

Effect of immediate second-look endoscopy to reduce post-endoscopic submucosal dissection bleeding

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Background/Aims: Gastric endoscopic submucosal dissection (ESD) is the one of the curative treatments for superficial gastric neoplasms. Scheduled second-look endoscopy could be performed for prevention of post-ESD bleeding. Few studies have emphasized the role of immediate second-look endoscopy after ESD. The aim of this study was to investigate the efficacy of immediate second-look endoscopy for prevention of post-ESD bleeding.

Methods: The 266 gastric ESD cases were included from December 2007 to March 2012. Immediate second-look endoscopy was defined as repeated upper endoscopy after complete hemostasis of ESD site and formalin fixation of the ESD specimen. Then, if necessary, additional hemostasis was performed during Immediate second-look endoscopy. Early or delayed post-ESD bleeding were classified based on 24 hours within or after the ESD.

Results: The 262 ESD cases were finally and divided into three groups; immediate second-look (n = 79), scheduled second-look (n = 86), and control (n = 97). Post-ESD bleeding occurred in 19 cases (7.3%). Of these, 13 (68.4%) were early post-ESD bleeding. Compared with the control group, the immediate second-look group showed a lower incidence of early post-ESD bleeding (3.8% vs. 0.8%, p = 0.009). In multivariate analysis, immediate second-look endoscopy significantly reduced early post-ESD bleeding (OR 0.39, 95% CI 0.18-0.87, p = 0.022), while resected specimen area $\geq 1,000 \text{ mm}^2$ was an independent risk factor for early post-ESD bleeding (OR 8.98; 95% CI 1.68-48.03, p = 0.010). However, the delayed post-ESD bleeding did not differ between the three groups.

Conclusions: Immediate second-look endoscopy after gastric ESD may contribute to the prevention of early post-ESD bleeding, especially in cases with larger resected specimen area.

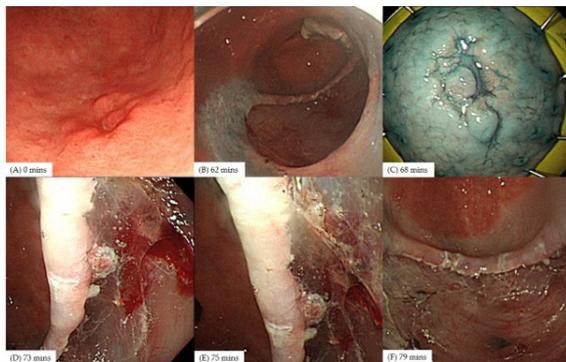


Figure 1 Example of immediate second-look endoscopy. After dissection and hemostasis, the specimen is retrieved and fixed in formalin (A - C). Afterwards, the endoscope is reinserted and the resected ulcer base and margin are inspected (D, E). If necessary, prophylactic hemostasis is performed (F).

Table 1. Multiple logistic regression analysis of risk factors predicted to be associated with the early post ESD bleeding after gastric ESD in immediate second-look group and control group.

Variable	Early post ESD bleeding		Univariate, P	Multivariate P (OR; 95% CI)
	Yes (n=12)	No (n=164)		
Age	59.7 ± 9.7	63.2 ± 10.8	0.274	
Male gender, n (%)	9 (75.0%)	115 (70.1%)	0.721	
Antithrombotic agents	2 (16.7%)	16 (9.8%)	0.446	
Location			0.181	
upper third	0 (0.0%)	11 (6.7%)	0.354	
middle third	2 (16.7%)	60 (36.6%)	0.163	
lower third	10 (83.3%)	93 (56.7%)	0.071	
Histologic type			0.287	
adenoma	6 (50.0%)	110 (70.7%)		
gastric cancer	6 (50.0%)	48 (29.3%)		
Immediate second-look			0.042	0.022 (0.39; 0.18-0.87)
yes	2 (16.7%)	77 (47.0%)		
no	10 (83.3%)	97 (53.0%)		
Total procedure time			0.108	
< 55 min	6 (50.0%)	118 (72.0%)		
≥ 55 min	6 (50.0%)	46 (28.0%)		
Tumor size			0.021	0.378 (2.14; 0.39-11.67)
< 15 mm	2 (16.7%)	84 (51.2%)		
≥ 15 mm	10 (83.3%)	80 (48.8%)		
Resected specimen area			0.016	0.010 (8.98; 1.68-48.03)
< 1,000 mm ²	2 (16.7%)	105 (64.0%)		
≥ 1,000 mm ²	10 (83.3%)	59 (36.0%)		