OCCASIONAL VIEWPOINT

Gastrointestinal epithelial neoplasia: Vienna revisited

M F Dixon

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International consensus meetings in Padova and Vienna have attempted to rationalise the grading and classification of gastrointestinal epithelial neoplasia (GEN). With its minor adjustments, the Vienna classification of GEN seeks to be more closely in tune with patient management and it is hoped that it is not seen as fiddling around with terms but as a genuine contribution to patient care.

Gastroenterologists and pathologists can be excused for feeling somewhat bemused by recent attempts to rationalise the grading and classification of gastrointestinal epithelial neoplasia (GEN). International consensus meetings in Padova and Vienna have led to "new" classifications[1 2]; the former a meeting of eight pathologists held in April 1998 and the latter comprising 31 pathologists from 12 countries held in September 1998, including seven of the Padova group. Thus the "Vienna classification" evolved out of discussions in Padova and has the imprimatur of a large number of international experts, but does it represent the final word?

The need to periodically review the way we classify disease is self evident. New discoveries, for example *Helicobacter pylori* infection, can radically alter pre-existing concepts and categorisations of disease. Categories with distinctive histopathological and/or clinical features, particularly with regard to natural history or response to treatment, need to be separated from the mainstream of a disease. However, categories based entirely on the subjective assessments of histopathologists frequently lack precision (the degree of variation in assigning a case to a given category) and accuracy (the closeness of the diagnosis to the true clinical state).[3] This is especially the case with the biopsy based diagnosis of GEN which comprises a continuum extending from low to high grade dysplasia to intramucosal carcinoma. Separation into "distinct" categories then becomes a matter of individual judgement and the diagnoses can be expected to show wide interobserver disagreements. However, a further bar to agreement is the absence of a uniform terminology within a system of classification. In the context of GEN, some terms carry different meanings in different countries. Indeed, this could be broadly identified as an East-West division. Among the problems is the failure in the West to recognise "flat" or depressed adenoma and non-invasive carcinoma in the gastrointestinal tract, while in Japanese practice the term "dysplasia" is not used other than for borderline squamous lesions of the oesophagus. Furthermore, the Japanese concept of "mucosal carcinoma" in the colorectum—that is, neoplasia *without* submucosal invasion—is deprecated by many Western pathologists. Although it can be argued that submucosal invasion has to originate from an initial carcinoma confined to the mucosa (either in situ or invasion limited to the lamina propria of the mucosa), in the colorectum such "carcinomas" do not behave as biological malignancies—that is, they do not exhibit metastases. Therefore, such lesions can be adequately treated by local removal. In order to avoid labelling a patient as having a colorectal *cancer*, many Western pathologists include the same appearances within high grade dysplasia.

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The initial response of a Western physician to the numerical categorisation (1–5) of the Padova and Vienna classifications will no doubt be one of puzzlement. Why the numbers? For decades, Japanese pathologists have distinguished five groups of lesions within the spectrum of GEN,[4] namely: normal or benign changes (hyperplasia/metaplasia) without atypia (group 1); lesions with atypia resulting from regeneration (group 2); borderline lesions including adenomas and lesions difficult to diagnose as regenerative or neoplastic (group 3); lesions strongly suspected of carcinoma (group 4); and definite carcinomas *irrespective of invasion* (group 5). While the treatment options are few and straightforward there is considerable overlap between groups; do nothing (groups 1 and 2), endoscopic follow up (group 3), local removal by endoscopic mucosal resection (groups 3, 4, and 5), or a "cancer operation" with lymph node removal (group 5). In bringing together the essentially descriptive Western approach with the group approach of the Japanese practitioner, a guiding principle was the need for clinically meaningful categories. Classification separate from practical usefulness becomes a hollow exercise in semantics. The difficulty lay in deciding which terms or entities in the Western nomenclature were synonymous with Japanese diagnoses *in terms of natural history and management*.

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Abbreviations: GEN, gastrointestinal epithelial neoplasia.

Correspondence to:
M F Dixon, Department of Histopathology, Algernon Firth Building, General Infirmary at Leeds, Leeds LS1 3EX, UK;
miked@pathology.leeds.ac.uk

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Table 1 The revised Vienna classification of gastrointestinal epithelial neoplasia

Category	Diagnosis	Clinical management
1	Negative for neoplasia	Optional follow up
2	Indefinite for neoplasia	Follow up
3	Mucosal low grade neoplasia Low grade adenoma Low grade dysplasia	Endoscopic resection or follow up*
4	Mucosal high grade neoplasia 4.1 High grade adenoma/dysplasia 4.2 Non-invasive carcinoma (carcinoma in situ) 4.3 Suspicious for invasive carcinoma 4.4 Intramucosal carcinoma	Endoscopic or surgical local resection*
5	Submucosal invasion by carcinoma	Surgical resection*

*Choice of treatment will depend on the overall size of the lesion; the depth of invasion as assessed endoscopically, radiologically, or ultrasonographically; and on general factors such as the patient's age and comorbid conditions. For gastric, oesophageal, and non-polypoid colorectal well and moderately differentiated carcinomas showing only minimal submucosal invasion (sm1) without lymphatic involvement, local resection is sufficient. Likewise, for polypoid colorectal carcinomas with deeper submucosal invasion in the stalk/base but without lymphatic or blood vessel invasion, complete local resection is considered adequate treatment.

With these aims in mind, delineation of (at most) five clinicopathological categories became a desirable goal as well as inclusion of an expanded use of adenoma to match Japanese practice and dysplasia to suit the Western view. Likewise, the place of non-invasive carcinoma had to be recognised; failure to adequately appreciate this concept led to considerable discrepancies between the diagnoses made on biopsies and the subsequent resection specimens by Western pathologists.[5 6] Nevertheless, the precise diagnostic terms were felt to be less important than a categorisation that assisted clinical decision making. This was the rationale underpinning the Padova and Vienna discussions. However, when the precision and accuracy of the resulting classifications were critically examined, some further revision was indicated. A minor adjustment to the way in which the diagnostic terms were grouped led both to higher kappa values (a coefficient of chance corrected agreement) for the diagnosis of oesophageal, gastric, and colorectal lesions of GEN, and to greater clinical usefulness of the categories.[4] This revised Vienna classification[6] is shown in table 1. It should be emphasised that biopsy based diagnoses are subject to the limitations of superficiality and sampling errors. The final diagnosis rests on examination of a resection specimen (either endoscopic or surgical) where the full extent of spread or the most severe grade of GEN will be revealed. Thus, for example, the pathologist's report on a biopsy diagnosis of intramucosal carcinoma is best qualified by "at least".

The cynic may consider that classification, and especially reclassification, by panels of so-called experts is simply a self gratifying and self aggrandising exercise. International consensus meetings are certainly held at attractive venues. We await with interest a classification bearing the name of a city noted for heavy industry and pollution, or located in some inhospitable latitude. The principal justification for classification lies in clinical usefulness. With its minor adjustments the Vienna classification of GEN seeks to be more closely in tune with patient management. Originating as it does in the city of Johan Strauss, it is to be hoped that the new classification is not seen as fiddling around with terms but as a genuine contribution to patient care.

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