In Patients with Limited Extent Intestinal Metaplasia the Determination of the Subtype May be Crucial for Stratification of Their Gastric Cancer Risk

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Background and Hypothesis

In patients with gastric intestinal metaplasia (IM), extensive intestinal metaplasia, which is defined as IM that involves the oxyntic mucosa, and the incomplete subtype of IM are two histologic findings that are associated with increased risk of developing gastric dysplasia and gastric cancer (GC) (1). Secondary to a geometric correlation that has been detected between the extent of IM and proportion of incomplete-type IM, some experts argue that extent alone is a sufficient parameter for risk stratification in these patients. The aim of this study was to determine the proportion of complete and incomplete IM in patients with limited and extensive disease.

Methods

We prospectively analyzed the biopsies from 341 patients with IM and, at a minimum, biopsies of both antrum and oxyntic mucosa. Three gastrointestinal pathologists (RG, CR, KT) reviewed all cases and recorded the type and location of IM. In keeping with the recent AGA guidelines (1) for the management of gastric IM, cases with IM in the oxyntic mucosa were classified as extensive; cases with mixed complete and incomplete IM were classified as incomplete IM. The percentage of incomplete IM in the two groups was compared by calculating odds ratios (OR with 95% CI).

Results

There were 199 (58.4%) patients with limited IM and 142 (41.6%) with extensive IM. Among those with limited IM, 146 (73.3%) had complete IM and 53 (26.6%) had incomplete IM. Among those with extensive IM, 84 (59.2%) had complete IM and 58 (40.8%) had incomplete IM

(OR 1.90; 1.20 – 3.01; p<.01)

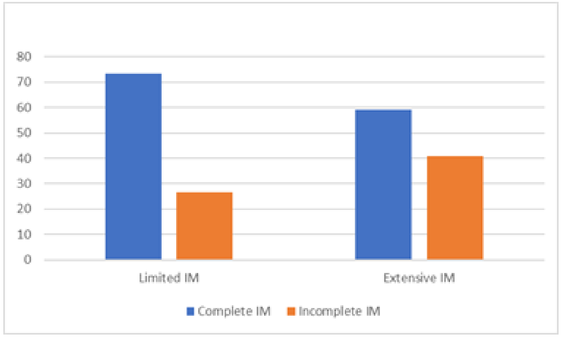

Table 1. The proportions of limited and extensive IM in patients with complete and incomplete IM

	Complete IM	Incomplete IM
Limited IM (199)	146 (73.3)	53 (26.6)
Extensive IM (142)	84 (59.2)	58 (40.8)

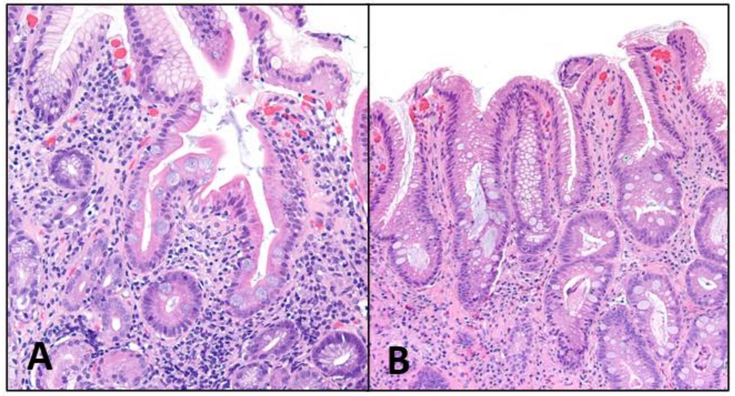

Figure 1. Photomicrographs of complete intestinal metaplasia with more consistently sized and shaped goblet cells and a sharp microvillous brush border (A), incomplete intestinal metaplasia with variable sized and shaped goblet cells and no microvillous brush border (B)

Conclusion

Compared to patients with limited IM, patients with extensive IM had approximately twice the risk for incomplete IM. However, our study also shows that in patients with limited IM, who would not be considered at increased risk for dysplasia and GC by the AGA guidelines, over a quarter have incomplete IM, which would put them in the increased risk category. Therefore, relying solely on extent might result in the misclassification of patients who are at increased risk for dysplasia and GC. Until there are more robust methods to stratify risk in the evolving field of GC prevention, we suggest that optimal screening strategies can be substantially aided by reporting both extent and subtype of gastric IM.

Highlights

- Patients with extensive IM have almost twice the prevalence of incomplete IM compared to patients with limited.
- In our patients with limited IM over a quarter had incomplete IM.
- Recognizing incomplete IM in patients with limited extent disease may catch people at high-risk who would have otherwise been misclassified as low-risk by extent.

References

1. 1. Gupta S, Li D, El Serag HB, Davitkov P, Altayar O, Sultan S, Falck-Ytter Y, Mustafa RA. AGA Clinical Practice Guidelines on Management of Gastric Intestinal Metaplasia. Gastroenterology. 2020 Feb;158(3):693-702. doi: 10.1053/j.gastro.2019.12.003. Epub 2019 Dec 6