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Does Prophylactic Clipping Prevent Delayed Bleeding After EMR of Large Proximal Colonic Polyps?

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his article reviews Kemper G, Turan AS, Schreuder RM, et al. The effect of prophylactic clipping on delayed bleeding after proximal colonic endoscopic mucosal resection: a multicenter randomized controlled trial (CLIPPER). Endoscopy. 2025 Jul 22; DOI: 10.1055/a-2637-3180.

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STRUCTURED ABSTRACT

Question: Does prophylactic clip closure after endoscopic mucosal resection (EMR) of large (≥20 mm) nonpedunculated polyps in the proximal colon reduce delayed post-EMR bleeding in routine clinical practice?

Design: Multicenter, randomized controlled clinical trial (Dutch EMR Study Group).

Setting: Conducted at 19 Dutch hospitals (6 academic, 13 non-academic) between 2018 and 2021.

Patients: A total of 356 adult patients with large, nonpedunculated colorectal polyps (≥20 mm) were included.

Intervention: Patients were randomly assigned (1:1) to prophylactic clipping vs no clipping after hot snare EMR.

Outcomes: Primary outcome was delayed bleeding within 30 days (hematochezia, requiring emergency department (ED) visit, transfusion, hospitalization, or reintervention). Secondary outcomes were clip closure rate, perforation, post-polypectomy syndrome, and bleeding severity.

Data Analysis: Statistical comparisons were made using intention-to-treat (ITT) analysis.

Funding: Dutch Digestive Foundation (MLDS) supported this study with a research grant. Olympus (Japan) provided the Quick Clip Pro without charge for this trial. The funder had no role in study design, data collection, analysis, or manuscript preparation.

Results:
Bleeding. Between May 2018 and December 2021, 356 patients (177 clipping vs 179 control) with a median polyp size of 30 mm (IQR 25-40 mm). Delayed bleeding occurred in 9.0% in the prophylactic clipping group vs 6.1% in the control group; $P = 0.30$. All bleeding was mild or moderate without severe bleeding or deaths. No difference between academic and non-academic centers.

Complete clip closure. Achieved in 71.8% of clipping group. Delayed bleeding: 4.8% (complete closure) vs 19.6% (partial closure) vs 6.1% (control) – not statistically significant.

Risk factors for delayed bleeding. Cecal polyps (RR 2.23; 95% CI 1.08–4.61) and anticoagulant use (RR 3.23; 95% CI 1.51–6.91).

Clinical relevance. Prophylactic clipping did not reduce delayed bleeding following EMR of large (≥20 mm) proximal nonpedunculated polyps in this pragmatic, nationwide RCT. Bleeding rates and adverse event severity were similar in both groups.

COMMENTARY

Why Is This Important?

Previous RCTs assessing the benefit of prophylactic clipping in large, nonpedunculated polyps have shown mixed results.[1-4]

- Albéniz et al.: Nonsignificant reduction in bleeding (12.1% → 5%; $P = 0.05$).
- Pohl et al.: Significant reduction for proximal lesions (9.6% → 3.3%; $P = 0.001$).
- Gupta et al.: Significant reduction with clipping (10.6% → 3.4%; $P = 0.03$).
- Feagins et al.: No benefit, possibly due to inclusion of smaller (10–19 mm) lesions.

A pooled individual patient data meta-analysis (IPDMA) found delayed bleeding rates of 3.5% (clipped) vs 9.0% (unclipped) (95% CI 0.17–0.54), suggesting benefit.[5]

However, the current study did not find a significant benefit. Possibly explained by:

- Variability in bleeding definitions among trials.
- Effectiveness depending on complete clip closure, which aids wound healing.
- Variability in clips used in the other studies compared to the 'Olympus Quick Clip Pro' used in this study.
- In this study, even with a high complete closure rate (72%), delayed bleeding was 4.8% vs. 6.1% ($P = 0.13$), while partial closure had a much higher rate (19.6%).

This contrasts with prior pooled data showing partial closure still reduced bleeding (1.7% vs 9.0%; $P = 0.001$).[5]

Key Study Findings

In this multicenter RCT of 356 patients across 19 hospitals, prophylactic clipping after EMR of large (≥20 mm) proximal colon polyps did not reduce delayed bleeding (9.0% vs. 6.1%, $P = 0.30$).

Caution

This study had several important limitations. Although it reflected real-world clinical practice by including both academic and community hospitals, endoscopists varied widely in EMR experience and clip closure proficiency, which may have influenced bleeding outcomes. Endoscopists in training also participated, potentially diluting the protective effect of clipping seen in expert settings. Because randomization occurred after EMR, difficult-to-close lesions may have been unintentionally excluded, introducing selection bias. Additionally, the study could not independently verify closure completeness due to limited image documentation, and center-level differences were not adjusted for

statistically. These factors may have limited the ability to detect a modest true benefit of prophylactic clipping.

My Practice

I primarily utilize cold snare EMR for resection of large non-pedunculated polyps which is associated with significantly lower risk of bleeding.6 When using hot snare EMR, I tend to utilize clips in certain patient subgroups including right colonic lesions, patients on anticoagulants/antiplatelets, and larger polyps. Given these procedures tend to take more time, I prioritize allocating adequate time in my schedule for these cases to ensure adequate clip closure and use clips with anchor prongs (Boston Scientific – Mantis Clip) to aid in defect closure of large EMR sites.

For Future Research

Whether targeted prophylactic clipping in more defined high-risk subgroups (e.g., cecal lesions, large lesions >40 mm, anticoagulant use) reduces bleeding. As well as the role of endoscopist experience and training in optimizing closure success and bleeding prevention. Furthermore, studying the impact of newer clip designs with anchor prongs on risk of delayed bleeding.

Conflict of Interest

Dr. Abu-Heija reports no potential conflicts of interest for this summary.

Abbreviations

ED, emergency department; EMR, endoscopic mucosal resection; IPDMA, individual patient data meta-analysis; ITT, intention-to-treat.

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