

Leading article

Malignant colorectal polyp

In this issue, Morson and his colleagues at St Mark's Hospital address a lively controversy concerning the merits and risks of removing by endoscopic polypectomy an adenoma containing invasive cancer.¹ The authors make a strong case for the advisability of this approach as long as strict criteria are met in preparing the specimen. When the polyp is correctly embedded, fixed and sectioned, it is possible to observe its orientation, surrounding mucosa and submucosal layer, to make an accurate diagnosis, including grade of differentiation and to assess the completeness of excision. The risk of lymph node involvement, the authors suggest, is minimal, unless the tumour is found after proper preparation and analysis to be poorly differentiated, or the margin of resection involved. Even when the excision was considered incomplete, only two of 10 reoperated patients had residual tumour at the site of endoscopic removal and none had lymph node metastasis. It should be noted that 'incomplete' excision also included the opinion of the endoscopist about possible residual tumour.

To examine the risk of lymph node involvement after this procedure, one should begin by setting aside instances of focal carcinoma, carcinoma *in situ*, or superficial carcinoma, all terms for cancer cells which have not invaded through the muscularis mucosae. As these threaten, but cannot kill and are known to be effectively treated by polypectomy alone, to discuss them in this context clouds the real issue: risk and histopathological determinants for proper treatment when cancer has invaded the head or stalk of an adenoma. The persistence of residual adenoma or cancer at the mucosal site of a visually incomplete polypectomy is also a different matter. Irrespective of histopathological interpretation, further treatment – sometimes surgery – is plainly necessary in such cases.

The salient question seems to be: what is the risk of lymph node metastasis when endoscopic polypectomy has been performed on a pedunculated, or sessile adenoma, or even on a small polypoid carcinoma, complete removal is assured and invasive carcinoma found in the specimen? To consider this question I have examined other publications on the subject^{2–9} (Table) and tabulated their results. Patients from the reported series were included when, although not reoperated upon, they seemed to meet the above criteria, on the premise that time would have shown the presence or absence of residual tumour. The uncertainties inherent in sorting out information from other publications should be borne in mind.

With one exception (the paper by Colacchio *et al*⁶) all the studies cited show results parallel to those of Morson *et al*, so long as high risk factors such as incomplete local excision and lymphatic invasion are taken into account. Two of Colacchio's six patients who had lymph node metastasis

Table Incidence of lymph node metastasis when endoscopic polypectomy of malignant polyp was complete and margins clear

Author (year)	Patients (no)	Patients with lymph node metastasis (no)	Notes on those with metastasis
Shatney <i>et al</i> (1974) ²	28	1	Lymphatic invasion present
Wolf and Shinya (1975) ³	27	1	Eight centimetre villous adenoma with invasive cancer; had seven piecemeal excisions
Nivatvongs and Goldberg (1978) ⁴	22	1	Sessile: ? tumour at line of resection. See Figure in ref
Coutsoftides <i>et al</i> (1978) ⁵ (tubular and tubulovillous adenomas only)	39	5	In four local extensions of cancer through scrota
Colacchio <i>et al</i> (1981) ⁶	39	6	In two lymphatic invasion: one also had anaplasia. 12 patients did not have polypectomy
Rossini <i>et al</i> (1982) ⁷	31	0	
Cooper (1983) ⁸ (polypectomy 'adequate')	20	0	
Lipper <i>et al</i> (1983) ⁹ (including margin suspect and not accessible)	47	0	
Morson <i>et al</i> (1984) ¹ (including complete and doubtfully complete)	49	0	

showed lymphatic invasion in the polyp, one of which was anaplastic. In the others with metastasis, high risk factors were apparently not present, but it is notable that for 12 of all the patients assessment of the adequacy of polypectomy was compromised because it was not performed until after large bowel resection.

The weight of evidence therefore supports the conclusion of Morson and colleagues that under the conditions stipulated – visual confidence of complete excision, proper preparation and examination of the removed malignant polyp, absence of a poorly differentiated tumour, and absence of invasion at the margin (others would also include the absence of lymphatic and venous invasion) – the patient has been appropriately treated by endoscopic polypectomy alone. When these criteria are applied to cancer in the stalk of malignant polyps and to some small polypoid carcinomas, the mortality risk of a large bowel resection (about 2%) exceeds the risk of lymph node metastasis.

In the presence of incomplete margins or other high risk factors, operative resection is indicated. The incidence of residual local tumour is high in this context, while lymph node metastasis remains remarkably infrequent; none for Morson *et al*,¹ Lipper *et al*,⁹ and Wolf and Shinya,³ but 17% for Cooper.⁸ Here, colotomy has joined the ranks of discarded operations. It can also be argued that a limited sleeve resection should be reserved for patients with high operative risk. A more extended resection of bowel with a regional lymphadenectomy addresses not only the risk of lymph node metastasis but also the difficulty of accurately identifying the site of polypectomy during laparotomy as well as the problem of misdirection from distances measured on the colonoscope. Unless operation follows polypectomy by a few days, it may be impossible to identify the site of polypectomy with the opened specimen in hand.

One of the hazards inherent in examining this subject is the selection

bias introduced by referral of some patients for endoscopic polypectomy while others are referred directly for operation. Size, conformation, mobility, and histological characteristics of the polyp are risk factors for presence and extent of invasive cancer. Among endoscopists, criteria for performing an endoscopic polypectomy must vary considerably. In the Morson study, about one half of the malignant polyps were less than 2 cm in diameter. Surely, many of the large, flat, more suspicious polyps were immediately referred for operative intervention and not considered for a treatment programme of this kind. Parenthetically, injunctions in the Morson study for proper preparation and fixation amount to arguments against shaving a large, flat, sessile adenoma, or piecemeal removal of a large pedunculated adenoma where transabdominal, transanal, or transperineal excision may be more appropriate.

The standards applied to cancer in adenomas may also be relevant to small rectal cancers. Several publications,¹⁰⁻¹² mostly from the same group, have emphasised the same histopathological determinants, of which the key example is absence of penetration through the muscularis propria, in which cases lymph node metastasis can be expected in approximately 10-12%. Of the latter group, most tumours are poorly differentiated, an attribute that can be determined by pretreatment biopsy.

About 15% of distal rectal cancers are Dukes A carcinoma – that is, invasion is contained within the outer boundary of the muscularis propria. In our experience only about one in five of these localised rectal cancers lends itself to local excision. The reason, of course, is our limited ability to examine the patient and the tumour by conventional techniques and thus be confident before surgery that the cancer is in fact a Dukes A tumour. If only there were greater accuracy in pretreatment staging, it would be possible to perform local treatment alone and avoid a permanent colostomy in a much larger proportion of patients. Herein reside the potential values of correlation with mobility,¹³ use of CT scanning,¹⁴ and efforts to improve the usefulness of lymph node imaging.¹⁵

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