5.5. Buried Barrett after radiofrequency ablation for neoplastic Barrett esophagus: Undetectable due to mucosal scarring or truly a rare occurrence?

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Background: Radiofrequency ablation (RFA) is safe and effective for eradicating neoplastic Barrett esophagus (BE). Although buried Barrett (BB) glands underneath the neosquamous epithelium (NSE) are an extremely rare finding during follow-up, some have hypothesized that BB cannot be adequately sampled due to presumptive mucosal fibrosis after RFA.

Aim: Prospectively evaluate sampling depth of primary and keyhole biopsies obtained from NSE vs. untreated squamous epithelium (USE) as control. Compare sampling depth of standard vs. jumbo biopsy forceps in NSE and USE. Assess for BB beneath the NSE using primary biopsy, keyhole biopsy and endoscopic resection (ER).

Methods: We considered 23 patients for enrollment, all of whom had undergone RFA for neoplastic BE under protocol. After signing informed consent, patients were randomized to undergo standard vs. jumbo biopsies from the NSE and USE (4Q/2cm). After each primary biopsy a "keyhole" biopsy was obtained from the same site in order to obtain deeper tissue. In addition an ER specimen was obtained from an area of NSE. Three expert pathologists independently scored (blinded to biopsy source) histological depth for each biopsy and ER specimen and determined if BB was present.

Results: 16 of 23 patients participated (exclusions: unrelated death (1), co-morbidity (2), initial BE <2 cm (4). Complete eradication of neoplastic BE had been achieved and sustained in all patients prior to enrollment; median follow-up 26 months (IQR 21-28). There was no difference in primary biopsy depth between NSE vs. USE: lamina propria was sampled in 37% and 36% of cases, respectively. Keyhole biopsies sampled significantly deeper than primary non-keyhole biopsies. There was no significant difference in sampling depth between standard and jumbo biopsy forceps. All ER-specimens included submucosa. BB was not found in any of the (keyhole) biopsies and ER specimens.

Conclusion: Primary biopsies from NSE after RFA sample as deeply as biopsies from control USE. It is thus unlikely that the reported absence of BB after RFA reflects insufficient biopsy depth due to mucosal scarring. We found no benefit in terms of additional biopsy depth for using jumbo biopsy forceps in surveying post-RFA patients. The absence of BB in (keyhole) biopsies and ER specimens suggests that RFA obliterates all Barrett mucosa, both superficial and deep.