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COMPARISON OF THE COMPLICATIONS OF EN-BLOCK AND PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION OF LARGE LATERALLY SPREADING TUMORS

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Background. Laterally spreading tumors (LSTs) are large, flat colorectal lesions (typically ≥ 15 mm) that become technically challenging when exceeding 20 mm. Endoscopic mucosal resection (EMR) may be performed en bloc or in multiple fragments, piecemeal (pEMR). While en bloc EMR affords complete specimen retrieval and low recurrence (< 5 %) [3], pEMR is often applied to larger LSTs without submucosal invasion but is associated with higher local recurrence rates (10 – 30 %) although adjunctive margin ablation can reduce the risk of local recurrence to less than 3% [1, 2]. Comparative data on adverse events—particularly bleeding and perforation—between these two approaches remain scarce.

Aim. To compare the incidence of intraprocedural bleeding, perforation, and six-month recurrence following en bloc EMR versus pEMR of non-invasive LSTs ≥ 20 mm.

Materials and Methods. Seventy adult patients with non-invasive colorectal LSTs ≥ 20 mm were prospectively and retrospectively enrolled at a single center. All participants provided informed consent. Prior to resection, expert endoscopists assessed lesion morphology, surface pit pattern, and vascular architecture using image-enhanced endoscopy and standardized classification systems. Lesions were removed by en bloc EMR (n = 30; 42.86 %) or pEMR (n = 40; 57.14 %), with technique selection guided by lesion size, morphology, optical evaluation, and endoscopist judgment. In pEMR cases, spray coagulation or argon plasma ablation was applied to the resection margins to mitigate recurrence risk. Statistical analyses were

performed in Statistica 13, with odds ratios (ORs) and 95 % confidence intervals (CIs) calculated via binary logistic regression; $p < 0.05$ was considered significant.

Results. Mean lesion size was 2.13 ± 0.29 mm in the en bloc EMR group and 3.29 ± 1.46 mm in the pEMR group. Non-granular LSTs comprised 60 % of en bloc EMR cases, whereas granular LSTs predominated in the pEMR cohort (57.5 %). Histopathology after en bloc EMR revealed tubular adenomas (46.67 %), tubulovillous adenomas (20 %), serrated adenomas (16.67 %), and hyperplastic lesions (16.66 %); pEMR specimens comprised tubular adenomas (47.5 %), tubulovillous adenomas (40 %), serrated adenomas (7.5 %), and hyperplastic lesions (5 %).

The presence of dysplasia and cancer in situ is shown on the diagram 1.

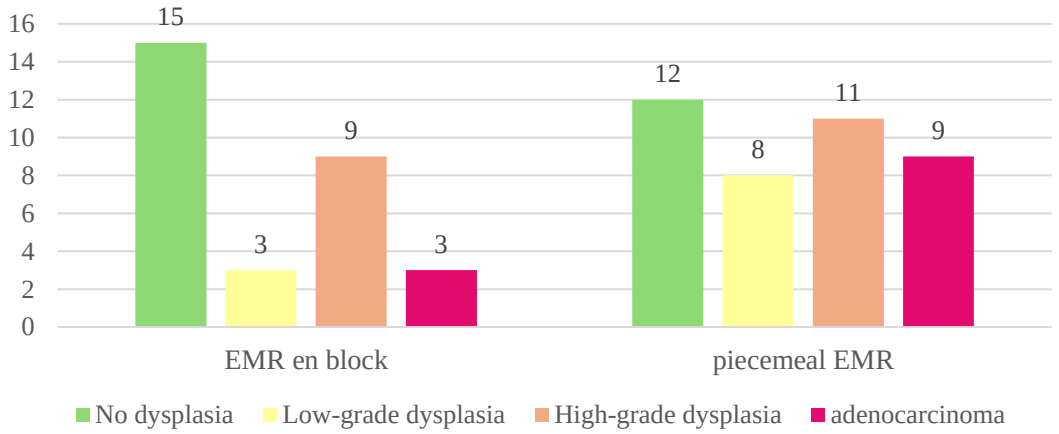

Diagram 1. Presence of dysplasia/cancer in situ in removed neoplasias according to histopathological report

Intraprocedural bleeding occurred in 3.33 % of en bloc EMR and 5 % of pEMR cases. Perforation was observed in 3.33 % of en bloc EMR procedures and in none of the pEMR cases. Six-month recurrence developed in 10 % of pEMR patients and in 0 % of those undergoing en bloc EMR. All adverse events were managed endoscopically.

Table 1

Odds Ratios (ORs), 95% Confidence Intervals (CIs), and P-values for pEMR vs. EMR

Event	OR	95% CI	P-value	Significance
Bleeding	1.28	(0.16 – 10.23)	0.817	Not significant
Perforation	0.24	(0.01 – 6.17)	0.355	Not significant
Recurrence	7.52	(0.39 – 145.29)	0.122	Not significant

As it shown in table 1, no statistically significant diff rences were found between groups for bleeding, perforation, or recurrence.

Conclusions.

Both en bloc EMR and pEMR are safe and feasible for resection of large LSTs, with similarly low rates of bleeding, perforation, and early recurrence. These findings support tailored selection of EMR technique based on lesion characteristics and endoscopist expertise.

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ПОРІВНЯННЯ УСКЛАДНЕНЬ ПРИ ЕНДОСКОПІЧНІЙ РЕЗЕКЦІЇ СЛИЗОВОЇ ФРАГМЕНТАРНО І ЄДИНИМ БЛОКОМ ВЕЛИКИХ НОВОУТВОРЕНЬ ТОВСТОЇ КИШКИ, ЩО ПОШИРЮЮТЬСЯ ЛАТЕРАЛЬНО

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