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Discussion

Dr. Watts R. Webb (Syracuse, New York): I'd like to share with you a recent series of ours which I think bears out very beautifully the lessons that Dr. Barnett has brought to our attention.

This was a series recently analyzed by Dr. Bruce Chamberlain and Dr. Shatilla, from the Community Hospital, in Syracuse. This is a private hospital, and so we were not dealing with the urban indigent, and there are very few of the stoic, reluctant rural patients that give you a completely different caliber to the patients that you are seeing.

These were 103 consecutive cases over the past eight years of mechanical small bowel obstruction. These did exclude those patients who had vascular obstruction, such as the mesenteric thrombosis.

It turned out, of this group, that 50 were strangulated, and 53 were simple obstructions. There were no deaths in the simple obstructions. There were two deaths in the strangulated group, both unrelated to toxic effects; one, an anesthetic problem, and the other, a late bronchopneumonia.

I think the important thing that came out of this was, again, to re-emphasize what Dr. Barnett said, and had been mentioned by Dr. Wangensteen before, that there are no differential characteristics or criteria by which one can separate simple from strangulated bowel early. Whether you look at the fever, the tachycardia, the enzymes, the physical examination for tenderness or rebound tenderness or rigidity, or whether you look at the bowel by x-ray, including barium studies, there was no way to make a differentiation early between simple and strangulated bowel. Late, obviously, you can make it from looking at patients from across the room; but early, there was no way.

Secondly, these patients came—and I think this is probably one of the most important things that was emphasized by Dr. Barnett—from an enlightened group of internists and family physicians, who got them to the surgeon very early in the course of their illness. Essentially all of them who were operated were operated in the first few hours; few as long as 24 hours after arriving in the hospital. There was a brief period of very rapid physiologic resuscitation, with fluids and whatever else was required, including massive antibiotic therapy for the enteric organisms, both aerobic and anaerobic, and then early operation.

There were very few resections. Very few of these patients had gangrenous bowel, because they did get to surgery early, and they were operated early. And this, I think, is the real key to reducing the mortality rate in the strangulated group down to 4%, as Dr. Barnett had predicted you should be able to do.

I think the only ones that we now believe should be handled definitively with a long tube would be, perhaps, those that have carcinomatosis, that have radiation fibrosis, or perhaps those that have already had multiple operations for recurrent obstruction from adhesions. The incidence of gangrene in this group is very, very low, and usually one has opportunity to resuscitate them, treat them with a long tube, and then watch them for other problems as they develop.

Dr. Jonathan E. Rhoads (Philadelphia): I think you will agree that Dr. Barnett and his coauthors have done a very thorough analysis of a large experience with this vexing problem. He did not tell us how many patients they had intercepted early enough so that they didn't require resection, and, no doubt, were saved. He began with those which had to be resected. So his figures are necessarily higher.

Now, I used the term "vexing" because the results with these conditions have failed to improve in the way one would expect them to have improved, with the many gains in supportive care now applied in clinical practice. Perhaps one must look for some countervailing trends. I will cite three which I suspect may play an adverse role.

The first is the increasing reluctance to use laparotomy as a diagnostic tool. Dr. Dever used to say: "We will now dispel mystery and reveal truth," and proceed to lay the abdomen open. We are so cowed by the possible charge of doing unnecessary operations that we will often wait substantial periods of time in the hope of establishing a secure diagnosis by other means in a patient who presents with a significant possibility of housing a catastrophe.

Second, we have been bombarded with propaganda about preoperative preparation of patients, making up blood volume deficits and correcting fluid and electrolyte deficits. These are important, but with a large bore needle, they can be well advanced in about the same hour or two that it usually takes to get the patient on an operating table. One needs a prompt 24-hour-a-day laboratory, and one needs the realization that total restoration is not a prerequisite to starting the operation. Fifty per cent restoration will usually do, and the second 50% perhaps can be completed more safely a little slowly.

Third, and more applicable to the patients with vascular disease, one needs to be very reluctant to conclude that the patient is hopeless. Some, of course, are hopeless, but with the application of intravenous hyperalimentation to patients with short bowel syndrome, it is surprising how little intestine will suffice for long-term survival.

If, during the first 60 days, nutrition is provided parenterally, the remaining bowel has time to adapt, and has the nutrients it needs for hypertrophy. Dudrick and his associates have had ten patients with 18 inches or less of small bowel whom they have treated successfully in this way.

Dr. Judson G. Randolph (Washington, D.C.): I would like to agree with Dr. Barnett fully on the premise that only with the immediate removal of gangrenous bowel, when it can be successfully done, are we going to beat this problem, when it involves reasonable lengths of bowel.

I'd like to remind all of you, however, that when most or all of the bowel is involved, some quite different advice might be offered.

I was fortunate, as a junior house officer to be present when Robb Rutledge, of this society, in 1957 did the first mesenteric embolectomy. When I saw him put all that green, black, blue, and purple bowel back into the abdomen, I thought my hero had taken leave of his senses. And yet it did prove that with a second-look approach to this kind of massive bowel insult, a lot of the bowel changed in 48 hours. We have had the experience now in 12 cases with children, entirely, that showed that surgeons who are loath to leave any discolored bowel in the abdomen may actually be taking out viable bowel. In the interest of occasionally preventing the short gut syndrome, I'd like to just show you an illustrative case.

(Slide) This is the appearance of the bowel of a 15-year-old boy who had had an ileal conduit. He already had very markedly reduced renal function, and as you can see, there is nothing wrong with his bowel.

When the bowel is blue or purple, or thick, edematous (slide)—such as in this slide—in a child 15 years old with severely damaged kidneys, so that we were sure that his biochemistry would not support the couple of loops of jejunum that he had that were of adequate color, this was all untwisted and returned to the abdominal cavity.

This shows that 48 hours later we took out the limp, flaccid black and green bowel, and left still an awful lot of terrible looking bowel which we thought had a chance to survive, and brought it out with stomas.

(Slide) This shows this bowel seven weeks later, when we were putting it back together; and this youngster is quite healthy now.

(Slide) This shows the kind of patient in whom we would do this now. This is a volvulus in a baby. We put all that bowel back, and expect, and hope, that much of it would regain function.

Several years ago, in discussing this at the University of Virginia, President Muller's institution, Dr. Ben Eiseman was there at the same time I was, as a visitor, and he said: But don't you have a horror of having feces in the abdominal cavity?

I said to him, as I think we should underscore with these remarks, that there is already diapedesis of organisms through the bowel, and, I think, in the interest of a chance of the bowel recovering in some of these massive insults, that we should do the second-look procedure in about 48 hours.

DR. ARTHUR I. CHENOWETH (Birmingham, Alabama): One of the points I was going to make was to make reference to the parenteral hyperalimentation, which is of such tremendous help to all patients who need to be operated on for intestinal obstruction.

The other two were to make a reference to the use of tubes. This subject has been generally touched upon, but to elaborate a bit on the use of the long tube, one of the well-known football coaches has often said that when you put the ball in the air for a pass, three things can happen, and two of them are bad. I think almost the same thing might be said for the use of the long tube in the preoperative phase, when considering the matter of small bowel obstruction.

In the first place, it's often not possible to get it inserted to its effective depth, and time is lost in this effort. Second, once it's down, the stricture can be masked, as has been mentioned before. On the other hand, there are certain indications for its use, and one of them is, after operation for adhesions has been carried out, a number of times one is faced with the necessity for lysing these adhesions again. One of our members, Dr. Raleigh White, in about 1955, suggested the use of a long tube already in place to serve as a stent for the loops of bowel in a benign position to prevent further recurrence.

I can't leave without making reference to Dr. Joel Baker's presentation at one of these meetings in about '62 or '3, when he presented the use of his long tube for decompression of the bowel, which is of inestimable value. The tube in question, as most of you know, is simply a long Foley catheter. And this is most effective in decompression, and can be left in place as a jejunostomy.

I think that the presence of this tube in everybody's operating room is almost a necessity, for it is needed occasionally.

DR. WILLIAM O. BARNETT (Closing discussion): We would support Dr. Chenoweth's position related to the use of a long tube as a stent for recurrent bowel obstruction. We utilize the Baker tube in our practice.

I would like to thank Dr. Webb for his comments. He contibuted to the management of some of the cases included in our series.

Dr. Rhoads' remarks are always welcomed. The cases included in this paper had irreversible gangrene and those which were suspicious initially, but returned to normal after release of the obstructing mechanism, were not included. We would certainly agree with Dr. Randolph that the second-look procedure is of value in those cases where extensive ischemia or significant alteration of the bowel has occurred. Under these circumstances, removal of a portion of the altered bowel would not represent a logical approach. Continued support of the intestinal tract in situ might represent the only hope for survival, as slim as it might be. This position is not to be confused with the firm principle of always removing lesser segments of gangrenous or questionable bowel.

Timing of surgical intervention in a patient who harbors gangrenous bowel continues to represent a considerable challenge. The major problem relates to achieving early surgical intervention to decrease the exposure time to toxic materials versus taking sufficient preoperative time to avail the patient to the advantages of optimal, preoperative fluid and electrolyte restoration.

Finally, we continue to practice thorough irrigation of the peritoneal cavity where contamination has occurred. Also intraperitoneal and systemic antibiotics are utilized for we are persuaded that in some cases these agents may be decisive in favor of survival.