

HISTOPATH UPDATE

BARRETT'S OESOPHAGUS

SUMMARY

Barrett's oesophagus is defined by the presence of intestinal metaplasia (IM), and specifically goblet cells, in the oesophagus. It can be any length, but does not include IM confined to the cardio-oesophageal junction. Short segments of disease do not show IM in every biopsy, with a sampling error rate of up to 50%. The significance of IM restricted to the GOJ or cardia remains unclear.

WHAT IS BARRETT'S OESOPHAGUS?

It is now defined as **intestinal metaplasia (IM)** (Fig 1) of any length in the oesophagus.^{1,2} This varies from the earlier anatomical description of 3cm of glandular mucosa, since adenocarcinoma can arise in shorter segments of Barrett's mucosa. Glandular mucosa without IM does not appear to be a premalignant change and is not diagnosed as Barrett's oesophagus.¹ Intestinal metaplasia in cases of Barrett's oesophagus is usually of incomplete type. Goblet cells are crucial for the diagnosis of Barrett's, and can be diagnosed by H&E and alcian blue staining (Fig 2).

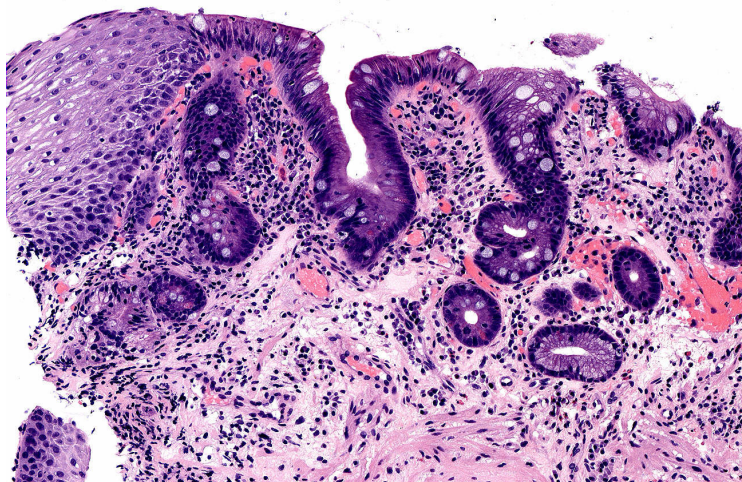


Figure 1. Barrett's oesophagus. The goblet cells are readily seen in the glandular mucosa and are a prerequisite for the diagnosis.

Barrett's oesophagus

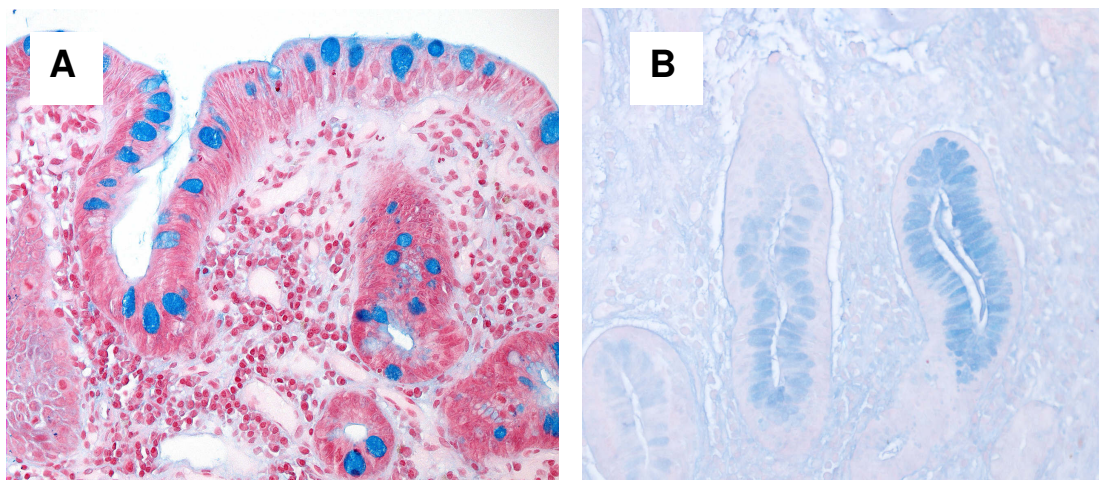


Figure 2. Alcian blue staining in Barrett's oesophagus. There is intense staining in goblet cells (A), which stain for acidic intestinal-type mucins. Staining without the goblet cell morphology ("columnar blues", B) is insufficient for the diagnosis.

There is a sampling issue, since [short segment Barrett's oesophagus demonstrates IM in only 50% of biopsy sets](#).³ The false negative rate is less for long-segment disease, at around 10% or less. Chromoendoscopy increases the detection of intestinal metaplasia and high grade dysplasia⁴ (but **not** low grade dysplasia), but recent reports have indicated the potential of this technique using methylene blue to actually increase DNA damage and accelerate carcinogenesis.⁵ Other substances may be less harmful.

WHAT ISN'T BARRETT'S OESOPHAGUS?

Care must be exercised not to overdiagnose goblet cells. The major mimic is the presence of columnar cells with weak alcian blue mucin staining but *without* goblet cell morphology ("columnar blues")^{2,6} (Fig 2B). Other mimics include goblet-like cells containing gastric but not intestinal mucin, and pancreatic metaplasia, which forms aggregates of closely packed eosinophilic acini. The last change occurs in up to 25% of oesophageal biopsies.⁷

WHAT ABOUT INTESTINAL METAPLASIA OF THE GO JUNCTION AND CARDIA?

Adenocarcinomas of the gastro-oesophageal junction (GOJ) and cardia are increasing significantly in incidence but remain less common than oesophageal adenocarcinoma. Although IM occurs in these sites, it is common and does not show the same demographic distribution (males, middle-aged, white) as Barrett's oesophagus or adenocarcinoma. It has been estimated to occur in [6-20%](#) of individuals, with the higher frequency in those who are symptomatic. The frequency appears to be similar in groups at higher risk (males, middle-aged, white) and low risk (females, non-whites and younger patients) for adenocarcinoma. For this reason, the clinical significance or the finding remains controversial.

Barrett's oesophagus

It is probably multifactorial (reflux-related, *Helicobacter*, local trauma) and has a lower risk for progression to adenocarcinoma.^{8,9} Because of this, such cases can be reported as "intestinal metaplasia at the GOJ (or cardia). This is multifactorial and only some cases are associated with Barrett's oesophagus". Screening has NOT been recommended for this lesion at this stage.¹

REFERENCES

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Please advise the laboratory on 97644300 if you would like copies of any of the above articles. For further information contact Dr Andrew Clouston.



Tel 9764 4300 Fax 9764 4900
Level 9 Strathfield Plaza
Strathfield NSW 2135