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A RECTUM-SPECIFIC SELECTIVE RESECTION ALGORITHM OPTIMIZES ONCOLOGIC OUTCOMES FOR LARGE NON-PEDUNCULATED RECTAL POLYPS

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Background: Endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) are complementary techniques for large ($\geq$ 20mm) non-pedunculated rectal polyps (LNPRPs). A mechanism for appropriate technique selection has not been described.
Aims: To evaluate whether a selective resection algorithm using EMR and ESD, based on real-time optical evaluation, optimizes oncologic outcomes for LNPRPs
Methods: We evaluated the performance of a selective resection algorithm (SRA; 08/2017-04/2021) compared to a universal EMR algorithm (UEA; 07/2008-07/2017) for LNPRPs within a prospective observational study. In the SRA, LNPRPs with features of superficial submucosal invasive cancer (SMIC < 1000μm; S-SMIC; Kudo pit pattern Vi), or with an increased risk of SMIC (Paris 0-Is or 0-IIa+Is non-granular, 0-IIa+Is granular with a dominant nodule $\geq$ 10mm) underwent ESD. The remaining LNPRPs underwent EMR. Algorithm performance was evaluated by SMIC identified after EMR, curative oncologic resection (R0 resection, S-SMIC, absence of negative histologic features), technical success, adverse events, and recurrence at first surveillance colonoscopy.
Results: 480 LNPRPs were evaluated (290 UEA, 190 SRA). Median lesion size was 40mm (IQR 30-60mm). In the SRA, 103 (54.2%) and 87 (45.8%) LNPRPs underwent EMR and ESD, respectively. SMIC was identified in 56 (11.7%) LNPRPs. Significant differences in SMIC after EMR (SRA 1 (1.0%) vs. UEA 35 (12.1%); p = 0.001), curative oncologic resection (SRA 7 (33.3%) vs. UEA 2 (5.7%); p = 0.010), and recurrence (SRA 2 (1.6%) vs. UEA 40 (17.2%); p < 0.001) were identified. No significant differences in technical success or adverse events were identified (all p > 0.137). Among potentially curable malignant LNPRPs which underwent ESD, 100% (7/7) were cured.
Conclusions: A SRA optimizes oncologic outcomes for LNPRPs and mitigates the risk of piecemeal resection of cancers.

Oncologic Outcomes for Malignant LNPRPs

	Overall LNPRPs (N = 56, %)	UEA LNPRPs (N = 35, %)	SRA LNPRPs (N = 21, %)	P-value
SMIC after EMR*	36 (9.2)	35 (12.1)	1 (1.0)	0.001
En Bloc Resection	23 (41.1)	4 (11.4)	19 (90.5)	<0.001
R0 Resection	20 (35.7)	2 (5.7)	18 (85.7)	<0.001
Curative Resection	9 (16.1)	2 (5.7)	7 (33.3)	0.010

EMR, endoscopic mucosal resection; LNPRP, large non-pedunculated rectal polyp; SMIC,

submucosal invasive cancer; SRA, selective resection algorithm; UEA, universal endoscopic mucosal resection algorithm *Denominator: Large non-pedunculated rectal polyps which underwent endoscopic mucosal resection