

Table 17-1. Therapeutic Results of Precutting Endoscopic Mucosal Resection for Colorectal Neoplastic Tumors and Submucosal Tumors

	COLORECTAL NEOPLASTIC TUMORS	SUBMUCOSAL TUMORS
CASE NUMBER	136	26
AGE, MEAN ± SD	70.3 ± 9.6	61.3 ± 14.0
SEX, MALE/FEMALE, % (N)	57.4 (78)/42.6 (58)	46.1 (12)/53.9 (14)
TUMOR SIZE, MM, MEAN ± SD (RANGE)	16.9 ± 4.5 (5 to 30)	6.1 ± 2.3 (2 to 10)
TUMOR LOCATION (RIGHT-SIDED/ LEFT-SIDED/RECTUM), % (N)	64.0 (87)/20.6 (28)/15.4 (21)	0 (0)/0 (0)/100 (26)
MORPHOLOGY (NONPOLYPOID/ POLYPOID), % (N)	87.5 (119)/12.5 (17)	0 (0)/100 (26)
PROCEDURE TIME (MINUTES), MEAN ± SD (RANGE)	17.5 ± 9.2 (4 to 46)	17.9 ± 9.4 (5 to 35)
INCISION METHOD (PARTIAL/FULL), % (N)	17.6 (24)/82.4 (112)	0 (0)/100 (26)
EN BLOC RESECTION, % (N)	93.4 (127)	100 (26)
COMPLETE RESECTION, % (N)	80.9 (110)	80.8 (21)
PERFORATION, % (N)	0.7 (1)	0 (0)
POSTOPERATIVE HEMORRHAGE, % (N)	1.5 (2)	0 (0)
HISTOLOGY	75 adenomas, 27 SSA/P, 23 Tis, 8 T1, and 3 others	24 carcinoid, 2 others

SD, standard deviation; Tis, tumor in situ.

(Table 17-1). The rates of en bloc and complete (R0) resection were 93.4% (127/136) and 80.9% (110/136), respectively. Perforation and postoperative hemorrhage were reported in 0.7% (1/136) and 1.5% (2/136) of the cases, respectively. The mean tumor size was 6.1 ± 2.3 mm (range: 2 to 10 mm) and mean procedure time was 17.8 ± 9.4 minutes (range: 5 to 35 mins) for the 26 rectal submucosal tumors (see Table 17-1). Similar to precutting EMR for colorectal adenomas, en bloc resection and complete resection were achieved in 100.0% (26/26) and 80.8% (21/26). Histology showed 24 carcinoids and 2 others.

Our scheduled follow-up was performed for all cases. Follow-up colonoscopy was performed 3 to 6 months first, followed by every 12 months. Follow-up analysis was also examined for 58 lesions in patients who underwent ≥2 colonoscopies. The recurrence rate was 1.7% (1/58). The mean follow-up period was 28 months. Other large series showed the recurrence rate for large EMR was around 15% to 18% (the recurrence if seen at follow-up endoscopy is 91% at 6 months and 98% at 12 months).^{15,16}

Training with animal models for precutting EMR is used worldwide and involves using in vivo and ex vivo animal models using harvested organs.¹⁷ Porcine samples are mainly used as in vivo animal models. In vivo models having blood flow are ideal for training; however, they are expensive and inconvenient. In contrast, ex vivo animal models are inexpensive and convenient. This kind of animal model makes precutting EMR and ESD more standardized all over the world.