Wide Area Transepithelial Sampling (WATS-3D): An Adjunct to Surveillance in Barrett's Esophagus Post Radiofrequency Ablation (RFA)

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BACKGROUND

- Barrett's esophagus (BE) is the premalignant lesion of esophageal adenocarcinoma. 1
- BE can undergo a step-wise progression from low-grade dysplasia (LGD) to high-grade dysplasia (HGD) progressing to intramucosal carcinoma (IMC). 1
- Standard 4-quadrant forceps biopsies (FB) every 1-2 cm of the original BE segment leaves a significant area not sampled.2
- Wide area transepithelial sampling (WATS-3D) as an adjunct to forceps biopsy has shown promise in improving detection of BE and dysplasia.3

AIMS

- Biopsy specimens of neo-squamous mucosa obtained after endoscopic ablative therapies appear to be inadequate to exclude subepithelial intestinal metaplasia/dysplasia because lamina propria is not present in more than half of specimens.2
- One recent retrospective trial of 21 patients demonstrated increased diagnostic yield with WATS as an adjunct to FB in post-ablation BE surveillance.3
- We aim to evaluate the effectiveness of WATS as an adjunctive diagnostic tool for detection of BE and dysplasia.

METHODS

- Retrospective review of 23 patients with BE with or without dysplasia who underwent Halo 360/90 (Barrx®) radiofrequency ablation (RFA) and under surveillance protocol.
- Patients underwent standard upper endoscopy at a single academic medical center using white light and narrow band imaging.
- WATS-3D was performed using the 2-brush technique (EndoCDx®, CDx Diagnostics, Suffern NY) at the distal esophagus and EG junction, and samples sent to the company's laboratory for evaluation.
- Following this, forceps biopsies were obtained every 1-2 cm and reviewed by our academic GI pathologists.

RESULTS

- Histology prior to RFA: 1 non-dysplastic BE, 1 indefinite for dysplasia, 2 low grade dysplasia, 13 high grade dysplasia, and 6 intramucosal cancer.
- 21 of 23 were male, with a mean age of 67.4 years.
- 9 patients had short segment and 14 had long segment BE, with an overall mean BE length of 5.9 cm.
- Forceps biopsy and WATS-3D results showed agreement in 19/23 (82.6%) patients.
- Of the discordant results, WATS-3D upstaged two and downstaged two diagnoses.
- WATS-3D detected one patient with recurrent focal intestinal metaplasia, and upstaged one low grade dysplasia to high grade dysplasia.
- WATS-3D did not detect one patient with intestinal metaplasia (buried at the GE junction) and one patient with low grade dysplasia (reported in only 1 out of 9 forceps biopsy).
- No complications related to WATS-3D were reported.
- 2 patients had less than one year of follow up from initial ablation.

CONCLUSION

WATS-3D is an effective tool for improving surveillance of the surface area of the EG junction in post-RFA patients, confirming 82.6% of forceps biopsy diagnoses. We suggest that WATS-3D can be used to alter surveillance strategy in patients with pathological discrepancies compared to standard forceps biopsy.

REFERENCES