ACUTE INTESTINAL OBSTRUCTION*

BY

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All discussions on acute intestinal obstruction begin and end on a note of admonition to the practitioner that on him rests a great responsibility because the key to the problem lies in early diagnosis and prompt surgical treatment. If the practitioner does delay in referring these cases for surgical treatment it is largely because he has started out with a false picture of the cardinal signs and symptoms of intestinal obstruction, a picture for which we who teach are responsible. It would probably be better if in our teaching we dwelt only on the early signs and symptoms of obstruction and omitted altogether that classical picture of the hollow-eyed patient with clammy skin, distended abdomen, and faeculent vomiting—a picture not of surgical urgency but of impending dissolution. We must remember, however, that in very many cases the doctor is not called in until the signs of danger are already obvious. We must therefore endeavour to educate the public to realize that acute abdominal colic with vomiting demands medical advice and not a purgative. Such education must not be by posters and press propaganda, but through the various organizations, such as health visitors, Red Cross, and ambulance classes, etc., which have already done so much to spread useful knowledge on matters relating to health.

Amid the great variety of conditions which give rise to intestinal obstruction and, if untreated, prove fatal within a longer or shorter period, we can recognize three fundamental factors, one, two, or all of which may be operative in the individual case. Firstly, there is the factor of obstruction to the onward passage of intestinal content. Secondly, there is interference with the blood supply of a portion of the bowel; thirdly, the formation of a closed loop of bowel.

Simple obstruction of the lumen, the first factor, seen in its simplest form in gall-stone ileus, if situated high in the small intestine causes death mainly by dehydration and loss of chlorides; if low down, by toxæmia as well. Armour and his co-workers in the Department of Surgery in Edinburgh showed that a dog with a simple high intestinal obstruction may be kept alive and without any signs of toxæmia for over five weeks by supplying fluid and chlorides below the level of the obstruction. There is an overwhelming body of clinical and experimental evidence on the necessity for supplying generously both salt and water to all cases of obstruction.

Interference with blood supply, the second factor, is seen in its purest form in mesenteric embolism; it is, however, the dominant factor in all strangulations. Apart from the element of shock resulting from a twist or compression of the mesentery, we have the certainty of peritoneal infection in cases which are left for long unrelieved.

The closed loop, the third factor, is seen in its simplest form in acute appendicular obstruction. We know that it is the content of the loop at the time of obstruction which determines the subsequent course. If the loop contains much faecal matter this will decompose and tension gangrene will inevitably follow. Fortunately the small intestine usually contains little in its lumen at the time of onset of obstruction, and this factor is not the predominant one in internal and external strangulations. In the figures brought before us to-day we have not considered the appendicular obstructions which contribute at least 2,000 deaths a year in this country. No discussion

on acute intestinal obstruction can be complete, however, without reference to what is perhaps the commonest variety. The cause of death in closed loop obstruction is rupture with consequent peritonitis. It deserves, therefore, a foremost place in our catalogue of urgency. Obstruction and strangulation by bands and adhesions, the result of previous abdominal operations, occupy a prominent and significant place in the statistics shown us to-day. Many of them are doubtless unavoidable, some are due to rough handling and needless exposure of the viscera—to a lack of that *reverence for the tissues* which Lord Moynihan has done so much to inculcate.

TREATMENT

This must be *prompt but not precipitate*. In dealing with cases of intestinal obstruction as they arrive at our hospitals we must remember that they are never so urgent but that there is time for two pre-operative measures, each of which may be life-saving—namely, a copious subcutaneous infusion of saline, which may be followed up by an intravenous injection of 50 c.cm. of 5 per cent. saline, given on the operating table; and the passage of a stomach tube. The latter is a necessary safeguard if inhalation anaesthesia is to be employed, otherwise the patient may drown in his own vomit. During this pre-operative period an endeavour should be made to locate the obstruction. Much may be learnt from a thoughtful clinical examination—the shape of the abdomen, visible and palpable peristalsis, the sites of splashing elicited by “dipping” palpation, the distribution of the gurgling and tinkling sounds on auscultation, the amount of fluid taken by enema, and finally, if the patient’s condition permits, the outlines of gaseous distension as seen in a straight x-ray photograph.

The anaesthesia of choice is spinal, provided the blood pressure can be maintained by ephedrine. When the pressure is low, a local anaesthetic, supplemented by gas and oxygen, is probably safer. *B. welchii* serum is of real value in all cases where gangrenous bowel has to be dealt with—for example, where a perforated gangrenous obstructed appendix is removed or where in a strangulated internal or external hernia devitalized bowel has to be resected. In the straightforward case of simple obstruction I have seen no benefit from its use, nor, indeed, would one expect to do so.

In the very worrying post-operative variety of obstruction, where doubt exists as to whether one is dealing with adynamic ileus or a true mechanical obstruction, the following measures have been found useful: (1) the leaving down of the duodenal tube; (2) the administration of hypertonic saline intravenously; and (3) the giving of a spinal anaesthetic, all being ready for operation should no bowel action result. If distension and vomiting are the only symptoms, conservative measures should be persevered with; if, however, there is any colicky pain, if gurgling sounds are heard on auscultation, and if splashing in dilated coils of small intestine can be detected, operation should be resorted to without delay.

If we are to reduce the distressingly high mortality in acute intestinal obstruction I believe we must: (1) spread the knowledge of the *early signs* of the malady, firstly among our students and practitioners, and secondly among the public, through our health organizations; (2) study the patients before embarking on operation, that we may, if possible, locate the obstruction and thus avoid at operation all needless handling and exposure; (3) prepare the patient before operation by effecting a replacement of the fluid and chlorides lost by vomiting and by ensuring an empty stomach; and (4) at operation depend as far as possible on spinal or local anaesthesia, expose and handle viscera as little as possible, and do the minimum consistent with saving life.

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