gans but bear other favorable prognostic characteristics may be clinical identified. Multiple organ resections in judiciously selected patients with such tumors appear to control the neoplasm in a substantial number of patients and may be conducted with acceptable operative risk. Such undertakings may allow a small but clearly identifiable increase in overall patient salvage from adenocarcinoma of the large bowel.

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Discussion

Dr. James E. Davis (Durham): I will limit my remarks to Dr. McSwain's paper and would like to ask three questions:

We were encouraged this morning by Dr. Rhoads to remove polyps of the colon, and since Dr. McSwain is renowned both as a pathologist and as a surgeon, I would be interested in his opinion concerning the importance of the size of a polyp. Is it safe to observe, without removal, a polyp of certain size?

I am impressed with the fact that none of his juvenile polyps were associated with polyps that have a greater propensity for malignant change, and in his series associated polyps were not removed. Has this safely been documented by others, and is it safe to leave multiple polyps if one is proved to be of the juvenile type?

Also, I would be interested in his assessment of the value of the colonoscope in the management of such polyps. Obviously, this instrument was not available to him at the time this series of cases was being accumulated, but had it been available, conceivably the 21 per cent of his patients who underwent laparotomy might have been avoided.

Dr. Eugene M. Bricker: I am going to confine my remarks to the paper that was presented by Dr. Polk.

I wish to congratulate Dr. Polk on what I consider to be a worthwhile study and a very excellent presentation. As he suggests, it is probable that application of the principles he enumerated to advanced and recurrent lesions such as he described will not appreciably affect the over-all survival rate of colorectal cancer; but there need

be no apology for this. Although the salvage rate may be very small, it is of momentous importance to the individual salvaged patient. The morbidity and mortality rates must be kept at a satisfactory level, and Dr. Polk has demonstrated that this can be accomplished.

The biological favorability of selected patients with advanced colorectal cancer was apparent to me a good many years ago at the Ellis Fischel State Cancer Hospital in Columbia, Mo. back in 1940 and 1941, at which time a series of similar operations were done. This group of patients forms part of the series that was reported by Surgarbaker in 1946.

I would like to add emphasis to a couple of things that Dr. Polk has said.

I could not agree more with him about the psychological preparation of the surgeon for what may become necessary in the operating room, to say nothing of the psychological preparation of the patient and the patient's family. This entails recognition of the possibility before operation, in so far as this can be accomplished. The surgeon must avoid being caught with such a case in a busy schedule and on a busy day. He should avoid the possibility of his judgment being influenced by such controllable factors. This comment I make from personal experience.

And secondly, the recognition of the biologically favorable lesion at the time of operation entails a very meticulous, painstaking search for liver and lymphatic metastases and peritoneal implants. I have spent as much as an hour on this part of the operation, in order to be sure that I had the type of lesion I was hoping it to be, before embarking on an extended resection. The search usually entails multiple biopsies of regional nodes and periaortic nodes and periaortic soft tissue, looking for lymphatic permeation as well as metastatic nodes. Although nodal metastases in the field of possible resection are not necessarily a contraindication to an extended resection, the real tip-off as to the biological favorability of the lesion is the complete absence of demonstrable lymphatic or vascular spread.

Finally, my own experience with reoperation for recurrent cancer of the rectum or rectosigmoid, either after abdominal perineal resection or low rectal anterior anastomosis, has been so bad that I doubt that any attempt at reoperation for cure should be made. There are palliative procedures that have much more to offer.

I do not agree with Dr. Polk's pessimism about the intraabdominal recurrence, especially if the first operation is considered inadequate. Unfortunately, inadequate operations do come along fairly frequently. Our experience is such that, after careful survey, I do not hesitate to submit such a patient to reoperation for intraabdominal recurrence of colon cancer. The chances are much better than for recurrence of rectal cancer.

DR. JACK WHITE (Baltimore), discussing Paper No. 29: Dr. Sumner, Dr. Sabiston, Members and Guests: I rise to commend Dr. McSwain an his paper, which I think is most timely in calling attention to the nonmalignant nature of the juvenile polyps seen in children.

We have been interested in this problem in our Division of Pediatric Surgery, and have undertaken a search of our own experience in an effort to rationalize our therapeutic approach. We have surveyed our experience at The Johns Hopkins Hospital with all polyps of the colon in children under 14 years.

(Slide) During the years 1949 to 1967, we saw 38 children with polyps with a fairly equal sex ratio. Two thirds of these, as you notice, were under 7 years of age; the total group was under 14 years. As Dr. McSwain has pointed out, 80 per cent of juvenile polyps occur in the first decade of life. The symptoms in our series were bleeding per rectum in 34 children, and prolapse through the rectum in four.

(Slide) These 38 children had 51 polyps. They were similar in gross appearance, and all were juvenile polyps. We did not find any adenomatous polyps. We excluded from this study any children with the typical stigmata of familial polyposis, or Gardner's syndrome.

(Slide) The last slide presents our current classification of colonic polyps in children. We think that the neoplastic or premalignant lesions of familial polyposis and Gardner's syndrome are usually apparent, either by sigmoidoscopy or by their typical associated external appearance—Gardner's syndrome, for instance—and should be treated aggressively by operation.

The juvenile polyps, however, are non-neoplastic, and we have adopted a more conservative approach. We feel that those within the research of the sigmoidoscope should be removed, and histologic confirmation obtained. As with Dr. McSwain's experience, and in our survey of the literature, there has never been reported in children an association of other types of polyps with juvenile polyps. As well, Dr. Jan A. Louw has pointed out that in the records of St. Mark's Hospital in London, there has been only one case of an adenomatous polyp in a patient under 10 years of age.

We have noted that the natural history of such polyps is of spontaneous slough, with minimal bleeding. We have had only one case in the last six years that required transfusion, and that was of one unit again, the same experience that Dr. McSwain has reported to you.

A recent review from St. Luke's Hospital in New York by Holgersen, Miller and Zintel agrees with our approach. These authors have also noted that in the collected series of operations for juvenile polyps there was a 15 per cent morbidity in children, which includes dehiscence of the wound, intestinal obstruction postoperatively, and bowel fistulae.

We have adopted, consequently, a more conservative posture. We watch children with polyps carefully, and will recommend laparotomy only if

there is recurrent massive bleeding, intussusception, or the malnourishment syndromes which have been reported in a few cases. These cases warrant colotomy, and perhaps colectomy.

DR. SAM WEAKLEY (Louisville) discussing Paper No. 30: I simply want to discuss one point with which we have had experience recently. This has to do with the reconstruction or the closure of the abdominal wall following extensive resection. Many things have been used, as you are well aware—Tantalum mesh, fascia lata, and even dura has been used, and, of course, as Dr. Polk has demonstrated, pedicle flaps or sliding grafts have been used.

(Slide) The first patient that I want to discuss is a 57-year-old gentleman who had had an abdominoperineal resection for adenocarcinoma of the colon 15 years before we saw him. He had done well up until about 4 months before admission to the hospital when he noted an enlarging mass near his colostomy in the abdominal wall. He was admitted with an obstruction at the colostomy site which proved to be a rather extensive tumor. We were able to slip a Foley catheter by it and obtain a barium enema x-ray which showed no evidence of any distal spread. The IVP did reveal obstruction of the ureter and suggested involvement of the kidney.

You can see the organs that were removed at operation. It was necessary to remove the spleen, the remainder of his left colon, and the left kidney, with abdominal wall. We did a right transverse colostomy which left a defect in the anterior abdominal wall 8″ × 5″. Polypropylene mesh, 6 mil, heavy gauge character was used in a one-layer technic to reconstruct the wall on April 10, 1970. I contacted this gentleman last week, and he, in so far as we can ascertain, is free of disease.

(Slide) This 92-year-year old gentleman gave us only a 4 months' history of continuous left lower quadrant abdominal pain with an enlarging mass involving most of that area. The barium enema x-ray demonstrated blockage at the mid-sigmoid level. The IVP revealed obstruction of the left ureter. We were not sure about involvement of the kidney on this side. He also had a mass in the inguinal area, and we were not too sure what this represented. As Dr. Bricker suggested, you have to approach these cases with a certain psychological attitude. On exploration there was no evidence of extension other than regional.

We removed his entire left colon, kidney, a segment of bladder dome, and also his left testicle. The inguinal mass proved to be an old incarcerated hernia. Rather than get into possible tumor, it was easy to deliver the testicle up out of the scrotum and remove this en masse.

At this point we had a little problem, because the common femoral vein appeared involved. A 4 cm. segment of the vein was removed en bloc.

He survives almost 2 years post-op., and in so far as we can tell, is free of disease. You wonder about operating on a 92-year-old gentleman this extensively, but I can assure you that he has young ideas. He was very interested in the marital status of the young ladies who were eager to take care of him. I asked him: "Pat, what in the world? Why are you interested?" He said: "You have to think of the future, young man. I have already buried three wives." And, indeed, he certainly has.

This brief discussion points out the fact that this can be done. The technic we have used is very simple and will be described this month in the *American Journal of Surgery*.

I do want to offer a word of precaution. After such extensive reconstruction there is much subcutaneous fluid between the skin and Marlex. The remaining peritoneum will reabsorb it. Do not try to aspirate it. Suction is not necessary.

This alloplasty is suggested as one possible way to resolve a difficult situation. We are concerned about putting a foreign body in a potentially contaminated wound but so far have had no problem.

DR. CHARLES ECKERT (Albany) discussing Paper No. 29: Until Dr. McSwain's paper, I believed I was the only person in possession of a slide showing a colectomy specimen of a youngster with juvenile polyps.

(Slide) I lent this slide to Harold Zintel who made a movie on this subject—hoping that he would say that colectomy for juvenile polyps is an unwarranted and unjustified operation. I hesitate to disagree with Dr. McSwain in public, but I do not believe colectomy should be done in the light of our present knowledge of polyps in childhood.

The slide which you have seen came from one of two siblings, at a time before we recognized that juvenile polyps never occurred concomitantly with adenomatous polyps. We had removed polyps from the rectums of both, but we feared, on the basis of the identification of multiple polyps, that they would have adenomatous polyps as well and that they were examples of patients with familial polyposis.

Fortunately, they are both alive in their twenties with good bowel function and in good health, but this does not mean that the procedure was appropriate, and I do not believe that we should leave this meeting with the idea that it is.

With this exception I enjoyed Dr. McSwain's paper greatly. He has emphasized very well the natural history of juvenile polyps, their lack of association with neoplasia and I congratulate him for his excellent contribution.

DR. ROBERT FRANKLIN (Closing discussion of Paper No. 29): In answer to Dr. Davis' questions, we think it has been pretty well documented that at least in villous adenomas and polypoid adenomas malignant potential is definitely related to size, and we would definitely remove these.

The last two questions can probably be answered together. We think that you probably

can leave some of these polyps, especially if the diagnosis of juvenile polyp has been made. The colonoscope, which we have had no experience with, may provide a method for removing some of these polyps in the future.

As far as Dr. White's discussion, we would agree, as has been pointed out before, that the juvenile polyp is not a premalignant lesion, and would agree with his management.

In response to Dr. Eckert's statement we did most of these colectomies before the differentiation between juvenile polyps and polypoid adenomas was better understood and in the last few years that we would not have done subtotal colectomy in some of these patients. However, the magnitude of symptoms may at times be enough to require resection of part of the colon.

(Slide) In closing, I would like to show two slides that deal with the length of our follow-up.

We were able to follow 95 of these patients; 56 of these were followed over 10 years. As you can see, only 16 of these patients have been operated on in the last 5 years.

The next slide helps to explain the development of the new polyps, which Dr. McSwain has alluded to, that occurred in 25 of 100 patients. Careful analysis indicated that 16 of these patients who developed new polyps developed them within one year. Only three of these patients developed them in over 5 years.

DR. HIRAM C. POLK, JR. (Closing discussion of Paper No. 30): I want to respond to Dr. Weakley's comments.

First of all, I think the key thing about the technical reconstruction is that it be secure. It is a very small issue as to what technic or technics you might use. We prefer the autogenous tissues, but I do not think it is the determining factor. Infection about prostheses might be very, very serious in these people.

I think this is an excellent example of the application of these principles in a reasonable attack on selective favorable tumors, and obviously it is one of the evidences why it is so easy to work in Louisville, with attending surgeons that can help with problems such as these.

Finally, Dr. Bricker pointed out the critical role of the adequacy of the primary excision. If the original excision has been inadequate, one can tackle that tumor very aggressively with a high degree of confidence. But if someone has failed with a good, standard cancer operation, well conducted to control a tumor, it proved very, very difficult to get control of the recurrent cancer.

I think the pessimism should be put in the proper light. It is not going to be responsible for wholesale improvement in the control of colon cancer, but with a few people who are so afflicted, who really do have a favorable prognosis, extended resection proves one errs when it is assumed that they have a poor outlook. It is very important to recognize these people, and give them this superb opportunity to be well.

Finally, I have noticed that the group in the last few days has repeatedly commented about the virtue and grace of their wives, and I would not take any exception to that. However, I think the rare chance to recognize on behalf of many of the people in the audience the fantastic professional example of Eugene Bricker, which was for all of us an inspiration during the time of our residency, should not go unnoticed or unrecorded.