CASE REPORT

Hyperplastic polyps of the duodenum: an unusual histological finding

H J Roche, N J Carr, H Laing, A C Bateman

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A 58-year-old man underwent upper gastrointestinal surveillance endoscopy for Barrett's oesophagus. This showed a possible gastric ulcer, although histological examination was normal. Follow-up endoscopy showed white ridges in the distal duodenum and these were subjected to biopsy. Histological examination of the biopsy specimens showed polypoid duodenal mucosa showing features similar to those of a hyperplastic polyp of the colon. In addition, the mucosal surface was focally of gastric surface type. The features were interpreted overall as most likely to represent an unusual form of regenerative change in the setting of previous chronic inflammatory mucosal damage. The case is presented as an unusual histological phenomenon at this site; it would be important not to overdiagnose neoplasia in this situation.

A 58-year-old man with a 2-year history of Barrett's oesophagus underwent routine upper gastrointestinal surveillance endoscopy for this condition. This showed an endoscopic mucosal abnormality thought clinically most likely to represent a gastric antral ulcer, but gastric biopsy

showed normal gastric mucosa with no evidence of *Helicobacter*-like organisms. He was treated with a proton-pump inhibitor. A CLOtest was not carried out but was negative at follow-up endoscopy 3 months later, which showed endoscopically normal gastric mucosa. However, at this time the distal duodenum showed an unusual appearance, with white ridges on the tops of the mucosal folds (fig 1A). Further biopsy specimens were taken from the gastric antrum and from the distal duodenum.

Pathology

The repeat gastric antral biopsy specimens showed normal appearances; no *Helicobacter*-like organisms were identified. The duodenal biopsy specimens showed an unusual appearance, with one polypoid fragment showing an area of elongated crypts and villi with serrated profiles (fig 1B,C). The appearances were similar to those of a hyperplastic polyp of the colon. The duodenal mucosa in this area was also focally covered by gastric-type surface epithelium—apical diastase-periodic acid-Schiff-positive mucin glands were present (fig 1D) in contrast with the brush border and scattered goblet cells usually present in duodenal surface epithelium. No *Helicobacter*-like organisms were identified in

Figure 1 (A) Endoscopic appearance of the distal duodenum, with pale areas on the ridges of the duodenal folds. (B–D) Histological appearance of the biopsy specimens taken from the abnormal duodenal folds. The duodenal mucosa is polypoid and shows elongation of crypts and villi with a serrated appearance. Epithelial nuclear atypia is present at the base of the crypts but this feature is generally less marked at the surface. Areas of gastric-type surface epithelium are present. (B) Haematoxylin and eosin (H&E) stain; magnification $\times 100$. (C) H&E stain; magnification $\times 200$. (D) Diastase-periodic acid-Schiff stain; magnification $\times 200$.

Table 1 A histological classification of duodenal polyps

Category	Incidence	Lesion
Non-neoplastic	Frequent	Ectopic gastric mucosa
	Frequent	Inflammatory polyp*
	Frequent	Brunner's gland hyperplasia
	Less frequent	Ectopic pancreatic mucosa
	Rare	Peutz-Jegher's polyp
Neoplastic†	Rare	Hyperplastic polyp
	Frequent	Adenoma (surface epithelium)
	Frequent	Gastrointestinal stromal tumour‡
	Less frequent	Brunner's gland adenoma
	Less frequent	Carcinoid tumour
	Rare	Leiomyoma
	Rare	Lipoma
	Rare	Schwannoma
	Rare	Serrated adenoma

*Although inflammatory polyps as an overall group are relatively frequent lesions, those exhibiting the pattern described in this case report are rare.

†It is also possible for malignant counterparts of these lesions to present as, at least partly, polypoid masses, but most duodenal neoplasms presenting in entirely polypoid form are benign.

‡These lesions may exhibit a spectrum of biological behaviour but lesions <2 cm in size and with a low mitotic index possess a very low risk of recurrence or metastasis.

association with this gastric-type surface epithelium. The epithelium in this area of polypoid change showed reactive features but there was no evidence of dysplasia.

DISCUSSION

Several types of polyps can occur in the duodenum (table 1).¹⁻³ Duodenal polyps are most commonly sessile but may also be pedunculated in nature.⁴ Ectopic gastric mucosa and polyps related to Brunner's gland hyperplasia are among the most commonly encountered in routine surgical practice. Adenomas are often situated at or adjacent to the ampulla of Vater and may be associated with underlying invasive carcinoma that is not apparent in superficial biopsy specimens.

The case here highlights the fact that polypoid mucosa may sometimes have an unusual endoscopic and histological appearance. In this case, the presence of focal surface-type gastric epithelium in the area of duodenal polypoid change suggests that the hyperplastic polyp-like appearance is most likely to represent an unusual form of regenerative change in response to one or more episodes of inflammatory mucosal damage occurring in the duodenum. The differential diagnosis of this lesion would include a serrated adenoma. Serrated adenomas are very uncommon lesions in the duodenum and have been described in association with familial adenomatous polyposis.⁵ When assessing serrated polyps, the key feature that enables a diagnosis of serrated adenoma is the presence of nuclear atypia, which is evenly distributed throughout the length of the crypts and which extends to the surface of the polyp. In our case, nuclear atypia was present but was much less marked at the surface of the lesion.

Lesions with the appearances of hyperplastic polyps have rarely been previously described in the duodenum. However,

these have almost always occurred in the setting of ectopic gastric mucosa of specialised type and therefore show appearances that more closely mimic hyperplastic polyps of the stomach rather than hyperplastic polyps of colonic type. When these lesions occur in the duodenum they may be associated with colonisation by *Helicobacter*-like organisms.⁶ We have found only one previous report of hyperplastic polyps occurring in the duodenum, in which two cases are described. One patient presented with melaena after aspirin usage, and endoscopy showed gastric antral erosions and a 3 mm duodenal bulb polyp. A second patient presented with dyspepsia, and endoscopy showed a hiatus hernia and a 5 mm duodenal bulb polyp. The polyp from the first patient was described as comprising colonic-type mucosa, although the figure suggests that a mixture of gastric-type surface epithelium and goblet cells was present. The polyp from the second patient showed a serrated appearance but almost entirely comprised gastric-type surface epithelium with no goblet cells.⁷ The polyp in our case showed appearances that were very similar to those of the first patient in this earlier report. Interestingly, both of the polyps in this report presented as isolated lesions in the duodenal bulb, whereas the lesion in our case presented as pale ridges in the distal duodenum.

This report highlights the rare occurrence of hyperplastic polyps in the duodenum. It is important to differentiate these lesions from serrated adenomas. It seems that these lesions most commonly occur in the setting of peptic ulcer disease or other forms of erosive gastritis and duodenitis.

Authors' affiliations

H J Roche, A C Bateman, Department of Cellular Pathology, Southampton University Hospitals NHS Trust, Southampton, UK
N J Carr, St Matthew's Medical School, Grand Cayman, UK
H Laing, Wessex Nuffield Hospital, Eastleigh, UK

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Correspondence to: Dr H Roche, Cellular Pathology Department, MP002, Level E, South Block, Southampton General Hospital, Tremona Road, Southampton SO16 6YD, UK; heatherjroche@hotmail.co.uk

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