Cold Snare Polypectomy for Small Pedunculated Polyps: Next Step in the Cold Revolution?

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In recent years cold snare polypectomy (CSP) for resection of colorectal polyps during colonoscopy has grown in popularity worldwide. CSP has been shown to be superior to cold biopsy for removal of diminutive polyps, and it is quicker and avoids the risk of deep thermal injury, associated with the use of diathermy current during hot snare polypectomy (HSP). Several studies have demonstrated that CSP is equivalent to HSP in achieving complete resection of colorectal polyps up to 9 mm in size [1–3]. The rate of immediate bleeding has been shown to be higher with CSP compared to HSP, but this is rarely clinically significant and can be managed with simple hemostatic measures during the procedure if needed [2, 3]. Thus, European Society of Gastrointestinal Endoscopy (ESGE) recommends the use of CSP for removal of polyps ≤ 9 mm [4]. Piecemeal cold snare endoscopic mucosal resection has also been shown to be an effective treatment for larger sessile serrated lesions [5].

However, to date, most studies examining the safety and efficacy of CSP have included only sessile or flat-elevated polyps. Pedunculated polyps are traditionally felt to have an increased risk of post-polypectomy bleeding due to the presence a dominant feeding blood vessel in the stalk, and hence, HSP is recommended to ensure cauterization of the vessel. The morphology of pedunculated polyps allows placement of the snare away from the colonic wall to minimize the risk of deep thermal injury. Therefore, ESGE recommends the use of HSP in pedunculated polyps(3). However, there is a paucity of literature on the choice of polypectomy technique in small and low-risk pedunculated polyps. This traditional view of pedunculated polyps carrying increased bleeding risk was not supported by the findings of a very large study of polyps removed in the UK bowel cancer screening

program which found size to be the only significant risk factor [6].

In this issue of *Digestive Diseases and Sciences*, Arimoto et al. report the findings of a large retrospective study comparing CSP with HSP in pedunculated polyps of < 10 mm with a thin stalk [7]. In their center, CSP was used for pedunculated polyps with stalks thinner than the diameter of the sheath (2.6 mm). The primary outcome was the incidence of delayed post-polypectomy bleeding within 2 weeks, and the secondary outcomes included the incidence of immediate bleeding (defined as spurting or oozing that continued for more than 30 s during procedure) and the pathological margins of the resected polyps.

Arimoto et al. [3] noted a significantly higher cases of delayed post-polypectomy bleeding in HSP compared to CSP group (4.7% vs. 0%). Immediate bleeding was significantly higher in CSP group (38.2% vs. 3.5%). Of note, the rate of prophylactic clipping prior to polypectomy was higher in HSP compared to CSP (20.9% vs. 0%) which was a potential confounding factor in the study. Additionally, almost all HSP cases had prophylactic clipping after the procedure when compared with CSP (98.8% vs. 44.1%). This rate of prophylactic clipping for small lesions may be considered higher than would be usual practice in most centers and has cost implications, particularly in less well-resourced healthcare settings. After performing univariate analyses on variables that may influence the risk of delayed post-polypectomy bleeding, HSP was found to be the only significant risk factor. This is despite the almost universal use of prophylactic clipping after the procedure in HSP. In contrast a meta-analysis of HSP vs. CSP cases in sessile/flat polyps found no difference in the delayed post-polypectomy bleeding rate.

The characteristics of patients who undergo colonoscopy have changed over time. More colonoscopies are now performed in patients with multiple comorbidities who are prescribed polypharmacy including antithrombotic medications. Therefore, undertaking polypectomy on patients with

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antithrombotic medication can be a challenge especially when stopping such medication confers significant risk of vascular events. Arimoto et al. also reported interesting findings in their study. In their CSP patient group, 21% of patients were on taking either antiplatelets, anticoagulation, or both (excluding aspirin). Despite continuing antithrombotic agents around the time of procedure, there was no post-polypectomy bleeding noted in the patients taking antiplatelets or anticoagulants. It seems that CSP of subcentimeter pedunculated polyps, albeit with prophylactic clipping, could potentially be safe in patients whose antithrombotic agents are not withheld for the procedure. Two previous studies have examined the safety of CSP for removal of non-pedunculated polyps in patients who remain on anticoagulants. Horiuchi et al. found significantly increased risk of immediate and delayed bleeding with HSP compared to CSP in patients on warfarin [8]. Takeuchi et al. compared a regime of HSP and withdrawal of oral anticoagulation plus heparin bridging with CSP and continuation of anticoagulation. Major bleeding was significantly more common in the HSP group, despite the interruption of anticoagulation for the procedure in this group, and an increase in prophylactic hemostatic measures [9]. These findings provide further evidence that stopping anticoagulants/antiplatelets prior to removal of small polyps may not be necessary and indeed the risks of stopping antiplatelets and anticoagulants in patients taking these for secondary prevention, may outweigh the risks of clinically significant bleeding. Further large prospective studies are required in this area, although there are already notable differences between European guidelines (which recommend cessation of anticoagulants) and Japanese guidelines (which advise continuation of anticoagulation) prior to removal of small colonic polyps [4, 10].

Complete resection of the polyp is an essential requirement of polypectomy. Several studies compare complete resection rate of HSP and CSP in non-pedunculated polyps and shown CSP to be non-inferior to HSP [1–3]. However, little is known about the complete resection rate in pedunculated polyps. Arimoto et al. reported that all the 102 polyps in CSP group had negative resection margin. This supports that CSP results in similar complete resection rate compared to HSP in pedunculated polyps.

The retrospective nature of the study by Arimoto et al. means the results should be interpreted with some caution, and further prospective randomized studies are required. The exclusion of polyps with stalk width of > 2.6 mm means that the findings apply to a relatively small proportion of colonic lesions, and pedunculated polyps with thicker stalks may

still require the use of diathermy to allow resection, irrespective of any bleeding risk. Arimoto et al. have demonstrated some evidence of the safety and efficacy of CSP in small pedunculated polyps, including some patients taking anticoagulation. The use of CSP for removal of small pedunculated polyps may become a further step in the cold revolution.

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