid non-glandular growth, respectively.[4] In endometrioid carcinomas with squamous differentiation, the grade of the tumour should be assessed in the non-squamous areas. The presence of severe cytological atypia in the majority of cells (>50%) increases the grade by one level.

Overall, the κ statistic for interobserver variability has been shown to be fair to good for the FIGO grading system, with κ values ranging from 0.41 to 0.65.[5] In those studies that have looked at the individual components of the grading system, the interobserver agreement for architecture has ranged from 0.49 to 0.71.[5]

International Society of Gynecological Pathologists (ISGyP) guidelines and the 2020 World Health Organization Classification, highlight the benefits of binary grading, whereby grade 1 and 2 tumours are categorised as low grade and grade 3 tumours as high grade.[6,7] This recommendation is based on the benefits of the binary grading system for easier clinical decision making and improved reproducibility. Classification and regression tree statistical analysis show that the distinction between low and high grade tumours was the second most informative predictor of survival after stage.[8,9] However, some reports show a small, but statistically significant survival difference of around 5% between low stage, grade 1 and 2 tumours,[6] and the distinction between grade 1 and 2 carcinomas may be still important in some institutions for patients desiring fertility-sparing treatments.[10-13]

Agreement in histopathological grade between biopsy and hysterectomy specimens varies, with concordance of only 35% reported in some series.[14,15] Tumour heterogeneity may explain this discrepancy, since biopsies may not be necessarily representative of the whole tumour.[16] When there is discrepancy between the reported histopathological grade in the biopsy and the hysterectomy specimen, it is recommended to review the initial biopsy, and to take this into account when assigning the final histological grade, particularly in cases in which the amount of tumour in the hysterectomy specimen is very limited.

Alternative proposals to FIGO grading have been suggested, which take into account several different parameters, such as nuclear grade, architectural grade, combination of architectural and nuclear features, necrosis, and pattern of myometrial invasion.[17-20] The alternate proposals have shown prognostic value but have not shown to be superior to the FIGO scheme in terms of reproducibility or prediction and some features, such as pattern of myometrial invasion, cannot be assessed on biopsies and curettage specimens.[17-20]

Histological grade may be difficult to apply for cases (especially hysterectomy specimens) in which the specimen was inappropriately fixed and/or the tumour is autolysed. The category of 'cannot be assessed' should be used sparingly and only in cases where there is genuine doubt. In such cases, it may be useful to state the reason for a response of 'cannot be assessed' in the report and correlation with the preoperative biopsy may be valuable. The 'cannot be assessed' category may also be used in biopsy specimens containing extremely scant tissue.

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