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Case of Intestinal Obstruction due to narrowing of the calibre of the bowel, as the result of recurring appendicitis.

By T. Lauder Brunton, M.D., F.R.S., and W. Watson Cheyne, F.R.S. *Read April* 27, 1894.

THE patient was a gentleman æt. 35, who was first taken ill in May, 1892, with fever, pain in the right iliac fossa, and other symptoms which led to the diagnosis of appendicitis, but which subsided without surgical interference. Since that time he had had a number of similar attacks of varying intensity, five of them severe ones, the last one being in May, 1893, and lasting about fourteen days. He had during this time paid great attention to the regulation of his diet, living chiefly on soups, potted meat, bread and milk, &c. He had been seen at various times by Dr. Lauder Brunton, and also by a well-known surgeon, who had urged removal of the appendix, to which the patient would have submitted but that he did not feel able to spare the necessary time from his work. During last summer the patient remained pretty well, except that he was much troubled with obstinate constipation. On September 11 last he had a severe attack of griping pain, chiefly on the left side, which lasted nearly an hour and then passed off.

These attacks continued to recur with increasing frequency, and the constipation, though not absolute, became more obstinate. He had no fever, and did not remain in bed. On the evening of September 22 he took a dose of castor oil, which did not act; on the contrary, the griping pains became very severe and almost constant, and he was completely obstructed, no flatus being passed. He had no vomiting. During the afternoon of September 23 he passed into a very collapsed state, the pain became intense, and Dr. Brunton was sent for. He advised that a surgeon should be called in without delay, and accordingly Mr. Watson Cheyne was asked to see him, and did so with Dr. Brunton at 10 p.m. His condition was then as follows:—Pulse 80, very small—in fact, hardly perceptible. Temp. 97·4°. Great pain, essentially of a griping character, starting on the left side and running towards the umbilicus; no tenderness anywhere, not much distension,

and what there was, was of a uniform character; no dulness. Tongue moist and not furred. He vomited while we were there, the vomited matter evidently being stomach contents, and Mr. Cheyne understood at the time that this was the first occasion on which he had vomited. While writing out the case, however, the patient tells us that he had vomited once if not twice before we arrived, and he thinks the vomit was stercoraceous, but what he vomited while we were there was not so.

Careful consideration of the history of the case, and of the existing condition, led us to the conclusion that the bowel at some part had become much narrowed as the result of the previous inflammatory attacks, and that the castor oil had caused increased congestion of the mucous membrane and completed the obstruction. We decided to leave him alone for the night, and ordered opium and atropine subcutaneously and fomentations, in the hope that the obstruction might yield: $\frac{1}{60}$ of a grain of strychnine was also given every four hours.

September 24, 10 A.M.—Patient has passed a very bad night, and has had no sleep. Since 7 A.M. the pain has been constant and severe, and he has vomited stercoraceous material on three occasions. Temp. 97°. Pulse cannot be felt: patient wandering and evidently moribund. When placed upon the operating table the patient was so far gone that we several times thought him dead, as he became insensible, the lower jaw fell, the half-closed eyes seemed to be glazed, and the surface was cold. It was only with a great deal of trouble that a feeble pulsation could be detected at all at the wrist, and the respirations were so faint that they could sometimes only be detected by minute inspection. As soon as possible afterwards the abdomen was opened in the middle line, and the small intestine was seen to be much congested and full of fluid and gas. On searching the abdomen with the finger thickening was felt in the right iliac region. A second incision was therefore made inside the anterior superior spine, and the region of the ileo-cæcal valve was at once exposed. The intestine at this part was thickly covered with adhesions, chiefly old and tough, but some apparently more recent. Embedded in this mass lay the appendix, which was coiled upwards and partly round the ileum, and contained a concretion. The appendix had evidently been in this position for a long time. It was freed and removed, and then the mass of adhesions was cut and torn through till it was found that the contents of the small intestine could be readily passed on into the

cæcum. A drainage-tube was passed down to this part and the rest of the wounds stitched up. After the operation, which lasted nearly three quarters of an hour, and during which ether had been administered, the pulse was perceptible; ether and strychnine were administered subcutaneously.

At 4 P.M. we found the patient easier, pain less, no further vomiting, pulse rather better, 90; temp. 97·2; tongue brown and dry. No gas or fæces had been passed. Six ounces of urine were drawn off (all that had been secreted since the previous afternoon).

At 10 P.M. pulse worse, barely perceptible; no vomiting. Ordered brandy *per rectum*, and repeated injections of strychnine and ether. A quarter-grain of morphia was given subcutaneously.

September 25, 8.30 A.M.—Patient has passed a restless night; no vomiting, pain less; no distension, no gas or fæces passed; pulse as bad as ever, 120; temp. 97°. Ordered nutrient enemata, a little whisky and Valentine's meat juice by the mouth, and to continue the strychnine.

9 P.M.—During the afternoon patient had two copious and extremely offensive motions, after which he was much exhausted. Pulse very much better, 100; temp. 99°.

September 26, 8.30 A.M.—Has passed a much better night; pulse good, 100; temp. 99°. Three fluid motions during the night. Ordered feeding by the mouth, and salol 10 grs. t. d. s.

Further reference to the daily progress of the case is unnecessary, as from this time the improvement, as regards the action of the bowels and the general condition of the patient, was practically uninterrupted. On September 30 the stools were solid for the first time. As regards the progress of the wound healing occurred satisfactorily except along one stitch track in the central incision, where a small abscess formed, no doubt because the skin was imperfectly disinfected in the haste with which the operation had to be done; this, however, gave no trouble. The drainage-tube leading down to the appendix was left out after ten days, the wounds were healed, the dressings left off on October 13, and the patient was up and dressed on October 20, and went out for a walk three days later.

Since that time the patient has remained well, and he writes a few days ago (beginning of February, 1894) as follows:—"As regards my present condition, I may say that every one who knows me says that I have not looked so well for years. I have been out to several dances and dinners,

and can eat and enjoy anything that is put before me. The bowels are acting regularly." The scars of the incisions are quite satisfactory, except at the place where the drainage-tube was, where there is a slight tendency to bulging, on account of which he is wearing a belt. (April, 1894.—Patient remains well.)

This case seemed to us of sufficient interest to be placed on record for three reasons: firstly, from the point of view of diagnosis; secondly, from the success attending the separation of the adhesions; and thirdly, from the extreme depression of the heart's action, a depression out of proportion to the other symptoms.

As regards the diagnosis, the first question that presented itself was—was this an attack of appendicitis, as the others had evidently been? or was it some sequela of the former attacks? The presence of a fresh attack of appendicitis was negatived chiefly by the history, by the absence of tenderness and fever, and by the character of the pain, which was spasmodic, griping, and referred especially to the left side and the umbilicus. The great difficulty was in excluding strangulation by a band. Our reasons for doing so were the history of increasing difficulty in getting the bowels to act during the summer; the long duration of the present symptoms (11 days); the character of the symptoms during that time, viz. the intermittent attacks of griping pain; the good general condition in the interval between the attacks, the patient being able to go about; the fact that the obstruction was not complete till within twenty-four hours of the time that we saw him together, and the absence of vomiting. (I have already mentioned that the patient has lately corrected this last statement, but Mr. Cheyne did not so understand at the time, and the absence of vomiting was one of his chief reasons for allowing a few hours more to elapse before operating.) These facts all pointed to a narrowing of the calibre of the bowel, and the coincidence of the complete obstruction with the dose of castor oil added to the certainty of the diagnosis, as indicating the existence of a narrow channel which had become closed as the result of inflammatory swelling of the mucous membrane, increased by the action of the oil. It was this diagnosis which seemed to us to warrant a few hours' longer delay, although the patient was in a very critical condition. We could not tell that the adhesions around the gut were so limited in extent and could be so easily disposed of as they proved to be; on the con-

trary, it seemed not improbable, considering the frequent attacks and the length of time that the trouble had been going on, that we should find a more extensive matting together of coils of the intestine, a condition which proved in one case, where Mr. Cheyne attempted to separate the adhesions, to be practically irremediable except by intestinal anastomosis. It therefore seemed to us right to allow a few hours longer to elapse, in the hope that with opium and fomentations this swelling of the mucous membrane might subside and allow passage of the fluid onwards, and a laparotomy under more favorable conditions.

As regards the operation itself, the ease with which the constricting bands were got rid of, and the apparently permanent expansion of the intestine which has resulted, are matters of great interest and importance. As a rule, the matting in cases of narrowing of the bowel after peritonitis is more extensive; it is very difficult to separate the adhesions without damaging the bowel, and fresh adhesions tend to form afterwards. As regards the incisions, the opening was made in the middle line in the first instance, because the patient localised the pain on the left side of the umbilicus, and it was thought well to ascertain the condition of the abdomen with the finger before cutting down on the appendix.

The third point of interest is the extreme depression of the circulation, which lasted so long after the operation, and passed off shortly after the free evacuation of the bowels. The explanation seems clearly to be that the intestinal contents were highly toxic, and that poisons were absorbed into the circulation which produced this marked depression; in fact, the patient was suffering from septic intoxication. Various substances have been obtained from putrefying material which have this depressing effect. It has been maintained by several surgeons that some of the bad symtoms in strangulated hernia, and especially the failure in recovery after operation, are in some cases to be explained by absorption of putrid matter from the intestine. In the case of strangulation, however, there is also a large amount of shock, and it is not easy to say how much of the trouble is due to shock, and how much, if any, to septic intoxication. But in this case there was no strangulation in the proper sense of that term, and no shock from that cause, and it is difficult to find any other satisfactory explanation of the patient's condition than that it was due to sapræmia from absorption of poisons from the intestinal canal, and it seems

to bring strong evidence in favour of the view alluded to with regard to strangulated hernia. Indeed, it became a question when the depression still continued after the operation, whether one should not make an attempt to remove this poisonous fluid by tapping the ileum through the wound. In conclusion we would refer to the great value of strychnine in these cases, and it is doubtful whether this patient would have recovered but for its administration during the critical period.

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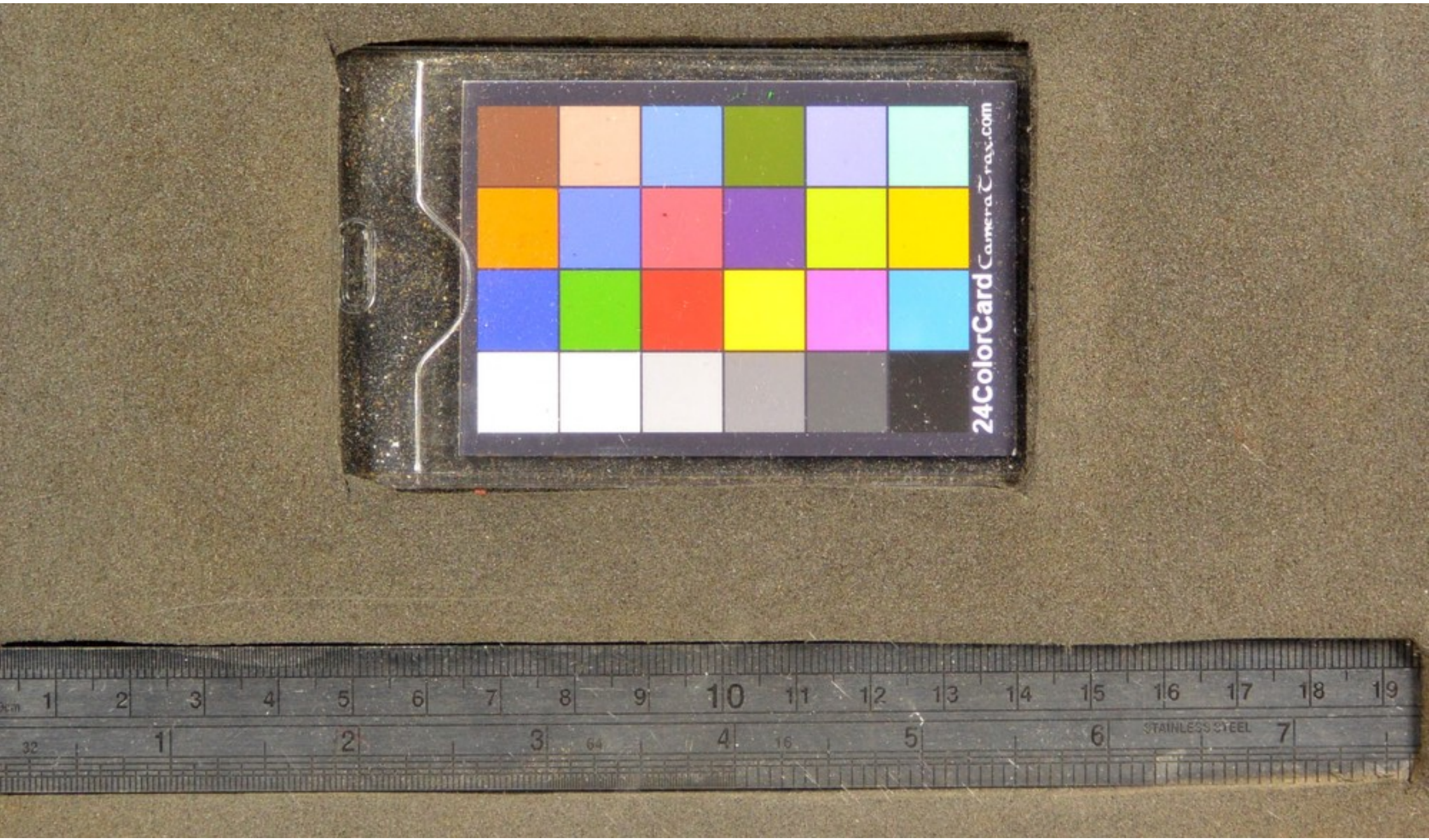
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