Case 15 was referred by the physicians, with a persistent diarrhœa with excessive mucus, increasing abdominal distension and drowsiness. She was thought to be suffering from ulcerative colitis, the villous papilloma being mistaken for œdema of the rectosigmoid colon. An emergency transverse colostomy was made and only then was it discovered that her potassium was 3·3 mEq/l and that her drowsiness and distension were a manifestation of hypokalæmia. After correction, she made a good recovery and later I did a rectosigmoidectomy. The creation of an artificial prolapse is made easier by a simple device designed by André Toupet of Paris. The level of growth on the posterior aspect was as low as 4 cm. Excision was carried out so as to preserve more rectum in front than behind. Following this oblique incision and anastomosis, the patient is surprisingly continent.

Where excision of the rectum is essential, every effort is made to preserve the sphincters and restore continuity, whether by a formal anterior resection from above or some form of pull-through or abdomino-anal operation. Fortunately, because the tumour is innocent a wide clearance below is unnecessary. If tumour remains in the rectal stump, it can be dealt with at the operation by resection through the open end of the rectum prior to suturing. If it should be discovered later, diathermy destruction would probably suffice. The advantage of the abdomino-anal operation is that the lower limit of the tumour is seen and the maximum of anal canal and rectum can be preserved, and this length need not be uniform throughout its circumference.

The choice of operation is made by considering the level and perhaps the size of the tumour, influenced by the clinical assessment of suspected carcinomatous change, rather than by relying too much on the result of the biopsy.

A Study of Healing in the Anal Canal and of the Severity of Post-operative Pain after Hæmorrhoidectomy [*Abridged*]

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A study of healing in the anal canal and of the severity of post-operative pain has been conducted on 104 patients after five different forms of hæmorrhoidectomy (excision with high ligation, excision with low ligation, excision with primary suture, submucosal excision and excision with clamp and cautery).

Endoscopic examination of the anal canal ten days after operation showed that extensive granulating intra-anal wounds were produced after all operations except submucosal excision. The most severe degree of mucosal destruction, on occasions amounting to circumferential loss of mucous membrane, was observed following the clamp and cautery operation. Despite extensive intra-anal wounds, rapid healing of the anal canal mucosa above the pectinate line occurred after all operations. The healing of the skin wounds was sometimes prolonged following all five operations.

These patients were seen again six months after operation. The incidence of *palpable fibrosis* in the anal canal was determined and was found to correlate closely with the severity of mucosal destruction demonstrated by the early post-operative review. Only one patient, after a low ligation and excision, developed a stenosis associated with symptoms. The incidence of *hæmorrhoid recurrence*, in association with symptoms, was determined at this six months' review; of 28 patients 4 (14%) undergoing submucosal excision had a recurrence six months after operation – suggesting that preservation of the mucosa may predispose to this.

The severity of post-operative pain has been assessed and this has been applied to all patients in this group. Stretching of the anal sphincters, as a preliminary to the operation of low ligation and excision, effected a significant reduction in the severity of post-operative pain. No difference in the severity of pain was observed after the submucosal, clamp and cautery or low ligation operations. Excision with primary suture, however, was more painful than these three procedures.

[A full account of this paper will appear in the *British Journal of Surgery*, November, 1964.]

Recurrence after Local Excision of Malignant Polyps of the Rectum

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Early rectal cancer may present clinically as the so-called 'malignant polyp'. This expression has been variously applied but is here used only to describe invasive carcinoma in a polyp on a stalk, whether short or long.

Lockhart-Mummery & Dukes (1952) reviewed the pathology and results of treatment of malignant polyps and concluded that the important factors in deciding about further radical surgical treatment after local removal were the histological grade of malignancy of the invasive carcinoma in the polyp and the presence or absence of a free margin of excision. They advocated major

surgery when high-grade invasive carcinoma was found in a locally removed malignant polyp. These principles have been applied since at St Mark's Hospital. Our object has been to repeat their enquiry with a larger number followed up over a longer period. We can report the results of treatment of a smaller group of patients who had an initial local excision of a malignant polyp, followed by a major surgical procedure either because the carcinoma was of high grade of malignancy or because of suspected inadequate local removal as judged by histological examination.

Material

One hundred and ninety-six patients with malignant polyps of the colon and rectum were reviewed but only 118 fulfilled the histological criteria for invasive carcinoma in a polyp on a stalk. Twenty-seven polyps found in operation specimens removed for frank carcinomas of the colon and rectum and 26 polyps of the colon have been excluded, leaving 65 solitary malignant rectal polyps available for study. Fifteen were treated by initial radical excision of the rectum and 50 had local excision of their polyps. Later, 10 were submitted to excision of the rectum after review of the pathology of the polyp on the principles described by Lockhart-Mummery & Dukes.

Methods

Only rectal polyps containing invasive carcinoma have been studied. They were all within the range of the 25 cm sigmoidoscope. The histological grade of malignancy was assessed and divided into low, average and high grades (Dukes & Bussey 1958). The whole polyp and pedicle was subjected to multiple sectioning and many deeper sections have been examined from old blocks which were all available. The extent of carcinoma in the stalk was noted and the completeness of local excision assessed by multiple sections. As the majority of these polyps were removed with a diathermy snare the eosinophilic necrosis caused by the burn was usually recognizable at the margin of excision.

Results of Treatment

Local excision alone: Of 40 patients studied, 7 (17·5%) developed recurrence. The histology was reviewed and deeper sections cut in an attempt to account for the recurrences.

In one patient the polyp was of high-grade malignancy. His rectum was excised for local recurrence two years later. He survived a further five years when he died of presumed metastases.

In the other 6 recurrences the tumour was of average grade of malignancy but all had originally been reported as deeply invasive. In 4 the carcinoma extended to the limit of excision of the polyp; one of them had particularly deep invasion and wide local excision caused scarring but no local recurrence was found; the patient died with pulmonary metastases five years later, presumably blood-borne spread. Another had a malignant polyp on a long pedicle showing on deeper section a focus of average-grade tumour in a lymphatic near its base; it seems likely that this accounts for the local intramural recurrence treated by excision of the rectum five years later.

The other 2 recurrences of average-grade carcinoma were treated by excision of the rectum when clinical recurrence was found at follow-up examination. In one, local recurrence was seen within a month of local excision, and anterior resection for this Dukes 'A' case has produced apparent cure seven years later. In the other, lymph nodes were involved at excision of rectum for recurrence two years later but the patient died of post-operative pneumonia. Two patients who did not attend for follow-up died of recurrence in two and five years.

The study of these malignant polyps containing average-grade carcinoma with deep invasion of the stalk shows that local removal alone is only justifiable if multiple histological sections of the whole tumour confirm that local excision is complete. It is important that the patient should be impressed with the necessity of regular follow-up examination.

Initial local removal followed by immediate radical excision: Ten patients have been treated by radical excision of the rectum following local treatment. In four the polyps contained carcinoma of high-grade malignancy and, because of this, further surgical treatment was recommended despite the adequacy of local excision. Examination of the major operation specimens showed no residual tumour at the site of the primary growth but in 2 of 4 patients lymph-node metastases were present.

Six patients were treated by radical excision for suspected inadequate local removal of polyps containing carcinoma of average grade of malignancy; pathological examination of all the major operation specimens showed no residual tumour either at the site of the primary tumour or in any of the regional lymphatic glands; so initial local removal was adequate despite the fact that growth was present close to or at the margin of excision as judged by multiple histological sections. In some, if not in all, of these it has been the practice to diathermy the base of the polyp at the time of local excision and this may well destroy some residual tumour. This could explain the failure to find any carcinoma in the major opera-

tion specimens. Multiple histological sections through a whole malignant polyp cannot give more than an approximate estimate of the adequacy of local excision.

This study shows that radical excision of the rectum is advisable for malignant polyps in which the carcinoma is of high-grade malignancy, for in such tumours metastasis to regional lymph nodes may have already occurred. Of the 65 malignant polyps of the rectum treated by local or radical excision or both, in 8 the carcinoma was of high-grade malignancy. One was a tiny focus in a frail elderly man who has been treated conservatively with careful follow up. Of 7 who were treated by excision of the rectum, lymphatic metastases were present in 5. In well-differentiated adenocarcinoma, provided local excision is probably complete as judged by multiple sections through the polyp, the chance of lymphatic metastasis is extremely low. Follow up as for frank carcinoma is advisable, as distant metastasis has occurred without local recurrence. A few patients survived a long term after excision of advanced recurrence.

This work justifies the practice at St Mark's Hospital of removing the entire polyp in the first place without a preliminary fragmentary biopsy, which in this series has mutilated some polyps, making pathological assessment difficult and giving little information. In some, carcinoma biopsied from polyps has been the only focus of malignancy and none could be found at later histological examination. A biopsy is seldom representative of the whole lesion. In malignant polyps accurate information about depth of invasion and grade of malignancy is needed before embarking on surgical treatment. Every case must be judged on its merits, especially the general condition of the patient.

Conclusions

Local excision of most malignant polyps of the rectum is satisfactory. The qualifications for this policy are that the malignancy is not of high grade and that adequate local excision has been achieved as judged by the examination of multiple histological sections through the whole polyp and its stalk.

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Comparison of Oral and Rectal Steroids in the Treatment of Proctocolitis

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The value of corticosteroids in the treatment of acute proctocolitis is well established. Cortisone and prednisone by mouth have both been shown to be more effective than a placebo (Truelove & Witts 1954, 1959, Lennard-Jones *et al.* 1960). Rectal hydrocortisone hemisuccinate and prednisolone 21-phosphate have been shown to be effective in double-blind trials against a placebo (Truelove 1958, Watkinson 1958, Matts 1960). The various active treatments should be compared with one another so that the best mode of administration can be found.

In a previous study three doses of oral prednisone, 60 mg, 40 mg and 20 mg daily, were compared. Of these, 40 mg gave the best results in the outpatient treatment of acute proctocolitis (Baron *et al.* 1962). In the present study we compare (*a*) 40 mg daily, (*b*) 20 mg together with 20 mg of rectal prednisolone 21-phosphate and (*c*) 20 mg of rectal prednisolone 21-phosphate alone.

Design of the Trial

Sixty outpatients with active proctocolitis, for whom any of the three treatments was thought suitable, were entered into the trial and the treatment was allocated in a random fashion to give three groups of 20. The activity of the colitis was judged by abnormality of bowel habit, passage of blood and mucus in the stool and the finding of a hæmorrhagic mucosa on sigmoidoscopy. The age and sex distribution and the number of first attacks or relapses of the disease in the patients studied are shown in Table 1. Table 2 contains the results of barium enema examinations. There were no marked differences in the composition of the three treatment groups.

Table 1

Comparability of the treatment groups as regards sex, age and first attack or relapse

Treatment group	*No. of cases*	*M*	*F*	*Average age*	*First attack*	*Relapse*
Prednisone 40 mg	20	11	9	46	3	17
Prednisone 20 mg and topical prednisolone 20	20	9	11	44	5	15
Topical prednisolone 20 mg	20	7	13	45	3	17

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