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ANALYSIS OF FACTORS ASSOCIATED WITH LONG-TERM RECURRENCE AFTER ENDOSCOPIC RESECTION OF LARGE COLORECTAL LATERALLY SPREADING TUMORS

Introduction. Colorectal laterally spreading tumors (LSTs) carry a high risk of high-grade dysplasia and malignant transformation [1]. For non-invasive LSTs, endoscopic resection is the standard of care; the choice of technique is guided by lesion size, morphology and recurrence risk. The most commonly employed techniques are endoscopic mucosal resection (EMR), piecemeal EMR (pEMR), endoscopic submucosal dissection (ESD) and hybrid ESD [2]. Each technique has distinct advantages and limitations and is associated with different recurrence rates [3]. Identification of factors that influence local recurrence would allow more accurate risk stratification and targeted preventive strategies.

Materials and methods. One hundred ten patients with LSTs >20 mm in maximal diameter were included in the study; 70 lesions were granular type (LST-G) and 40 were non-granular (LST-NG). Every lesion underwent expert evaluation using image-enhanced endoscopy [4] and standardized classifications [5, 6] to assess surface pit pattern and vascular pattern. Lesions were resected by EMR (en-

bloc), pEMR, ESD or hybrid ESD according to lesion size and morphology. All procedures were performed under intravenous propofol analgosedation with spontaneous ventilation, supplemental oxygen, and continuous monitoring of vital signs. Surveillance colonoscopy with assessment of the resection site and scar was carried out at 6 months. All recurrences were successfully treated endoscopically. Statistical analysis was performed in Statistica 13. Recurrence was analysed as a binary outcome and tested against histopathological category (categorical), lesion location (categorical), presence of advanced histology (binary), and lesion size (continuous) using the Chi-square test of independence, Pearson correlation coefficient and two-sided t-test; $p < 0.05$ was considered statistically significant.

Results. Mean lesion size was 33.32 ± 15.74 mm. The majority of lesions were treated by pEMR (40.9%) and en-bloc EMR (26.37%). ESD accounted for 22.73% of resections and hybrid ESD for 10%. Lesion distribution was: cecum 15.45%, ascending colon 22.73%, transverse colon 19.09%, descending colon 1.82%, sigmoid colon 8.18%, rectosigmoid flexure 4.55% and rectum 28.18%. The percentage distribution of histopathological types is presented in Figure 1.

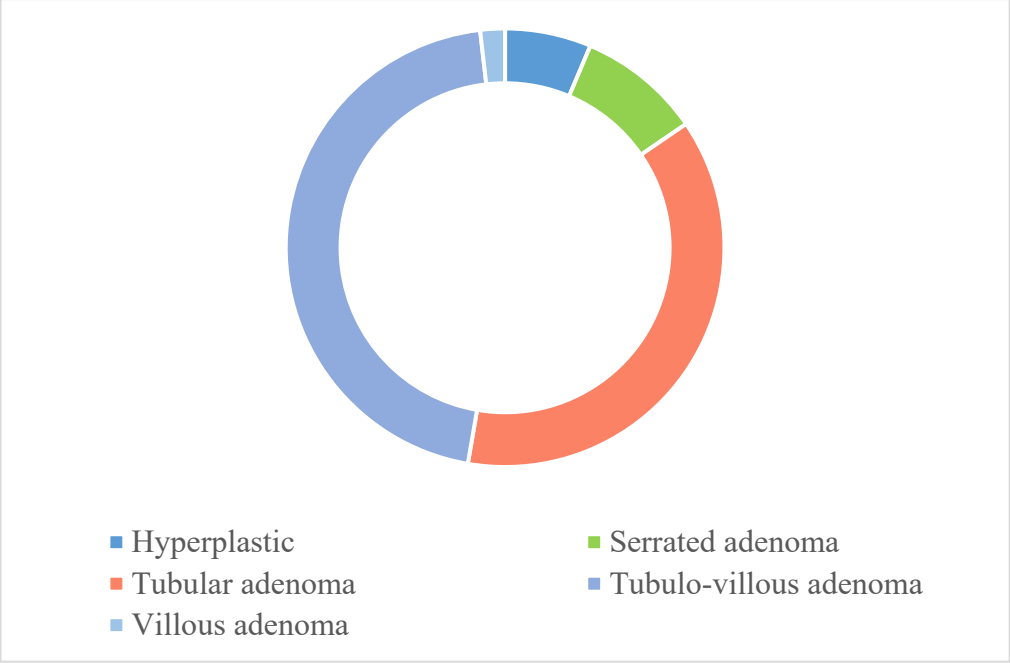

Fig. 1. **Histopathological type**

Histologically, 28.18% of lesions were entirely benign, 14.55% showed low-grade dysplasia, and the remainder demonstrated advanced histological changes: 27.27% high-grade dysplasia and 30% cancer in situ.

Recurrence was detected in 8 cases (7.27%): 8.89% after pEMR, 27.27% after hybrid ESD and 3.45% after classical ESD. All recurrences occurred following

resection of LST-G lesions.

Presence of advanced histology was significantly associated with recurrence: recurrence was more frequent when high-grade dysplasia or cancer was present (Chi-square = 4.23, p = 0.04; Pearson r = 0.24, p = 0.04). Lesion size was also a statistically significant predictor of recurrence (t = 2.56, p = 0.01; Pearson r = 0.29, p = 0.01). No statistically significant association was found between recurrence and lesion location (Chi-square = 6.89, p = 0.33) or histopathological subtype (Chi-square = 3.12, p = 0.37).

Conclusions. Large LSTs frequently harbour advanced histological changes. Recurrences tend to occur after resection of the granular subtype (LST-G), particularly for larger lesions with more advanced histology. In this series, hybrid ESD was associated with a higher proportion of late recurrences compared with competing endoscopic resection methods.

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