CHRONIC INTUSSUSCEPTION OF THE APPENDIX INTO THE CÆCUM: OPERATION: RECOVERY.

BY
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W. S., aged 2 years and 10 months, was seen on December 7th, 1896, by Dr. Knowles Renshaw, who gives the following report of the case up to the time of its admission to hospital.

A brother of this child died of diarrhoea in the summer, and the patient himself had for twelve months frequent alternations between constipation and diarrhoea. He had been suffering for some weeks from slight protrusion of the anus. On December 5th the child had an attack of diarrhoea; on the 7th he suddenly complained of pain in the abdomen, and was sick; a dose of castor oil was given without relief. Dr. Renshaw was then called in. He found the child suffering from well-marked attacks of colic, each attack lasting for a few seconds. The right leg was drawn up, and there was increased resistance at the right side of the umbilicus, but no definite tumour could be felt. There was no special tenderness near McBurney's point, but palpation soon brought on an attack of colic. The temperature was normal; the tongue slightly furred. The bowels had not been open since December 5th. Milk diet, hot fomentations, and a mixture containing bromide and an alkali were ordered. The same evening the bowels were moved, the stool being natural. The attacks of colic continued with some sickness on December 8th, and were worse during the night and early in the morning of the 9th, when the vomiting became frequent. On December 9th the colic continued, and a distinct tumour about the size and shape of a large walnut could be felt above and to the right of the umbilicus, just below the liver. Vomiting was frequent. A large simple enema was ordered, which brought away a quantity of mucus and a well-formed motion. On December 10th the vomiting ceased and the colic diminished, though there were several sharp attacks during the night. The tumour could be distinctly felt just above the umbilicus. On December 11th the attacks continued. An enema brought away a good motion, and the colic was relieved by opium. The child continued in much the same state till December 17th. An enema was given each day, and a formed motion came away. The tumour was felt between the umbilicus and the spleen on December 12th, and later moved downwards and towards the right. On December 16th it was just to the left of the umbilicus. Gurgling was several times heard at the seat of the tumour during an attack of colic. No more mucus and no blood were at any time seen in the stools; the temperature was normal throughout. On December 17th the child was admitted to the Children's Hospital under Mr. Wright's care, as Dr. Renshaw considered the case to be one of intussusception, which would probably require operation.

On admission to the hospital the resident medical officer, Mr. Izard, found the abdomen "apparently in normal condition;" no tension, there was "a vague sense of something in the nature of a swelling in the left hypochondriac region." Nothing abnormal was felt *per rectum*, some lumps of well-formed faecal material came away during the examination, but there was no mucus or blood. There was no "abdominal expression," and the pulse was good. On the following day (December 18th) the bowels were opened by simple enema; the child took food well, and for the next two days the pain seemed to have quite disappeared, but it returned on December 23rd. On December 26th the child was examined under chloroform by Mr. Izard; nothing abnormal was felt *per rectum*, but there was a definite tumour in the course of the transverse colon, most distinctly felt in the left hypochondrium. Manipulation of the swelling without an anæsthetic caused considerable pain. The condition did not materially change up to January 1st, 1897; the bowels acted and there was sickness once or twice. There was visible peristalsis during the attacks of colic, which occurred at intervals, and were brought on by palpation of the abdomen.

The general condition of the child slowly got worse, and on

January 7th the abdomen was opened by a median incision above the umbilicus. The mesenteric glands were found to be enlarged and hard, apparently tuberculous, but there were no tubercles seen on the intestines. A hard very freely movable mass was also felt evidently identical with the "tumour." This mass slipped off freely in the abdomen from the right iliac fossa into the right loin and over to the left side of the abdomen, but it was only with considerable difficulty that it could be brought out of the wound. It was then found that the tumour consisted of the cæcum much thickened by inflammatory infiltration of its walls, together with the adjacent small intestine firmly matted to it. The appendix thickened and bent upon itself with a coating of lymph upon its surface was found firmly tied down by its apex between the cæcum and ileum.

It was difficult, in consequence of the matting of the parts together, to make out the exact condition of affairs; but after carefully dissecting out the tip of the appendix it could be traced to its base, and here an invagination of the root of the appendix into the cæcum was found. The condition was as if the base of the appendix had been pushed into the cæcum, carrying part of the cæcal wall with it, and forming a depression about the size of the first joint of an adult index finger, from which the appendix sprang like the stalk of a mushroom. An enlarged gland lay close to the tip of the appendix. Attempts were made by squeezing and traction to withdraw the intussusception; but the rigidity and infiltration of the parts was so great that but little progress was made, and the peritoneal and muscular coats of the cæcum began to split at one or two points. An incision was then made into the cæcum in the course of a longitudinal muscular band and the finger passed into the bowel. By this pressure from within, aided by traction from without, part of the invagination was reduced, but the depression could not be completely obliterated. It having been ascertained that the lumen of the bowel in both directions was not materially encroached upon, the wound in the cæcum was closed by Lembert sutures; the appendix was ligatured and removed, its lumen being found completely obliterated at the root, and the abdomen was then closed. The after-progress of the case was satisfactory; the bowels acted on the 9th; the symptoms previously existing were relieved, and the child steadily improved in its general condition, and is now—May 4th—attending occasionally as an out-patient, though apparently quite well.

REMARKS BY DR. KNOWLES RENSHAW.

The reasons I came to the conclusion that the case was probably one of intussusception were as follows:

1. The symptoms pointed to trouble in the right iliac fossa when I first saw the patient, but from the absence of any rise of temperature or special tenderness near McBurney's point, I did not think that it was a case of appendicitis.
2. The persistent colic, the attacks of which became longer and worse as time progressed, seemed to me to be due to some lesion of the intestinal wall.
3. The tumour between December 9th and 12th moved from right to left in the path of the transverse colon, exactly as an intussusception does. This subsequently proved to be due to the extreme length of the mesocolon, which allowed the cæcum a great range of motion.
4. It was evident from the slowness of the general symptoms that whatever the cause it was not sufficient to completely obstruct the intestine.
5. After the first enema a quantity of mucus escaped. Against these facts must be placed the following:
 1. The rarity of chronic intussusception in children.
 2. The tumour was not sausage-shaped, but oval.
 3. There was no blood passed by the anus, and, except on one occasion, little mucus.

REMARKS BY MR. WRIGHT.

When I first examined the case, and indeed up to the time of the operation, my opinion was that the case was not one of intussusception, but of tuberculosis of the mesenteric glands, with incomplete obstruction by pressure and flexion of the bowel by an enlarged gland. Indeed, in this case there were enlarged tuberculous glands also present. I have twice been called to cases of supposed intussusception in which this con-

dition existed, and the absence of any characteristic signs of invagination, together with the history and appearance of the child, led me to this conclusion, though Dr. Renshaw's diagnosis proved to be the correct one. As the child's health was getting worse, I decided to explore the abdomen with a view of finding out which of the two conditions really existed, and whether it was possible to relieve the obstruction by removal of the gland, if that was the cause of the mischief, or by dealing with the intussusception if such it should prove to be. The condition found was puzzling, but I am inclined to explain it as probably primarily an appendicitis, for the appendix was thickened, its lumen obliterated, and it was firmly bound down by old adhesions as well as coated in part with more recent lymph.

The root of the appendix, by its hardness and fixity, probably became the starting point of the intussusception, just as a polypus or a shrunken segment of bowel may be; or, as in a case of Dr. Ashby's upon which I operated, just as a tuberculous gland may press into the wall of the gut, and cause an invagination. The slightness of the symptoms was no doubt due to the fact that the lumen of the gut was little if at all interfered with. The extreme mobility of the tumour was due to the length of the mesocæcum, possibly drawn out in the long course of the case. The question of resection of the cæcum in whole or in part was considered, but it was not thought advisable because the child was too feeble, and because exploration of the bowel from within showed that the gut was patent. Possibly the method of reduction adopted in this instance might prove useful even in cases where the invagination had gone further.

It is too soon yet to say whether the child will succumb to tuberculosis, or whether any future trouble will arise in the cæcum, but the removal of the appendix and the partial reduction of the invagination, as well as the great improvement in condition, make me hopeful that its troubles from that cause are at an end.

This particular form of intussusception must be exceedingly rare. I have not met with nor found a record of a similar case. We are indebted to Mr. Izard for notes of the case after its admission to hospital.

FOUR CASES OF RUPTURED TUBAL PREGNANCY.

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THE lodgment and development of a fertilised ovum within the lumen of a Fallopian tube is one of the most important abnormalities of pregnancy, and the almost inevitable rupture of the distended tube from growth and expansion of the ovum leads to one of the most anxious conditions with which a medical man is called upon to deal. The four cases, whose histories are here recorded, are examples of the latter condition—that is, rupture of the tube—in three of which surgical interference was called for:

CASE I.—The first case was that of the wife of a schoolmaster, aged 33, residing in a village some sixty miles from Manchester. She was the mother of three children, the youngest of whom was $\frac{1}{2}$ years old at the time when the events to be described took place. She had for some months worn a Hodge pessary on account of uterine prolapse; had always been regular until the month of May. Menstruation was due on May 21st, but did not appear; she had morning sickness and peculiar fancies about her food, just as in previous pregnancies, and therefore concluded that she was again pregnant. On June 14th—that is, about seven weeks from her last menstruation, there was some hæmorrhage from the vagina. On June 20th she sent for her doctor, Dr. Douglas Bone, of Hornby, on account of severe cramp-like pains in the lower part of the abdomen; she also complained of a bearing-down sensation, as if something wanted to pass by the bowel, although the bowels had freely moved that morning. On bimanual examination, Dr. Bone found a small lump above the left lateral fornix; the uterus was enlarged and the cervix patulous and softened. As the patient was in great pain, Dr. Bone returned to his surgery, some miles distant, for medicine; he was, however, followed by a messenger and hastily summoned back to the patient, who had suddenly become collapsed and fainted. On his return he found the patient blanched, with a pulse of 160, and the abdomen distended. The tumour, which had been felt an hour or two previously in the left half of the pelvis, had disappeared. The patient was in a state of collapse and remained so during the night, requiring repeated hypodermic administrations of digitalin and strychnine. Vomiting was troublesome, and no nourishment could be retained. This state persisted for twenty-four hours, and then the pulse improved a

little. At this time I received a telegram to go over prepared to operate. This I did, and found the condition much as above described. The patient's face was blanched, lips almost white, pulse 120, abdomen much distended, and dull to percussion in the lower half. *Per vaginam* no pelvic tumour was to be felt, but an indefinite sensation of fluid in the pouch of Douglas. On opening the abdomen I found the peritoneal cavity full of blood and blood clot. The exact information received from the doctor led me at once to examine the appendages on the left side, and on so doing I found the left tube enlarged and distended, with a rupture into which I could pass my finger about one-third of an inch distant from the uterus. The tube was secured by ligature and excised, together with its ovary, and as much blood as possible cleared out from the peritoneal cavity at the same time. No fœtus was discovered, but the tube contained evident placental tissue. The patient made an uninterrupted recovery, and in March of the following year Dr. Bone wrote to me, "Mrs. N. is in the best of health; has been skating all winter."

This was a case of primary intraperitoneal rupture, at the seventh or eighth week, of a tubal pregnancy, where the ovum was implanted in the inner third of the tube, this being the usual ending of such a condition. Owing to the anatomical disposition of the layers of the peritoneum of the broad ligament at this point, it is unusual for anything but a rupture directly into the peritoneal cavity to occur, probably always before the twelfth week.

CASE II.—In this instance the patient was a young lady, aged 22, who had previously enjoyed perfect health. She was under the care of Dr. Ritchie, of Manchester, who carefully observed the case from the beginning. The patient married in July, and menstruated regularly in July and August, but not in September. On October 1st, that is, one month and ten days after the last menstruation, she fell off a chair on which she had been standing, and immediately thereafter felt a pain in the left side of her abdomen, and vaginal hæmorrhage came on. There was no fainting, no sickness, no shock, nor any sign of internal hæmorrhage (when seen by her doctor). The pain and bleeding continued at intervals for 13 days, when the pains became more severe and something was passed *per vaginam* while the patient was at stool. After that time the pains and hæmorrhage recurred more frequently and more severely. On examination (October 22nd) Dr. Ritchie found a mass in the left half of the pelvis, and recognising that probably he had to do with a tubal pregnancy, asked me to see the case. On October 23rd I found the following condition: The uterus, about normal in size, was retroverted; the cervix was slightly softened; there was marked pulsation in the left lateral fornix, through which could be felt a smooth, firm, somewhat elastic body, distinct from the uterus, movable and tender. The greater portion of this mass lay to the left of the uterus, but its inner portion projected inwards to the middle line in front of the uterus—that is, in the utero-vesical pouch. I again examined the patient before performing abdominal section on October 26th, and found the size of the mass had in the meantime somewhat (slightly) increased. On opening the abdomen the parietal peritoneum of the anterior abdominal wall was found to be discoloured by blood pigment, and escaped blood was found free in the general peritoneal cavity. On passing the fingers downwards along the omentum, to which pieces of blood clot were adhering, its extremity was found to be adherent slightly to the upper surface of a mass occupying the left half of the pelvis, and coming forwards as far as the middle of the utero-vesical pouch in front of the uterus, which was retroverted. This mass was made up of the enlarged and distended tube surrounded by blood clot; on the posterior and upper portion of the tube, about its middle, was a large rupture which was occupied by a firm body, afterwards found to be an apoplectic ovum. This ovum had somewhat of the shape of a dumb-bell, and at the time of operation was halfway protruded through the rupture, the smoother end being still retained and attached to the interior of the Fallopian tube, while the other end projected into the peritoneal cavity, and was adherent to the sigmoid flexure of the colon. Ligatures were applied, and the tube with its ovary and part of the broad ligament were removed. Microscopic examination of the dumb-bell-shaped body showed the presence of chorionic villi, which proved its fœtal origin. The patient made an uninterrupted recovery, and Dr. Ritchie informs me that he has recently delivered the patient of a full-time healthy child, the labour being normal in every way.

This case, then, was a primary intraperitoneal rupture, probably before the eighth week of pregnancy, the ovum being implanted in the middle third of the tube; but the clinical history is essentially different from that of Case I, and this is accounted for by the different and very unusual pathological condition found—namely, rupture of the tube with blocking of the rupture by the partially detached ovum.

As to the diagnosis of these two conditions, in Case I the history was decisive: first, there were evidences of pregnancy—namely, amenorrhœa and morning sickness; secondly, a tumour was felt in the left pelvis, these facts giving a presumptive diagnosis of tubal pregnancy; later, there were signs of severe internal hæmorrhage, with disappearance of the tubal mass, pointing to intraperitoneal rupture.

In Case II there was again no difficulty in recognising that tubal pregnancy existed; the difficulty lay in deciding whether the pregnant tube was still unruptured, or whether tubal rupture or tubal abortion had taken place. The chief points against there being a still unruptured tube were (1) the size of the mass, this being too large for the probable length of time pregnancy had existed; and (2) the position of the mass. The history was suggestive of tubal abortion—that is, the escape of the ovum into the peritoneal cavity through