Histological grade of adenocarcinoma (Core)

Grading applies only to malignant polyps not to endoscopic biopsy specimens. Despite low level of interobserver agreement,[1] histological grade is associated with nodal status and is an independent prognostic factor used in risk assessment models for colorectal carcinoma.[2-4]

Various grading systems have been used over the years. A two-tiered grading system is more reproducible and more prognostically relevant than a four-tiered grading system. For consistency with the latest World Health Organization (WHO) classification,[5] grading should be based on gland formation: low grade (formerly well to moderately differentiated) and high grade (formerly poorly differentiated). Grading is based on the least differentiated component of the tumour, although there is no good evidence to support this stance and a minimum area of high grade tumour required for this classification has not been defined. Grading may not be applicable if the adenocarcinoma is very small.

Tumour buds or poorly differentiated clusters, most commonly seen at the invasive tumour front, should not be considered in the evaluation of grade. Emerging data suggests that grading based on poorly differentiated clusters is superior to conventional grading with respect to both prognostic value and reproducibility.[6,7]

Only adenocarcinoma not otherwise specified (NOS) and mucinous adenocarcinoma should be graded. Grading is not applicable to other subtypes of adenocarcinoma, as grading by gland formation is difficult to apply to subtypes and most of these are associated with their own clinical prognosis e.g., bad for signet-ring cell adenocarcinoma, micropapillary adenocarcinoma, serrated adenocarcinoma and good for medullary carcinoma and adenoma-like adenocarcinoma. Mucinous adenocarcinoma should be graded on gland formation and epithelial maturation.[5] Tumour mismatch repair (MMR) status is likely to influence clinical behaviour of some histological tumour types, including mucinous adenocarcinoma, but some studies have found morphological grading superior to MMR status for prognostication of mucinous adenocarcinomas.[8,9] A cribriform pattern of invasive adenocarcinoma is associated with greater risk of nodal metastasis in malignant polyps.[10]

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