

World Journal of *Gastroenterology*

World J Gastroenterol 2018 April 14; 24(14): 1491-1582



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World Journal of Gastroenterology (*World J Gastroenterol*, *WJG*, print ISSN 1007-9327, online ISSN 2219-2840, DOI: 10.3748) is a peer-reviewed open access journal. *WJG* was established on October 1, 1995. It is published weekly on the 7th, 14th, 21st, and 28th each month. The *WJG* Editorial Board consists of 642 experts in gastroenterology and hepatology from 59 countries.

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World Journal of Gastroenterology (*WJG*) is now indexed in Current Contents[®]/Clinical Medicine, Science Citation Index Expanded (also known as SciSearch[®]), Journal Citation Reports[®], Index Medicus, MEDLINE, PubMed, PubMed Central and Directory of Open Access Journals. The 2017 edition of Journal Citation Reports[®] cites the 2016 impact factor for *WJG* as 3.365 (5-year impact factor: 3.176), ranking *WJG* as 29th among 79 journals in gastroenterology and hepatology (quartile in category Q2).

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NAME OF JOURNAL
World Journal of Gastroenterology

ISSN
ISSN 1007-9327 (print)
ISSN 2219-2840 (online)

LAUNCH DATE
October 1, 1995

FREQUENCY
Weekly

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PUBLICATION DATE
April 14, 2018

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Should hot biopsy forceps be abandoned for polypectomy of diminutive colorectal polyps?

Vasileios Panteris, Antonios Vezakis, JK Triantafyllidis

Vasileios Panteris, Department of Gastroenterology, Sismanogleio-A.Fleming General Hospital, Attiki, Athens 15126, Greece

Antonios Vezakis, Department of Surgery, Aretaieio Hospital, Attiki, Athens 11528, Greece

JK Triantafyllidis, Department of Gastroenterology, Iaso General Hospital, Attiki, Athens 15562, Greece

ORCID number: Vasileios Panteris (0000-0003-1165-8927); Antonios Vezakis (0000-0003-0958-7664); JK Triantafyllidis (0000-0002-9115-232X).

Author contributions: All authors were involved in the article conception and design; Panteris V drafted the article; Vezakis A and Triantafyllidis JK provided final approval of the article.

Conflict-of-interest statement: The authors declare that there are no conflicts of interest related to this study.

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Manuscript source: Unsolicited manuscript

Correspondence to: Vasileios Panteris, MD, FEBG, Consultant, Doctor, Staff Physician, Department of Gastroenterology, Sismanogleio-A.Fleming General Hospital, Sismanogliou 37, Attiki, Athens 15126, Greece. vasileios.panteris@gmail.com
Telephone: +30-6937383262

Received: March 8, 2018

Peer-review started: March 9, 2018

First decision: March 14, 2018

Revised: March 19, 2018

Accepted: March 25, 2018

Article in press: March 25, 2018

Published online: April 14, 2018

Abstract

Standardized approach to polypectomy of diminutive colorectal polyps (DCPs) is lacking since cold biopsy forceps have been associated with high levels of recurrence, hot biopsy forceps are considered inadequate and risky and cold snaring is currently under investigation for its efficacy and safety. This has led to confusion and a gap in clinical practice. This article discusses the usefulness and contemporary practical applicability of hot biopsy forceps and provides well-intentioned criticism of the new European guidelines for the treatment of DCPs. Diminutive colorectal polyps are a source of frustration for the endoscopist since their small size is accompanied by a considerable risk of premalignant neoplasia and a small but non-negligible risk of advanced neoplasia and even cancer. Since the proportion of diminutive colorectal polyps is substantial and exceeds that of larger polyps, their effective removal poses a considerable workload and a therapeutic challenge. During the last decade, the introduction of cold snaring to routine endoscopy practice has attempted to overcome the use of prior techniques, such as hot biopsy forceps. It is important to recognize that with the exception of endoscopic methods that are obviously unsafe and inadequate to serve their purpose, all other interventional endoscopic methods are operator-dependent in the sense that specific expertise and training are obligatory for the success of any therapeutic intervention. Since relevant publications on hot biopsy forceps are still in favor of its careful use, as it has not yet demonstrated inferiority compared with newer techniques, it would be prudent

for any medical practitioner to evaluate the available tools and judge any new proposed technique based on the evidence before it is adopted.

Key words: Hot forceps; Polypectomy; Endoscopy; Colon neoplasia; Diminutive polyps

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Core tip: Selection of the appropriate endoscopic method for the removal of diminutive colorectal polyps (DCPs), according to the prospective prevention of colorectal cancer, is still a debatable topic. The new recommendation released by ESGE (European Society of Gastrointestinal Endoscopy, 2017) concerning the use of hot biopsy forceps (HBF) is expected to create a shift in daily clinical practice since this technique is still popular and viable for the removal of DCPs. In this letter, the authors request reconsideration of this policy in response to published data referring on the efficacy and safety of HBF and recommend a more cautious approach and transition to prevent the premature acceptance of alternative techniques.

Panteris V, Vezakis A, Triantafyllidis JK. Should hot biopsy forceps be abandoned for polypectomy of diminutive colorectal polyps? *World J Gastroenterol* 2018; 24(14): 1579-1582 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v24/i14/1579.htm> DOI: <http://dx.doi.org/10.3748/wjg.v24.i14.1579>

TO THE EDITOR

In a recent article^[1], European Society of Gastrointestinal Endoscopy has released guidelines for colorectal polypectomy, which include a strong recommendation against the use of hot biopsy forceps (HBF) based on the GRADE system of clinical evidence. The release of guidelines by professional medical societies is acknowledged by the medical community as policy that functions as a deterrent to specific practices. With respect to that notion, the abandonment of a useful technique such HBF, which for many decades, has contributed to the polypectomy of diminutive colorectal polyps (DCPs), should be considered in an appropriate conscientious and judicious manner.

The reasons for the negative criticism are based on the following: (1) unacceptably high risks of adverse events (AEs); (2) inadequate tissue sampling for histopathology (ITSH); and (3) high incomplete resection rates (IRR). The studies cited in support of the recommendation are 4 human studies (1 RCT non-blinded with a small number of patients^[2], one anecdotal report^[3] and 2 observational studies^[4,5]), 3 of which have already been determined to be of low

Table 1 List of articles presented in support of European Society of Gastrointestinal Endoscopy guidelines

Ref.	Study design Intervention	No of polyps and Level of evidence patients	
Paspatis <i>et al</i> ^[2] , 2005	Randomised trial Bipolar electro-coagulation vs HBF	38 vs 37 rectal DCPs among 50 patients	High quality
Peluso <i>et al</i> ^[3] , 1991	Anecdotal report HBF	62 DCPs among 39 patients	Low quality
Yasar <i>et al</i> ^[4] , 2015	Observational study HBF vs JBF	237 DCPs among 179 patients	Low quality
Weston <i>et al</i> ^[5] , 1995	Observational study HBF vs CBF	1964 DCPs among 687 patients	Low quality
Savides <i>et al</i> ^[6] , 1995	Animal study Canine model	231 biopsies in 16 right colotomies of 8 mongrel dogs	Not rated in Grade system
Metz <i>et al</i> ^[7] , 2013	Animal study Porcine model	82 artificial polyps, sized 5-8 mm	Not rated in Grade system

JBF: Jumbo biopsy forceps; CBF: Cold biopsy forceps; DCPs: Diminutive colorectal polyps; HBF: Hot biopsy forceps.

quality, and 2 animal studies^[6,7] (Table 1). The overall quality of evidence was graded as high. Actually, apart from the methodological quality of the individual studies and the questionable generalizability, these studies are heterogeneous in terms of ITSH and IRR. Moreover, all studies are consistent with respect to the absence of perforations, and the few bleeding episodes (0.36%) in one of the studies occurred in patients taking antiplatelets^[5].

HBF is considered an alternative method for the removal of DCPs (≤ 5 mm). According to different surveys, it seems that HBF is still a viable option that is preferred by 30%-50% of endoscopists^[8-10]. The two studies, with the largest number of patients and polyps^[11,12] showed no complications. The study by Wadas *et al*^[13], which reports a 0.38% major bleeding rate and a 0.05% perforation rate, refers to a questionnaire-type survey from an era (1988) when the HBF technique was not standardized. Even this perforation rate is lower than the reported 0.15% for therapeutic colonoscopies^[14]. The rate of AEs is also lower compared with that for snare polypectomies (3.3 vs 4.5/1000), and AEs are more likely to occur when low-volume endoscopists use HBF than when high-volume endoscopists (> 300 polypectomies/year) use the technique^[15].

HBF has been reported to have a 17% IRR when white coagulum is present^[16] and a variable rate of ITSH that ranges from 0.19%-13%-26.7% in studies with different mean polyp sizes^[11,17,18]. It is acknowledged that a significant predictor of histological misinterpretation is decreasing polyp size with a cut off limit of 2

mm. It is important to mention that even in studies with high reported rates of cautery artifacts^[4], the results showed that histological diagnosis could indeed have been reached in all specimens.

The new rival of HBF, namely, the cold snare polypectomy (CSP), has thus far presented disparate results for IRR at 3.4%-40%, retrieval failure at 1%-13%, and bleeding rates of 1.2%-20% for DCPS^[19-24]. In the sole non-blinded RCT, in which HBF and CSP are directly compared, the IRR in the ITT analysis was 29.9% for CSP, which is still unacceptably high. However, the bleeding rates were statistically insignificant at 8.1% vs 8.8% for HBF and CSP, respectively, and no perforations were observed in either study arm^[25].

In conclusion, it seems that available evidence is not adequate to exclude hot biopsy forceps from the routine endoscopy practice. We either need more prospective studies exhibiting beneficial comparisons with new techniques or we need to focus on proper utilization of HBF by more experienced endoscopists.

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28192823 DOI: 10.1055/s-0043-100215]

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P- Reviewer: Bujanda L, Facciorusso A, Velayos B

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ISSN 1007-9327

