

Endoscopic Resection of Malignant Colonic Polyps: Why Clinicopathological Correlation (CPC) Is Needed for Optimal Treatment of CRC?

David F. Schaeffer · Fergal Donnellan

Published online: 21 July 2015

© Springer Science+Business Media New York 2015

The number of screening colonoscopies, one of the key colorectal cancer (CRC) preventive strategies, has risen continuously over the past decades to the point that colonoscopy now ranks as one of the most common endoscopic procedures performed in many countries. With the increasing number of subjects being screened with colonoscopy, more polyps will be identified which must be removed. Some of these polyps will be large or complicated, or even early cancers, which will require advanced endoscopic procedures such as endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD) or surgical resection, which can be curative if submucosal invasion (T1) is absent [1].

In this issue of *Digestive Diseases and Sciences*, Kim et al. [2] compare the clinical outcomes between endoscopic and surgical resection of submucosal colorectal cancers. In a retrospective study in which 87 patients underwent endoscopic resection and 171 underwent surgical resection, only those cancers with a tumor depth of sm1 (superficial one-third of submucosal layer) or within 1 mm of the muscularis mucosa were included. Cancers with unfavorable histology such as poor differentiation, lymphatic or vascular invasion, and tumor budding were excluded. As expected, the authors noted that shorter

hospital stays occurred in the endoscopic group. Although the frequency of adverse effects did not differ between the two groups, adverse effects were more severe in the surgical group, (e.g., requirement for ileostomy versus post-polypectomy syndrome). Long-term outcomes, including 5-year recurrence-free and overall survival, did not differ between the two groups. On the basis of these data, the authors concluded that endoscopic resection may be considered as the first choice of treatment of superficial submucosal colorectal cancer in the absence of unfavorable histology, a recommendation in keeping with previous studies demonstrating safe and efficacious endoscopic treatment of early CRCs, provided that the lesions are completely removed and the histology is favorable [3, 4].

Nevertheless, the current study raises several interesting points. First, the pathology was not reviewed in every patient, but rather limited to those that had recurrent and/or metastatic disease. While the authors concede that this is a limitation of their study, it raises important questions such as why there is no universal acceptance among pathologists of assessing high-risk pathological features such as unfavorable histology in all malignant polyps, an unfortunate oversight that might be overcome if closer collaboration and communication existed between gastroenterologist and pathologists.

Lymphatic and venous invasion, as well as higher-grade tumor differentiation, have been well established to portend a worse prognosis in CRC [1]. More recently, the extent of submucosal invasion (especially width) and the presence of high-grade tumor budding (the presence of small discrete clusters of tumor cells at the invasive edge) have been confirmed as independent prognostic factors for the risk of regional lymph node metastasis [5, 6]. While considerable debate is still present within the pathology community on the exact definition of high-grade tumor budding, it is now

D. F. Schaeffer
Division of Anatomic Pathology, Vancouver General Hospital,
Vancouver, BC, Canada

D. F. Schaeffer · F. Donnellan
The University of British Columbia, Vancouver, BC, Canada

F. Donnellan (✉)
UBC Division of Gastroenterology, Vancouver General
Hospital, Vancouver, BC, Canada
e-mail: fergal.donnellan@vch.ca

well accepted within the gastrointestinal pathology community that tumor budding, when evaluated in conjunction with other prognostically significant histopathological features, can identify a subset of high-risk patients requiring segmental resection including nodes [6]. As such, a detailed understanding of these features is of the utmost importance by both the pathologist and the gastroenterologists.

Secondly, piecemeal resection was reported for 10.3 % of cases with argon plasma coagulation (APC) used in ~5 % of cases in the Kim study [2]. Mannath et al. [7] reported a recurrence rate of 18 % following endoscopic piecemeal resection of colonic adenomas. Moss et al. [8] reported a similar recurrence rate, also reporting that APC use was a risk factor for recurrent or residual disease, according to the multivariate analysis. Again, the authors acknowledge that piecemeal resection may not be a good option for definitive management of superficial submucosal cancers and that ESD should be used to achieve an *en bloc* resection. The recurrence rates with the use of piecemeal resection and APC are unacceptable for management of colorectal cancer. Moreover, ESD is not a widely available procedure in Western endoscopy centers.

Finally, the study is subject to the usual biases inherent in the retrospective study design. For example, the lesion size was significantly greater in the surgical group, suggesting that a selection bias may have been present since endoscopic resection may have been reserved for smaller and less difficult lesions.

Despite these limitations, the study is valuable in demonstrating that endoscopic resection is a feasible definitive treatment option in managing superficial submucosal colorectal cancers with superior short-term outcomes and comparative long-term outcomes to surgical resection. Yet, since this is an evolving management option, successful treatment should be taken cautiously. *En*

bloc resection should be considered a necessity for appropriate specimen evaluation and to minimize recurrent or residual disease. Close collaboration between gastroenterologists and pathologists familiar with gastrointestinal lesions is vital for accurate pathological diagnosis.

Conflict of interest The authors have no conflicts of interest to declare.

References

1. Mou S, Soetikno R, Shimoda T, et al. Pathologic predictive factors for lymph node metastasis in submucosal invasive (T1) colorectal cancer: a systematic review and meta-analysis. *Surg Endosc.* 2013;27:2692–2703.
2. Kim JB, Lee HS, Lee HJ, et al. Long-term outcomes of endoscopic versus surgical resection of superficial submucosal colorectal cancer. *Dig Dis Sci.* (Epub ahead of print). doi:10.1007/s10620-015-3530-2.
3. Meining A, von Delius S, Eames TM, et al. Risk factors for unfavorable outcomes after endoscopic removal of submucosal invasive colorectal tumors. *Clin Gastroenterol Hepatol.* 2011;9:590–594.
4. Tytherleigh MG, Warren BF, Mortensen NJ. Management of early rectal cancer. *Br J Surg.* 2008;95:409–423.
5. Ueno H, Mochizuki H, Hashiguchi Y, et al. Risk factors for an adverse outcome in early invasive colorectal carcinoma. *Gastroenterology.* 2004;127:385–394.
6. Mitrovic B, Schaeffer DF, Riddell RH, et al. Tumor budding in colorectal carcinoma: time to take notice. *Mod Pathol.* 2012;25:1315–1325.
7. Mannath J, Subramanian V, Singh R, et al. Polyp recurrence after endoscopic mucosal resection of sessile and flat colonic adenomas. *Dig Dis Sci.* 2011;56:2389–2395.
8. Moss A, Williams SJ, Hourigan LF, et al. Long-term adenoma recurrence following wide-field endoscopic mucosal resection (WF-EMR) for advanced colonic mucosal neoplasia is infrequent: results and risk factors in 1000 cases from the Australian Colonic EMR (ACE) study. *Gut.* 2015;64:57–65.