On the simulation of ascites in cases of intestinal obstruction / by E. Markham Skerritt.

John Marshall, Esq.
with the Author's Compliments.

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INTESTINAL OBSTRUCTION

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Reprinted from the
Transactions of the Clinical Society of London

Printed by
SPOTTISWOODE & CO., NEW-STREET SQUARE, LONDON
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ON THE SIMULATION OF ASCITES IN CASES OF INTESTINAL OBSTRUCTION.

ONE of the commonest and most reliable signs of ascites is dulness in the dependent parts of the abdomen, changing its site with alterations in the position of the patient. In the two following cases of intestinal obstruction this sign was present, but there was no ascites. As I have been unable to find any reference to similar instances, or any caution against this source of fallacy in the diagnosis of ascites, I venture to think that the observations made on this subject may be of some interest.

The first case is one that I brought before this Society on February 14—that of a patient who came under my care at the Bristol General Hospital, with intestinal obstruction from fibrinous exudation; and I will, therefore, refer only to the special condition which is the subject of my paper. During life, when the patient lay on his back, some dulness on percussion existed in each flank, as high as the anterior superior iliac spine; when he turned on his side, the flank that was uppermost became more resonant. During the progress of the case this sign became somewhat more marked. Post-mortem, the small intestine was found to be greatly distended with liquid fæces and gas, *and there was no fluid in the peritoneal cavity.*

The second case was that of a boy, aged 16, admitted into the Bristol General Hospital on March 3. Five days before severe pain in the abdomen came on, and continued up to admission. On the fourth day vomiting set in, and recurred at frequent intervals. The bowels acted on the first and the third days, and very slightly on the fifth; flatus was passed occasionally up to the fifth day.

On admission, the patient's expression indicated some suffering; the face was pinched and pale, the eyes were sunken, the skin dry, the pulse 88, weak, small, regular; the tongue dry and thinly furred. The abdomen was swollen and somewhat tense; there was no pain, except on movement. Slight tenderness existed in the right iliac region, rather more marked about the umbilicus, and in the left loin. On percussion, resonance was diminished over the pubes and in both flanks; in the latter the dulness extended as far forwards as the anterior superior iliac spines; and when the patient turned on either side the opposite flank became more resonant. There was occasional vomiting of greenish sour-smelling fluid. An enema of three pints was given easily, but without effect. Ordered morphia internally, and hot fomentations to the abdomen.

Next day there was no special change, except that flatus had been passed twice.

On the following day, March 5, wind was again passed twice, but the vomit now had a somewhat stercoraceous character. As my surgical colleagues did not advise operative interference, owing to the low state of the patient and the obscurity of the condition existing, I determined to try Dr. Kerr's treatment by large doses of belladonna, and accordingly ordered 40 minims of the tincture every hour—the effect to be closely watched. Altogether, fifteen doses (equal to 10 drachms of the tincture of belladonna) were given in as many hours; and at the end of this time the patient lay quietly in bed, apparently unconscious, but moved the head and arms when spoken loudly to. The conjunctiva was sensitive; the pupils were about half-dilated, regular, and insensible to light. The mouth was open, the tongue was somewhat swollen, and, together with the soft palate, uvula, and pharynx, was red and glazed. There was a bright-red blush over the backs of the hands and wrists. The pulse was 124, soft, somewhat larger and stronger than before. The abdomen was decidedly less distended, and manipulation caused no sign of pain. The patient was lying on the right

side, and the left flank was resonant, while there was dulness in the right flank as high as 1 inch in front of the anterior superior iliac spine. There was no supra-pubic dulness.

During this day, three doses of 30 minims each of the tincture of belladonna were given, and towards evening the patient began to be delirious and to talk constantly.

Next day, March 7, the delirium still continued, and was evidently of a pleasing character. The patient answered questions cheerfully, and said he felt better. The abdomen was certainly more flaccid. Tenderness just above the umbilicus was complained of.

The patient on this day was lying on the *left* side, and dulness was distinctly marked as far forwards as 2 inches in front of the left anterior superior iliac spine, while the *right* flank was resonant.

At midday the patient was almost pulseless at the wrist, but was still able to move about in bed with apparent ease. The pleasing delirium continued. Soon after, death took place very quietly.

Post-mortem.—A knuckle of small intestine, about 5 feet distant from the stomach, was adherent to the left side of the brim of the pelvis, and here a coil about 6 inches long was doubled back upon itself so that the two ends of this portion were applied to each other and closely adherent; between the extremities the included gut was puckered up, and the whole was bound together by adhesions evidently of no very recent formation, as they were organised into toughish fibrous tissue, which gave way only to considerable force. There was no sharp line of strangulation, but the whole of this portion of the gut was much congested, of a dark claret colour; it measured about an inch in diameter. Below this point, the intestine was extremely contracted; and above, the gut was greatly distended with liquid fæces and gas, so that the coils measured from 3 to $3\frac{1}{2}$ inches in diameter. *There was no fluid in the peritoneal cavity.*

Remarks.—Before passing to the special subject of this paper, two points in this case call for brief comment:—

1st. The effects of the belladonna. The more severe toxic effects of belladonna are generally developed in this order:—Delirium of pleasing character, convulsions, coma, and death. In this case the dose was so large and frequent that the patient apparently passed at once into the stage of insensibility, and, when the effect of the drug was somewhat going off, seemed to return to the earlier stage of pleasing

delirium. Although the dose was somewhat heroic, yet it was less than that given by Dr. Kerr in his cases of intestinal obstruction successfully treated with belladonna. The drug seemed to have, on the whole, a somewhat beneficial effect, as the pulse slightly improved and the abdomen became less tense.

2nd. The cause of the obstruction. This appeared to be the binding down of a considerable tract of intestine by adhesions, and consequent interference with the normal action of the gut and the passage of fæces; for there was no sharp constriction, and the gut was but little contracted. The loop of intestine affected looked as if it might previously have been down in the sac of a hernia; but there was no definite history of hernia, and there was no other post-mortem evidence of its former existence.

In both these cases of intestinal obstruction, the common sign of ascites was present—dulness in the dependent parts of the abdomen, changing with the patient's position—and in neither was there any fluid in the peritoneal cavity.

We have, therefore, to inquire what physical conditions were present that could give rise to this anomaly; and it seems to me that there is only one explanation applicable. Great distension of the intestine was present in each case; the gut contained a large proportion of liquid fæces, and also some gas; and I believe that the peculiarity noted was due to the fact that the gas and the fluid in each coil of intestine necessarily obeyed the same physical laws as do the gas-containing intestines and the free fluid in ordinary ascites—that is, that in each coil of intestine the gas would rise to the top in whatever position the patient lay, and the fæces would sink to the bottom; and that this was appreciable to percussion, not only on account of the great distension of the individual coils, but also because of the relatively large amount of fluid fæces contained in them. According to this theory, when the patient lay on his back the dulness in each flank was the sum of the dulnesses due to the liquid fæces in the individual coils; when he lay on either side, the resonance in the uppermost flank was the sum of the resonances produced by the gas in the same individual coils.

So far as I have been able to discover, the existence of this physical sign in the absence of ascites and of such a condition as a large cyst containing fluid and gas, has not

before been described; and it appears to me of some practical importance, because in an obscure case it may step in and turn the doubtfully-balanced scale of our opinion in the wrong direction. The dulness in these cases was not very marked nor very extensive, and fluctuation could not be obtained across the abdomen; in fact, the signs were just those commonly met with when there is a small quantity of fluid in the peritoneal cavity. According to the explanation above given, we shall meet with this difficulty in diagnosis only in cases where there is great distension of the intestine from cessation of the onward flow of the fæces—that is, either when there is some mechanical obstruction, or when the obstacle is cessation of peristaltic action owing to enteritis or to peritonitis simply. If in such a case there is some evidence in favour of a mechanical obstruction, some in favour of a simple inflammation, then the presence of this sign—usually regarded as indicating a small quantity of free fluid in the abdominal cavity—would naturally be looked upon as strong evidence in favour of the existence of peritonitis with effusion. In the first of the cases I have brought forward, I was confirmed, by this physical sign, in the belief that there was no condition to be relieved by operation, and that enteritis and peritonitis alone existed; the diagnosis was correct, but an important factor in it proved to be fallacious. In the second case my previous mistake prevented me from falling into the same error, and in noting the condition existing I pointed out that it was *by no means* conclusive evidence of the presence of peritoneal effusion.

To the conditions which in their physical signs may simulate ascites, there must, therefore, be added the following:—Great distension of the intestines with liquid fæces and gas, as met with in intestinal obstruction.

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SPOTTISWOODE AND CO., NEW-STREET SQUARE
AND PARLIAMENT STREET