



# Management of malignant colorectal polyps—how to decide if polypectomy is enough?

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Among adults 50 years of age and older, the use of colonoscopy as a method of screening for colorectal cancer increased from 19.1% in 2000 to 60.3% in 2015 (1). Since the number of patients being screened with colonoscopy has raised, more polyps will be diagnosed and removed. Hence an increase in the incidence of malignant polyps is also expected (2,3). Whether surgical resection or advanced polypectomy alone is a safe treatment, is still a controversy, and several papers are trying to find the answers (4-9).

The original paper by Lopez *et al.* (10) describes time trends in the incidence of colorectal malignant polyps (defined as lesions with a benign endoscopic appearance and pathological evidence of malignant cells invading the submucosa) before and after the introduction of a colorectal cancer screening program and assesses the survival and recurrence after endoscopic or surgical resection in patients with malignant polyps. In this retrospective study, they included all patients with malignant polyps in a “well-defined French population” of half a million people over a 30-year period. They found 411 patients diagnosed with malignant polyps. In patients aged 50–74 years, the incidence of malignant polyps doubled after the introduction of the mass-screening from 5.43 to 10.87 per 100,000. Concerning long-term outcomes, in patients with pedunculated malignant polyps and a pathological margin  $\geq 1$  mm, the 5-year cumulative cancer recurrence rate was 8.2% for surgical and 2.4% for endoscopic resection ( $P=0.230$ ). For patients with sessile malignant polyps, it was 3.0% after surgical resection, 8.6% after endoscopic resection and 17.9% after trans-anal resection ( $P=0.016$ ). They also

observed that recurrence rate decreased for patients with sessile malignant polyps from 11.3% [1982–2002] to 1.2% [2003–2009] ( $P=0.010$ ) and remained stable for pedunculated malignant polyps at 4.6% and 6.7%, respectively. Five-year net survival was 81.0% when pathological margins were  $<1$  mm and 95.6% when  $\geq 1$  mm ( $P=0.024$ ). On the basis of this data, the authors concluded that outcomes following polypectomy with margins  $\geq 1$  mm are similar to those following surgery in the general population and that endoscopic resection needs to be completed by surgery if pathological margins are less than 1 mm.

Some points are interesting in this paper. The fact that using a well-defined population with a complete cancer registry, assuming that almost all newly diagnosed cases were recorded, makes this a study free of selection and referral bias. Also, the authors were successful in showing the importance of a colorectal mass-screening program, since the incidence of malignant polyps in the population covered by the screening doubled after the program was introduced, thus allowing early cancer detection and treatment.

Another point to highlight is that the database had pathology information for all patients, regarding histological subtype of adenoma and status of the pathological margins, and only 18 patients did not have information about gross morphology (sessile/pedunculated). As a limitation of the study by its retrospective nature, the authors inform that it was not possible to analyze some important pathological features, absent in pathology reports, as the impact of lymphovascular invasion, the level of tumor invasion in

the submucosa [Haggitt (11) and Kikuchi (12) levels], the level of differentiation and tumor budding on recurrence. Although the authors concede that the prognostic significance of this histological criteria is not clear and there are large inter-observer variations, several papers have shown the importance of unfavorable histological features predicting worse prognosis, especially increased risk of regional lymph node metastasis (2,6,8,13-16). The level of submucosal invasion, and the presence of high-grade tumor budding have been confirmed as independent prognostic factors for the risk of regional lymph node metastasis (17-20). For submucosal invasion, the risk of spread to the lymph nodes is less than 1% for Haggitt levels 1-3 or sm1, and for Haggitt level 4/sm3, the risk of lymph node disease ranges from 12% to 25% (12,16). Therefore it is important to assess these pathological features for all malignant polyps, and surgeons, endoscopists and gastroenterologists should work closely in collaboration with pathologists. These efforts would allow clinicians to come up with the best decision for patients with malignant polyps, since in the presence of any of the aforementioned unfavorable features, formal oncological colorectal resection would be necessary.

The results concerning the presence of residual tumor reported that, in the group with polypectomy margin  $\geq 1$  mm, 43 patients had second-line surgery, only one patient had residual tumor on the specimen, and three had positive lymph nodes. Even though, the cumulative 5-year cancer recurrence rate was 6% in patients treated by polypectomy alone compared with 5% in those treated by surgical resection and 5-year net survival was 98% and 95%, respectively. While in the group with a margin  $< 1$  mm, 55 patients had second-line surgery, 38% had residual tumor on the specimen, and 5.9% had positive lymph nodes. The 5-year net survival was 81% for patients with incomplete resection. The authors concluded first, that the risk of residual disease (margin  $< 1$  mm) or transanal resection are the major indications for complementary surgery, since these patients had poor 5-year net survival and a major risk of recurrence, and secondly that polypectomy alone is sufficient if the margin of polypectomy resection is  $\geq 1$  mm. However, patients should be made aware that although the risk of nodal metastases is very low, it is not zero and that there is no effective surveillance that will detect nodal metastases before distant metastatic spread. Although colonoscopy is recommended for follow-up after malignant polyp resection, the risk of tumor growth is in the nodes, not in the lumen.

In this paper, they also provided data on pedunculated

and sessile malignant polyps, which is very original. The authors observed that the management and outcomes differed according to gross morphology, with a higher recurrence rate for sessile polyps after local excision alone, especially after transanal resection. Comparing the two periods, before and after the implementation of the screening program, there was a decrease in the recurrence rates for sessile malignant polyps recently. There were more surgically related cases in the second period and this could explain the decrease, as it was also shown in other papers (3). But we have to emphasize that the use of advanced techniques such as endoscopic mucosal resection, endoscopic submucosal dissection or combined endoscopic laparoscopic surgery (CELS) would offer an *en-bloc* resection of a lesion and reduce the rates of piecemeal resections, which is a known risk factor for recurrence and therefore potential spread (2,21,22). Unfortunately, the paper does not provide any information about the polypectomy techniques.

Despite of some limitations present in the study, particularly its retrospective nature, this study is still valid because it shows that the margin of resection can be considered as a determinant pathological factor in the choice of the appropriate treatment to offer to a patient with colorectal malignant polyp and that a mass screening program allows a greater detection of early colorectal cancers. It is important to emphasize that for future studies and in daily practice, the description of pathological factors of high risk, such as lymphovascular invasion, the level of tumor invasion of the submucosa, the degree of differentiation and tumor budding, and the technique used for resection of the polyp, allows an appropriate evaluation of the specimen and adequate decision when to indicate surgery or not, thus minimizing the risk of recurrence, residual disease and improving survival.

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