A CASE OF HERNIA OF THE CÆCUM,
ENTIRELY WANTING IN A PERITONEAL SAC,
IN WHICH
STRANGULATION AT THE INTERNAL ABDOMINAL RING
CO-EXISTED WITH AN INTUSSUSCEPTION THROUGH
THE ILEO-CÆCAL VALVE.

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THE following communication is, I regret to say, necessarily imperfect, inasmuch as it was impossible, although the patient died, to obtain a post-mortem examination of the parts involved. At the same time I trust that the rarity of the case described will be sufficient to justify its publication.

On the evening of October 26th, 1889, W. K—, a labourer, æt. 52, walked leisurely into St. George's Hospital complaining that an old-standing rupture, with which he was afflicted, and which he had been previously able at all times to replace with ease, had become irreducible.

The hernia, he said, had existed for eighteen years, but he had worn a truss during the last two years only, and

even during that period with much irregularity. The truss when in use kept the rupture up, as a rule ; and if by chance it came down behind the instrument, reduction was easily effected, being always accompanied by the ordinary and characteristic "gurgle."

Upon inquiry it was further elicited that the scrotum was always considerably larger and harder than normal on the affected side, in spite of the apparent completeness of the reduction of the hernia.

Twenty-four hours before the patient came to the hospital (the rupture "being up" at the time, to the best of his knowledge, although the truss was not in use) he noticed, whilst lifting a heavy basket, some discomfort about the scrotum, of a kind he had never before felt.

Upon examination he found that the rupture was larger than he had previously seen it, although he had experienced none of the usual sensations warning him of a sudden descent of gut.

In spite of this he continued his work, the size of the hernia gradually increasing in a manner quite different from anything he had before noticed. This gradual descent and steady increase of the rupture are significant facts, as will be subsequently seen.

Considerable pain of a burning nature soon supervened, which was entirely confined to the scrotum. He was therefore compelled to leave his work. He returned home, and having failed to reduce the tumour himself in the ordinary way he called in a medical man, who after repeated attempts was equally unsuccessful. Shortly after this he vomited. The night which followed was restless, and vomiting occurred at frequent intervals up to the time of his coming to the hospital. The bowels acted for the last time on the morning of the 24th.

The house surgeon, finding that the hernia was obviously irreducible and strangulated, at once sent the patient to bed. The buttocks were well raised, and ice applied to the rupture.

In spite of this proceeding the tumour very slowly

increased in size, and I was summoned to see the man soon after midnight (about six hours after his admission), when I found the condition of things as follows.

The man was stout and "full-blooded." The expression was somewhat anxious, the skin moist, and the pulse quick, regular, but inclined to be small. The temperature was subnormal. There was an entire absence of pain, umbilical or otherwise. There was nausea, but no vomiting.

The right side of the scrotum was occupied by a pyriform swelling, about the size of two closed fists, which ran upwards along the inguinal canal. This tumour was dull and full, but not extremely tense. There was no impulse on coughing. There was no abdominal distention, the parietes were flaccid, and no tenderness of any kind was present excepting at the extreme upper limit of the scrotal swelling.

Although the case appeared to be without doubt one of strangulated hernia, there was something about the general aspect and feel of the tumour which was not exactly like anything of the same kind which I had previously seen, so much so that I told Mr. Higgins, my house surgeon, that I fully expected to find an unusual state of affairs upon performing herniotomy, which was clearly necessary.

The patient having been anæsthetised, I cut down upon the hernia in the ordinary way, and ultimately exposed a somewhat tense tumour, obviously containing fluid, which at first sight seemed likely to be the sac of the rupture, although it had not the appearance of such as commonly seen. Upon pinching up this apparent sac there could be felt inside it a mass which slipped away from between my fingers, precisely as a tense knuckle of gut often does when felt in this manner inside a not very greatly distended peritoneal sac.

Although I was in much doubt about the structure exposed being the sac, for it struck me at the time, and I so stated my feeling to those present, that the tumour was not unlikely to be gut which was uncovered by peri-

toneum, I decided to open it ; for not only was it entirely irreducible in spite of free division of all surrounding soft parts which could be divided apparently with safety, but the mass, which could be felt inside, led me to suspect the existence possibly of a polypoid tumour of some kind, if the structure with which I was dealing proved to be actually bowel.

I must, however, confess that the possibility of the mass being an intussusception did not occur to me at this time.

A small incision having been made into the tumour, there spurted out with some force a quantity of clear watery fluid precisely like that which commonly escapes upon opening an ordinary sac in the course of herniotomy.

This, for the moment, made me think that my apprehensions were unfounded, and that after all it was merely a peritoneal sac that had been opened.

The walls of the tumour, however, as its contents escaped, were seen to contract *actively* ; moreover, the last portions of the fluid discharged were opaque, and had a faecal smell ; finally, there could be seen protruding from between the lips of my little incision some mucous membrane.

It was clear, therefore, as I had half anticipated, that I had opened the gut. It was equally obvious, as will be presently seen, that the gut was quite devoid of a peritoneal investment.

As the mass, which has been mentioned as having been felt inside, remained unchanged, the incision in the bowel was freely enlarged, and the following conditions of parts revealed.

The structure which had been laid open was the cæcum. Projecting from the upper and inner part *through* the ileo-cæcal valve, the margins of which could be felt grasping its base, was an intussuscepted piece of the ileum about three inches long.

Passing from the upper and outer part of the herniated cæcum could be seen the opening of the colon, which was

tightly constricted by a band of tissue crossing it at the internal ring. At the inner part could also be made out the opening of the vermiform appendix, the lumen of which seemed to pass upwards and backwards.

The calibre of the intussusception was so small, in consequence apparently of external constriction, that it would admit a single finger only with some difficulty.

After the division of the tight band which crossed the hernia at the internal ring, and which had escaped my notice before opening the gut, the bowel generally was so much liberated that the lumen of the colon appeared of normal size, and the intussusceptum admitted three fingers with ease, a quantity of flatus and a little fæcal matter being expelled at the same time.

Upon turning up the cæcum, which was of course now flabby and collapsed, the most careful examination failed to detect anything upon the surface of the gut which was in the least degree suggestive of the presence of peritoneum; but behind it there was seen passing down into the scrotum, and adherent to the testicle, a slender, rather œdematous piece of omentum, lying in a perfect and rather thin peritoneal sac, which, there is little doubt, had also contained the original hernia which the patient had been in the habit of reducing from time to time.

Upon passing the finger upwards, behind the cæcum, along the surface of this sac, it was arrested just at the point from which the appendix seemed to spring, where all the parts appeared hopelessly matted together.

The intussusception which showed, after the division of the constricting band mentioned, very little indication of congestion, and was but slightly swollen, was quite irreducible. There seemed also not the least chance of the hernia itself being made in any way reducible, excepting by the performance of extensive abdominal section, which the desperate condition of the patient at this time rendered entirely unjustifiable. The only proceeding available, therefore, was to suture the edges of the wound in the bowel to the margins of the scrotal incision—making,

in fact, a temporary artificial anus with a view to abdominal section, reduction of the gut, and restoration of its canal on a future occasion, if the patient should rally sufficiently—an occurrence which appeared highly improbable.

The existence of the intussusception entailed of course, under these circumstances, no danger of obstruction, for if it were not sufficiently patulous to allow spontaneous evacuation of the intestinal contents, the removal of any flatus or fæcal material which might accumulate could be easily effected by the passage of a tube through the invaginated gut.

For twelve hours after the operation the patient rallied to some extent, but did not gain sufficient strength to justify further operative measures.

Subsequently he gradually sank and died, apparently of asthenia, at 3 p.m. on October 29th.

The operation was followed by no abdominal distention, the parietes remained quite flaccid, and there was neither pain, tenderness, nor discomfort of any kind.

Nourishment was taken freely, and from time to time a little flatus and feculent matter came from the intussusception, which was perfectly patulous.

On the evening of October 28th, in order to make certain that no accumulation was taking place, a long tube was passed through the invaginated bowel, and about a quarter of a pint of liquid fæces withdrawn.

Remarks.

I. *As to the herniated cæcum.*—The occurrence of hernia of the cæcum without a peritoneal sac appears to have been formerly accepted by common consent as a fact which in itself was not in any degree remarkable.

It was also, I believe, rather extensively taught, even up to comparatively recent times, that on this account cæcal hernia was frequently irreducible.

Recently, however, the researches of Treves and others tend to show that the peritoneal relations of this viscus are such that *extra-peritoneal* hernia of the cæcum must of necessity be so rare that the possibility of its existence is hardly worth consideration.

This view is strongly supported by the absence hitherto, so far as I can ascertain, of a precise record of any instance of cæcal hernia devoid of a sac, which has actually been met with in practice.

A careful search through the notes of 565 cases of strangulated hernia, successively recorded in the register of St. George's Hospital, fails to afford a single instance of this condition, although several varieties of cæcal hernia occur.

Another point of some interest, in connection with the subject under discussion, shown by these 565 miscellaneous cases is the singularly small number of examples of strangulated herniæ of all kinds in which the cæcum formed any part of the hernial tumour, for in these 565 cases the cæcum was present in nine only (that is, 1·59 per cent.) ; and of these nine instances all were of a complicated nature excepting two, one of which was a remarkable case in which the cæcum occupied a hernial sac in the *left* groin.

Some further particulars of these nine cases will be found in the accompanying table (p. 138).

It will be seen that a complete peritoneal sac existed in all, with the exception of the one now recorded. In the whole series of 565 miscellaneous herniæ there was no case in which the contents of the sac were wanting in a complete peritoneal investment.

The case I have described in this communication is without doubt a genuine instance of the extra-peritoneal form of hernia ; for, as has been pointed out, there was not a vestige of peritoneum or anything approaching to it in appearance, either in the form of a sac or as an immediate visceral investment.

The escape of clear watery fluid, when the gut was

opened, is worthy of attention, since it is an unusual occurrence which might at any time be liable to mislead. The presence of such a fluid was, I presume, caused by excessive secretion from the congested and swollen mucous membrane in the tightly constricted bowel, which, at the time of strangulation, was free from fæcal contents.

I have had no previous experience of clear watery fluid coming from a knuckle of strangulated gut, but I have seen in the post-mortem room a case in which the vermiform appendix was greatly distended by a precisely similar fluid, in consequence apparently of its opening into the large intestine having been blocked. Instances of the same kind have been observed, I have no doubt, by others.

II. *As to the intussusception.*—This afforded a fair example of intussusception of the ileo-colic variety, *i. e.* invagination *through* the ileo-cæcal valve, which, according to the accepted authorities, is met with in only 8 per cent. of all cases of this affection.

An interesting point here arises with reference to the relation of the intussusception to the production of the hernia, and *vice versâ*.

The general aspect of the invaginated bowel, the disappearance of all congestion after the division of the external constriction, together with its patulous state, and the absolute irreducibility, are facts which seem to point to the condition being chronic.

On the other hand, the very gradual descent of the rupture, the unusual kind of pain, and the general sensations experienced, which were just such as might have been caused by a piece of gut making its way through loose connective tissue, point to the probability of the hernia being of a different kind from that which had previously troubled the patient.

This probability was converted into something very like a certainty by the discovery of the old and independent sac containing adherent omentum, but no bowel, which is referred to in the description of the case.

The evidence in this respect, therefore, seems to indicate that the presence of the cæcum in the hernial tumour was quite a recent condition.

At the same time it is, of course, fair to admit that the cæcum might possibly have occupied the same position previously without giving rise to any noticeable symptoms until the state of affairs became altered by the occurrence of the intussusception.

III. *As to the case generally.*—Under this head there is little to be said. Taking all the circumstances into consideration, the case is the most complicated example of strangulated hernia which in the course of a considerable experience I have yet had to deal with.

The treatment adopted seems to have been the only rational proceeding which was available. The issue from the first was hardly doubtful, and the death from asthenia was only what could have reasonably been expected.

Finally, it appears to me that, setting aside certain minor points of interest, the co-existence in this patient of two such conditions as extra-peritoneal hernia of the cæcum and the least frequent form of intussusception (ileo-colic) presents a case which, if it is not unique, as I suspect it to be, must at least be of such singular rarity that I have ventured to bring it to the notice of this Society.

Table of the only cases in which the Cæcum was found to form any portion of the Hernial Tumour in a series of 565 Herniotomies described in the Records of Strangulated Herniæ at St. George's Hospital.

No.	Age.	Sex.	Side.	Variety.	Contents of sac and their condition.	Result.	Remarks.
1	14	M.	Right	Congenital inguinal	Commencement of large gut and end of ileum — vermiform appendix (sloughing and perforated). Tight stricture caused by adhesions to independent piece of small intestine which crossed the sac	Died	Patient was in hopeless state from collapse and suppurative peritonitis at time of operation.
2	54	M.	"	"	The tunica vaginalis which formed the sac had been ruptured by an accident, and through the rent protruded the cæcum and a quantity of small intestine. Stricture at edges of rent	Recovered	—
3	73	M.	"	"	Bloody fluid. Testicle, small intestine, cæcum, and appendix all matted together	Died	Patient in condition of almost hopeless prostration.
4	54	M.	"	Inguinal	Pus, gangrenous vermiform appendix. Tight stricture at internal ring	"	Patient in condition of almost hopeless prostration.
5	70	F.	"	Femoral	Large mass of adherent omentum, cæcum with its appendix, ileum, and part of transverse colon	"	Patient in condition of almost hopeless prostration.
6	48	M.	Left	Inguinal	Sanious fluid. Vermiform appendix, cæcum, ileo-cæcal valve, and some small intestine. Very tight stricture	"	—

7	58	M.	Right inguinal	Cæcum and large mass of strangulated omentum	Recovered	Patient in good condition at time of operation.
8	2½	M.	"	Clear fluid. Whole cæcum and appendix, ileo-cæcal valve, and one inch of ileum	"	Patient in good condition at time of operation.
9	52	M.	Inguinal	Hernial tumour contained cæcum (without peritoneal sac or investment). Ileo-cæcal valve with ileo-colic intussusception. Sac of another hernia containing adherent omentum	Died	Case now recorded.

The principal points indicated by the above table are (1) the comparative infrequency of strangulated hernia of the cæcum in any form, the number of cases met with in this large series of 565 herniotomies amounting to only 1·59 per cent.; and (2) the extreme rareness of *uncomplicated* cases of this form of strangulated hernia, two instances only being found in this same series, *i. e.* 35 per cent.

Case No. 9 (now recorded) stands alone.

The very high rate of mortality (66·6 per cent.) is clearly due to the critical condition of the majority of the patients at the time of operation.

The cases here tabulated are exclusive of one instance in which the relation of a gangrenous cæcum to a hernial sac was doubtful.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. ii. p. 56.)