

DeMeester S, Smith C, Severson P, et al. Multi-Center Randomized Trial Comparing Standard Forceps Biopsies to Wide-Area Transepithelial Sampling Brush for Finding Intestinal Metaplasia and Dysplasia in the Esophagus and Gastroesophageal Junction: 353. American Journal of Gastroenterology 2019;114:S207-S208.

INTRODUCTION: Intestinal metaplasia (IM) is a premalignant finding in the esophagus associated with the risk of progression to adenocarcinoma. Prior studies have used WATS in combination with biopsies to increase the yield of dysplasia. The aim of this study was to compare the frequency of IM and dysplasia detection during upper endoscopy by standard biopsy versus WATS brush.

METHODS: Patients presenting for upper endoscopy for gastroesophageal reflux disease (GERD) symptoms, dysphagia or other foregut conditions were prospectively enrolled and randomized to either standard biopsies or WATS brush from October 1, 2017 to December 31, 2018. Patients with a history of malignancy were excluded.

RESULTS: There were 1002 patients enrolled at 9 participating centers. Patient demographics and indications for endoscopy are shown in Table 1. A total of 509 patients had biopsies and 493 had WATS. A columnar-lined esophagus (CLE) of any length was seen in 282 patients, while in 720 patients there was no CLE and the biopsy or WATS was from a normal or irregular appearing gastroesophageal junction (GEJ). The median length of CLE when present was 3 cm. The overall frequency of finding IM by biopsy was 19.45% and by WATS 22.72%, $p=0.2$. Table 2 shows the frequency of finding IM in patients ($n=817$) having upper endoscopy for an indication other than Barrett's surveillance or post-ablation, with no history of known IM, compared to the frequency of finding IM in patients undergoing endoscopy for Barrett's surveillance or follow-up after ablation ($n=185$). In the 817 patients without a prior history of IM, biopsy and WATS found IM with similar frequency overall, but WATS found significantly more IM in patients with any endoscopically visible length of CLE. Biopsy found one cancer, and low-grade dysplasia was found in one patient each with biopsy and WATS.

In the 185 patients that had their endoscopy for follow-up of Barrett's or ablation there was no difference in the frequency of IM detection for biopsy vs WATS, and was similar in patients with < 3 cm CLE and in those with ≥ 3 cm CLE. Dysplasia or cancer was found in 5 patients in this group, 2 by WATS and 3 by biopsy.

CONCLUSION: Both biopsy and WATS detect a similar frequency of IM overall; however, WATS was over twice as likely as biopsies to find IM in patients without a history of IM found to have CLE on endoscopy. This is perhaps related to the wide area sampling of the CLE segment with WATS. In patients undergoing surveillance for Barrett's or follow-up after ablation both WATS and biopsy showed IM and dysplasia with similar frequency. These findings suggest that WATS can be used instead of biopsies of the GEJ and esophagus during upper endoscopy with similar or improved efficacy at detecting IM and dysplasia.