The 9th JGES-ASGE Joint Symposium

Comparative safety and efficacy of cold polypectomy techniques and it’s divergence between Japan and U.S.

Moderators: President, American Society for Gastrointestinal Endoscopy (ASGE) /

Houston Methodist Gastroenterology Associates, USA   Karen L. Woods
Gastrointestinal Center, Sano Hospital, Japan   Yasushi Sano
Cold snare polypectomy for diminutive colorectal polyps

Toshio Uraoka

Division of Endoscopy, Shizuoka Cancer Center, Japan

Introduction: Cold snare polypectomy (CSP) is often observed without any treatment in consideration of high complication rates in endoscopic treatment such as en bloc resection (EMR) and endoscopic mucosal resection (EMR). However, it becomes more difficult to resect after tumor growth or many biopsies. Cold snare polypectomy (CSP) has been reported to minimize the risk of complications and has become one of the standard treatment for small colorectal polyps.

Materials and Methods: The aim of this study was to evaluate the safety of CSP for SNADET. Endoscopically diagnosed small dual-adenomas ≤ 10 mm in size were enrolled in this study. The primary endpoint was the rate of delayed complications. All patients provided written informed consent. This study was approved by the ethic committee of Shizuoka Cancer Center (no. 27-39-2013).

Results: A total of 21 patients were enrolled from October 2015 to February 2017. Lesion’s location was pubis 2-2nd portion 19, and median lesion’s size was 8 mm (range: 3-10). Pretreatment biopsy was performed in 81%. CSP was attempted for all lesions, and 3 lesions could not be resected without electrocautery and were removed by conventional EMR. Prophylactic clip closure was performed in 71%. Median procedure time was 13 minutes (range: 3-29), and median resected specimen size was 12 mm (range: 8-20). The rate of en bloc resection was 95%. No adverse events were observed after non-neoplastic lesions, and delayed bleeding or perforation were observed after CSP. Histopathological examinations revealed 15 adenomas, 4 cancers (intraocular), 3 non-neoplastic lesions. The horizontal margins were negative 9/ positive 1/undetermined 11. The vertical margins were negative in all cases. 3 months after CSP, only 1 local recurrence was detected and treated endoscopically.

Conclusion: CSP has three advantages: 1) it did not require electrocautery; therefore, there was no possibility of delayed bleeding due to the thermal burn effect. 2) the depth of the layer cut by CSP was shallower than that cut by ESD; and 3) the mucosal defect caused by CSP was smaller than that caused by ESD, making its closure causing normal endoscopy.

CSP could be performed safely for small SNADET. Efficacy of CSP should be evaluated at next phase III study.

Cold snare polypectomy for subcentimeter colorectal polyps

Department of Gastrointestinal Oncology, Osaka International Cancer Institute, Japan

Background and Aims: The optimal technique for cold snare polypectomy (CSP) for small colorectal polyps is unknown. The aim of this study was to assess the safety and quality of CSP using a dedicated cold snare based on clinical outcomes.

Method: Study 1: Patients undergoing CSP for colorectal polyps ≤ 10 mm without any polypectomy procedures were treated with CSP and followed-up. This was a retrospective analysis of a prospectively collected cohort based on a historical comparison of two time periods. A total of 100 patients were included (50 in 2012 and 50 in 2013). Cold snare was used between 2014 and 2016. Study 2: We retrospectively analyzed non-pedunculated polyps 4-10 mm in diameter resected using a dedicated cold snare in 2017. Mucosal defect size was measured immediately after procedure. The resection margin completeness is one of the issues for CSP to be a standard therapy expected with CSP, which uses no electrocautery. So, removal of CSP may cause a polyp residue because burning effect cannot be expected with CSP, which uses no electrocautery. So, removal completeness is one of the issues for CSP to be a standard therapy for subcentimeter polyps in Japan.

In our single-center prospective study involving 307 subcentimeter polyps in 120 patients, we investigated polyp residue after CSP by additional endoscopic mucosal resection (EMR). The results indicated that 67% of lateral margin on the specimen resected with CSP could not be adequately assessed, but actual polyp residue was observed only in 34% Inter-observer agreement between incomplete resection and lateral polyp margins that were inadequate for assessment was poor (κ = 0.067 95% CI 0-0.04).

Therefore, we concluded that adequate evaluation of resection may not be routinely possible using the specimen removed by CSP. Furthermore, we investigated the non-inferiority of CSP on complete removal of subcentimeter colorectal polyps compared to hot snare polypectomy (HSP) in a multicenter randomized controlled trial (RCT), involving 796 polyps in 538 patients at 12 institutions. We assessed complete removal of CSP and HSP by two additional biopsies following randomly assigned polypectomy procedure in the RCT. Complete resection rate was 98.4% in the CSP group and 97.2% in the HSP group. Inter-group difference for the polyp resection rate was significant (93.4% for CSP vs. 87.8% for HSP, p < 0.001). Therefore, we concluded that the complete resection rate is not inferior to that of HSP. Additionally, the resection time for each polyp was significantly shorter with CSP (1.0 vs. 1.4 minutes, p < 0.001). Postoperative bleeding requiring hemostatic measures occurred in only 0.5% (2/402). According to these evidences, even if in patients taking antithrombotic agents, we think that CSP should be one of the standard procedures for removal of subcentimeter colorectal polyps.
The most common approach to management of colonic polyps >1 cm in size is en-bloc or piecemeal resection using electrocautery, performed through a polypectomy snare (hot polypectomy). The traditional rationale for hot polypectomy includes provision of hemostasis through thick, tissue, prevention of bleeding by instant vascular coagulation, and thermal ablation of residual microscopic tissue. However, the most frequent adverse events were incomplete polyp removal (3%-99%), bleeding (2.9%-50%), post-polypectomy syndrome, and perforation and resultant peritonitis. The bleeding mechanism of delayed bleeding is sluggish of the post-cautery coagulation and post-polypectomy syndrome and perforation result from thermal injury to and transaction of the muscularis propria. These AEs are very unlikely to occur when electrocautery is no longer used. Recognizing that it is possible to remove pieces of tissue 1 cm or less with cold techniques, cold snare resection of large polyps is feasible in the majority of cases. Submucosal lifting, several small studies have demonstrated the feasibility of endoscopic mucosal resection of larger polyps without cautery. Our group previously published a retrospective study demonstrating the feasibility and safety of removing polyps > 1 cm from hyperplastic polyps in patients with duodenal or colonic adenomas. We also presented an abstract of the technique in removing large duodenal polyps (primarily those over the age of 65) and most in need of screening for adenomas (65%). There were no AAs among all 73 patients enrolled and only one hemostatic clip was used out of all 94 polypec- tomies. The residual or recurrent adenoma rate in this study was 9.7%. Risk factors for incomplete resection included large polyp size and attempted prior resection, similar to previously reported studies using traditional hot polypectomy techniques.

There is potential overall cost reduction, as cold snare appears to obviate the need for prophylactic clipping potentially saving hundreds or even thousands of dollars, depending on the number of clips that would have been required to close a large defect. Addi- tionally, the time required to perform the procedure, as clipping a large defect can be time and labor intensive, is likely reduced. Given its potential safety advantages, avoidance of cautery may immediately increase polypectomy rates. However, in order for cold polypectomy to have a real impact on clinical practice, further studies must be done prospectively to reproduce prior studies in other centers. In a multicenter randomized controlled trial comparing conventional cautery-based endoscopic mucosal resection with cold snare resection of large polyps, enrollment is anticipated to begin in the spring of 2018.

**IS1-6** Optimizing the safe and efficacious removal of diminutive and small colorectal lesions - learning and using cold snare polypectomy

University of California, San Francisco, Veterans Affairs San Francisco Health Care System, USA

Tonya R. Kaltenbach

Colonoscopy with polypectomy reduces colorectal cancer (CRC) incidence and mortality. It is the cornerstone of effective prevention. The lifetime risk to develop CRC in the United States is approxi- mately 1 in 20; with 90% of cases occurring over the age of 50 years. In the United States, colonoscopy has become the most commonly used screening procedure and an estimated 23 to 40% of adults over 50 years have at least one adenomatous polyp. The recent reductions in CRC incidence and mortality have been largely attributed to the uptake of CRC screening with polypec- tomies. The techniques and outcomes in the removal of polyps using colonoscopy, however, remain understudied and thus the practice is widely variable. Often driven by physician preference based on prior teaching and on trial and error, not on standardized training or data. In a 2003 survey of American gastroenterologists, the polypectomy technique varied most significantly for polyps 4-6 mm (32%, P < .0001). There were no AEs among all 73 patients enrolled and only one hemostatic clip was used out of all 94 polypectomies. The residual or recurrent adenoma rate in this study was 9.7%. Risk factors for incomplete resection included large polyp size and attempted prior resection, similar to previously reported studies using traditional hot polypectomy techniques.

There is potential overall cost reduction, as cold snare appears to obviate the need for prophylactic clipping potentially saving hundreds or even thousands of dollars, depending on the number of clips that would have been required to close a large defect. Additionally, the time required to perform the procedure, as clipping a large defect can be time and labor intensive, is likely reduced. Given its potential safety advantages, avoidance of cautery may immediately increase polypectomy rates. However, in order for cold polypectomy to have a real impact on clinical practice, further studies must be done prospectively to reproduce prior studies in other centers. In a multicenter randomized controlled trial comparing conventional cautery-based endoscopic mucosal resection with cold snare resection of large polyps, enrollment is anticipated to begin in the spring of 2018.