Gross SA, Smith MS, Kaul V, US Collaborative WATS3D Study Group. Increased detection of Barrett's esophagus and esophageal dysplasia with adjunctive use of wide-area transepithelial sample with three-dimensional computer-assisted analysis (WATS). United European Gastroenterology Journal. 2018;6(4):529-535.

BACKGROUND: Barrett's esophagus (BE) and esophageal dysplasia (ED) are frequently missed during screening and surveillance esophagoscopy because of sampling error associated with four-quadrant random forceps biopsy (FB).

AIM: The aim of this article is to determine if wide-area transepithelial sampling with three-dimensional computer-assisted analysis (WATS) used adjunctively with FB can increase the detection of BE and ED.

METHODS: In this multicenter prospective trial, patients screened for suspected BE and those with known BE undergoing surveillance were enrolled. Patients at 25 community-based practices underwent WATS adjunctively to targeted FB and random four-quadrant FB.

RESULTS: Of 4203 patients, 594 were diagnosed with BE by FB alone, and 493 additional cases were detected by adding WATS, increasing the overall detection of BE by 83% (493/594, 95% CI 74%–93%). Low-grade dysplasia (LGD) was diagnosed in 26 patients by FB alone, and 23 additional cases were detected by adding WATS, increasing the detection of LGD by 88.5% (23/26, 95% CI 48%–160%).

CONCLUSIONS: Adjunctive use of WATS to FB significantly improves the detection of both BE and ED. Sampling error, an inherent limitation associated with screening and surveillance, can be improved with WATS allowing better informed decisions to be made about the management and subsequent treatment of these patients.

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