CASE
OF
TORSION OF THE SPERMATIC CORD,
WITH
STRANGULATION OF THE EPIDIDYMIS AND TESTICLE
IN AN INCOMPLETELY DESCENDED ORGAN.

BY
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On the evening of Thursday, September 26th, 1889, I was asked by Dr. Fox, of Barnet, to see P. G—, a boy æt. 15, with a swelling in his left inguinal and scrotal regions, and symptoms suggestive of strangulated hernia.

He was a healthy lad, but had suffered from constipation, and for five days had not had any action of the bowels. On Tuesday, the 24th, or two days before my visit, after a long bicycle run, unassociated with any accident, and to which he was accustomed, he went to bed as usual; but, quoting from a report of Dr. Fox's, "he woke his parents up during the night, complaining of pain in his scrotum and left groin." This was put down to the constipation, and a pill was administered to him next morning. After taking the pill he was sick and vomited. Dr. Fox was

then sent for. He visited the boy about noon on the 25th, and found him flushed and hot, and suffering greatly from a pain in his left groin, shooting down into the scrotum, and some pain about his umbilicus.

On examining the painful parts, the left inguinal canal was clearly distended, and below the external ring there was a swelling which was supposed to be the left testicle; between the testicle and the external ring there was a small swelling, which, on pressure, seemed to be reducible, and gave, when pressed upon, a sensation, which Dr. Fox describes as somewhat similar to the crepitation caused by squeezing lung-tissue.

At 9 p.m. on the 25th, Dr. Ryle (Dr. Fox's partner) saw the boy with Dr. Fox, and, as the case presented some of the features of hernia, it was determined to apply the taxis very gently when the lad was under the influence of an anæsthetic. This was therefore done, but with no good effect. Later on the lower bowel was well emptied by means of an enema.

On the morning of the 26th the boy was found to have passed a bad night; his temperature was 101° , and all his local symptoms were increased. Under these circumstances Dr. Fox, still thinking that the case, though obscure, was one of hernia, asked me to see him.

I found the boy in bed, with a normal pulse and no fever. His abdomen was flaccid and not distended. The bowels had not acted since they had been well cleared out by an enema the day before. The left upper half of the scrotum, from the external abdominal ring, with the whole of the inguinal canal up to the internal abdominal ring was swollen. The swelling in the scrotum was somewhat flattened laterally, as in a case of epididymitis, and the whole of the inguinal canal was filled with a tense, dull, fluctuating swelling, in which there was no impulse on coughing; and the gentlest manipulation caused severe pain.

The diagnosis of the case was by no means clear; the local symptoms were consistent, to a degree, with those of hernia, but the general symptoms did not support this

view. It was, however, thought right that an exploratory incision into the swelling should be made, and this I at once proceeded to do, as soon as the boy had been rendered insensible by chloroform. I made my incision from the external abdominal ring, and divided the soft parts down to the tunica vaginalis. Having done this a glistening coal-black object came into view through the sac, which, for the moment, was thought might be congested bowel. On opening the vaginal sac and laying open half the inguinal canal, much fluid, black blood escaped, and it became manifest that the black object which had been noticed was the testicle with its cord gorged with blood. On closer examination, it was then found that the cord had been twisted upon its axis in the inguinal canal, and that, as a result, the testis had become strangu-

lated with the epididymis. Three half twists made inwards completely untwisted the cord, which, when this had been done, looked like a bloated leech attached to a testicle, black from venous congestion or strangulation. As the testicle was warm, and therefore viable, it was deemed right to give it a chance of recovery; it was therefore replaced in its vaginal sac, and the soft parts

were sutured together, after having been well washed with iodine water, and dusted with iodol and boracic acid (1 part to 4). The wound was dressed with blue wool.

After the operation all symptoms at once disappeared, and the wound healed by quick union. For several weeks subsequently the testicle and cord remained thickened; but this soon disappeared, and later on the testicle atrophied. The boy is now quite well.

I should add that in this case the left testicle had only just passed through the external abdominal ring, and that to expose the cord where it was twisted, I had not only to lay open the sac of the tunica vaginalis, but the inner half of the inguinal canal. The internal abdominal ring seemed to be quite closed.

Remarks.—When this case first occurred to me, I thought it unique, as I was unable to find in any work a reference to one similar, although I am disposed to think that in Mr. Jacobson's admirable paper on Diseases of the Testicle, published in the 3rd vol., 3rd edition, of Mr. Holmes's 'Surgery,' p. 471, an example, in a lad aged nineteen, is recorded under another heading.

In the summer of this year, however, a preparation, consisting of a testicle and its cord, was forwarded by Mr. G. Nash, the then house-surgeon to the South Devon and East Cornwall Hospital, to the museum of the Royal College of Surgeons for examination, which was evidently taken from a case of the same nature. I have thought it wise, therefore, to introduce a report of this case in this paper, with a description of the preparation from the pathological curator of our College, although it has been published in one of the weekly journals ('British Med. Journal,' June 6th, 1891) by Mr. G. Nash.

A. H—, a boy æt. 16, was admitted on January 21st, 1891, at 4.45 p.m., into the South Devon and East Cornwall Hospital, Plymouth, under the care of Mr. C. Whipple.

He stated that for seven or eight years he had noticed

a lump in his left groin, which occasionally disappeared within his abdomen. This he believed to be his left testicle. The day before his admission, at 4 p.m., he strained himself, and felt something give way in the left groin. At 2 a.m., on the 21st, he noticed a lump in the groin, and at 8 a.m. began to vomit. He consulted a medical man, who diagnosed a strangulated hernia, and sent him to the hospital with a note to say he had sterco-raceous vomiting. Bowels acted slightly at 2 p.m. that day; before that two days ago.

On examination.—In the left groin was an hour-glass-shaped swelling. The lower half of this was the left testicle, lying in the upper part of the scrotum. The upper, lying on the external abdominal ring, about the size of a hen's egg, was very tense, quite dull on percussion, and gave no impulse on coughing. The pubes was shaved and washed; at 5.15 p.m. methylene was given. Mr. Whipple made an incision over the upper swelling, and a dark-coloured tense sac was exposed. This was opened and some blood-stained fluid gushed out. A dark claret-coloured coiled mass presented, and after careful examination, this was made out to be a much enlarged, strangulated epididymis. Lying in the lower half of the sac was the body of the testis, of about normal size; and attached to it, and forming a circle round its hilum, was a band of omentum. This tag was torn through, and the proximal part of the omentum, which was unaltered in appearance, was returned within the abdomen through a large inguinal canal. The epididymis appeared to be twisted twice upon its own axis. This was pulled down and untwisted. The epididymis was ligatured as high up as possible, and it and the testis were removed. The pedicle was dropped back. The sac was ligatured in halves and cut away, and the pillar of the external ring sutured. A rapid recovery ensued.

The specimen, A4262, Museum R.C.S. (shown), was examined by Mr. J. H. Targett, of the Royal College of Surgeons, and reported upon as follows:

“The preparation consists of the body and epididymis of the left testis, and the adjacent portion of the mesorchium. The body of the testis is normal. Between it and the globus major there is a deep groove, at the bottom of which lies a loop of omentum, which completely, but not tightly, encircles the attachment of the body of the testis to the epididymis. The torn end of this omentum is marked, the mesorchium measures nearly two inches across, and is irregularly swollen on either side from distension of the vessels and extravasation of blood between the layers of the peritoneum. The position of the vas deferens is indicated. At the junction of the mesorchium and epididymis, in the position of the globus minor, there is a well-marked constriction, which appears to have resulted from a severe twisting of the epididymis upon the mesorchium. To this torsion the acute strangulation of the epididymis was probably due, as well as the hæmorrhage into the fatty tissue of the mesorchium.

“On re-examining this specimen, I can see no other explanation than that the epididymis, or, to speak more correctly, the mesorchium, has become twisted as an ovarian pedicle may do, and so the circulation has become obstructed; for there is a well-marked groove at the base of the epididymis, where, I presume, the twisting has taken place. I have not met,” writes Mr. Targett, “with a similar complicated, strangulated, undescended testicle, nor do I know of any case recorded in the ordinary textbooks.”

Remarks.—In both of these cases to which your attention has just been drawn, the twisting of the cord took place in boys; in both the condition affected the left side, and in both there was an incomplete descent of the affected testicle.

In my own case the torsion took place within the inguinal canal. In Mr. Nash's case it was said to have occurred at the external abdominal ring. In my own case the strangulation of the parts had passed several stages beyond Mr. Nash's.

By what process the torsion of the cord was brought about I am profoundly ignorant, for neither accident, nor any of the changes which take place in the testicle during its physiological descent into the scrotum, seem capable of helping us towards a solution of the problem. I leave this point, therefore, for future solution.

I am, however, fully certain that these cases have occurred before, and have been overlooked, for if neither of the two cases I have brought before you had been operated upon, their true nature would never have been made known. Mechanical violence in the form of taxis would probably have been applied under the mistaken notion that the case was one of hernia, when, as a result, suppuration or gangrene of the injured organ might have ensued, and the case would eventually have been described as one of inflammation, with suppuration or gangrene of an imperfectly descended organ. On the other hand, when these serious results did not take place, and atrophy of the gland was the result of the local action, the case would have been recorded as one of atrophy after inflammation.

With these few remarks I leave the case for your consideration, and trust the Fellows of this Society will deem it worthy of a place in the records of surgery.

Ectopic Testicle, with a very short Pedicle, in the inguinal canal, combined with Inguinal Hernia, twisting of the Pedicle, with Hæmatoma of the Epididymis, and beginning gangrene, discovered by operation ; pyogenic Cocci found ; recovery. By W. W. KEEN, Professor of the Principles of Surgery, and of Clinical Surgery in the Jefferson Medical College, Philadelphia, Pa.

R. Van S—, æt. 23, was admitted to the Jefferson Medical College Hospital, February 17th, 1891. The following history was elicited :—From birth he had been troubled with a right, oblique, reducible inguinal hernia, and also an undescended testicle on the same side.

Three days before his admission he had an attack of vomiting, which ceased in the course of the day, and did not recur. The next day the bowels were constipated, and he observed an increase in the size of the tumour, which he attributed to the descent of the hernia. He attempted to reduce this, but failed. Considerable pain followed the attempt, and the tumour became exceedingly tender. Physical examination showed a tumour in the right inguinal canal, which was in part tympanitic, and in part very solid and resisting. It was so tender that no manipulation could be made with a view to taxis, excepting under an anæsthetic. The skin over the tumour also was beginning to be markedly inflamed.

My diagnosis was a combined hernia and ectopic testicle, as was evident from the absence of the right testicle in the scrotum. Accordingly, I operated on him the next day in the clinic.

Before making an incision, my colleague, Professor Brinton, while examining the tumour, was able very readily to reduce the hernia by taxis. An incision was then made over the tumour in the axis of the inguinal canal. The moment that I reached the testicle, I found a curious state of affairs, such as I was totally unfamiliar with. I found that the testicle lay in the inguinal canal, anchored by a pedicle about an inch long, which was attached to the abdominal wall at the internal inguinal ring. The testicle had been rotated three half-turns, and this had so obstructed the vessels, that a hæmatoma had formed just behind the testicle, the hæmatoma being about the same size as the testis itself. The hæmatoma was soft and black. Around the testicle and the hæmatoma was a small amount of fluid, with a slightly-marked fæcal odour. The internal ring was patulous and easily admitted the thumb.

I ligated the twisted cord, removed the testicle and cord, and then sutured the walls of the inguinal canal and of the internal ring together, after most careful and thorough disinfection and provision for drainage, as it

was probable that, in spite of the disinfection of the parts, suppuration would follow. Slight suppuration took place, with a moderate rise of temperature, and the wound finally healed by second intention throughout its length, giving a sound cicatrix, without any return of the hernia. In December, 1891, when the patient was seen, he was quite well and cured of his hernia.

The tumour was examined by Dr. W. M. L. Coplin and Dr. David Bevan, Bacteriological Assistants in the clinic. The latter made most careful cultures and microscopic sections, and furnished the following pathological report :

"In tubes inoculated from the serum about the testicle, there developed in twenty-four hours, at a temperature of 97° F., a well-marked growth which, however, then ceased to grow further. In appearance it was dull grey and opaque. From this growth a peculiar and offensive odour emanated. Microscopic examination determined the growth to consist of cocci, which in diameter measure $\cdot 8\pi$, arranged in zooglea, and of bacilli, short and slender, measuring in length about $1\cdot 5\pi$, and in breadth $\cdot 6\pi$. These organisms stain well with aniline dyes and by Gram's method.

"The hæmatoma was in an advanced condition of gangrene, and the process was evidently extending quite rapidly to the testicle, itself, showing in different parts various stages of disintegration. The vessels were thrombosed and many of them ruptured. Blood-corpuscles were diffused throughout the testicle. No micro-organisms were observed in the testicle itself."

Remarks.—The condition here reported is an extremely rare one, if I may judge from the fact that in thirty years of active hospital life I have never seen anything like it, and, moreover, none of my surgical friends of large experience have either seen or heard of a similar case, nor do I find any reference to it in the text-books.

Last September, when Mr. Bryant was in this country, I related the case to him ; and as he had had a similar

case, and also believed it to be very rare, at his request I have furnished him with an account of the case, with a view to its publication with his.

Undoubtedly, the efforts of the patient to reduce the supposed hernia were the cause of the rotation of the testicle, followed by the production of the hæmatoma and the rapidly increasing gangrene, beginning in the hæmatoma, and extending to the testicle itself. The infection by the two forms of bacteria is a matter of interest also, especially as there was a hernia combined with the ectopic testicle, and there is a strong presumption that the bacteria obtained access to the hæmatoma from the bowel itself. The use of the bichloride during the operation probably interfered with the development of the bacteria in the cultures. It could not, therefore, be determined whether the bacillus was the bacillus colicomunis or not, but this was probably the fact.

(For report of the discussion on this paper, see 'Proceedings of the Royal Medical and Chirurgical Society,' Third Series, vol. iv, p. 80.)