inflammation set up around it. It would also be interesting to know whether the hæmorrhage be venous, arterial, or capillary. Gowers says that healthy arteries, no matter how great the internal pressure to which they are subjected, seldom, perhaps never, give way, but that healthy veins may give way under extreme pressure. In this case we have no reason to believe that the arteries are in any way diseased.

The pressure to which arteries are subjected during a prolonged paroxysm of whooping-cough gradually diminishes after the first two or three expiratory efforts as the paroxysm proceeds, and in proportion as the arterial pressure diminishes the venous pressure increases, so that by the end of a severe paroxysm there is very little blood in the arteries, most of the blood being in the veins owing to the violent expiratory efforts retarding the flow of the venous blood in the *venæ cavæ*.

In whooping-cough, which is often accompanied (especially when bronchial symptoms have existed for some time) by enlarged bronchial glands, these still further impede the flow of blood in the large veins from the neck, and help to increase the venous pressure. This venous engorgement is seen during the paroxysm in the veins of the neck, face, and arms; it accounts for the hæmorrhages from the mucous surfaces, it accounts for the puffiness of the face about the eyelids, and when recurring constantly it causes some of the veins to remain dilated as those about the eyelids. From these remarks the low arterial pressure, the fact of a healthy artery seldom, perhaps never, giving way, we may reasonably exclude arterial hæmorrhage as the cause. On the other hand, from the high venous pressure, from the fact that veins have thinner walls than arteries, from the fact that healthy veins may under extreme pressure give way, and from the fact that the hæmorrhages which usually occur in whooping-cough are venous, we may reasonably assume that this hæmorrhage is venous, if it be a hæmorrhage, as I believe it to be.

A CASE OF HERNIA OF THE OVARY IN AN INFANT WITH TORSION OF THE PEDICLE.

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THE case which I am about to communicate is certainly very unusual. Mr. Pollard and others have described strangulation of herniated ovaries, but no record can be discovered of torsion of their pedicles. The details were as follows:

E. E. S. was a fat and healthy baby, 6 months old. On July 27th she refused the breast, was sick, and drew up her legs as if in pain. She was sick again upon July 28th, and upon July 29th her mother noticed for the first time a swelling in her right inguinal region. This swelling was tender but went away after some pressure. On July 30th the child slept quietly until the evening, when the lump returned. It was larger than it had been before, and the skin over it was red. Nothing was done to the swelling and the child was brought to the hospital. In the right inguinal region she had an oval swelling about 3 ins. long and $1\frac{1}{2}$ in. wide. Its upper end was at the internal abdominal ring, its lower end was lost in the right labium majus, which was inflamed and swollen. The skin over the swelling was also red and inflamed. The swelling was tense and had no impulse. Its size did not alter when the child cried, but it gradually increased until the operation.

The local characters of this swelling were those of an inflamed and strangulated inguinal hernia. This idea was supported by a history of constipation since July 28th, and of occasional vomiting, but after admission into the hospital flatus was passed, and a rectal examination was followed by a copious action of the bowels. This suggested that an operation was not urgently needed, but as the swelling did not subside and as the infant was in great pain, I performed an exploratory operation on August 2nd.

Chloroform having been given, an incision along the course of the inguinal canal exposed a bluish-red cyst with walls nearly an eighth of an inch thick. It was distended with about 2 drachms of dark brown, grumous fluid. When the sac was opened an ovoid mass, like a small damson, came

into view, and was thought for a moment to be a strangulated cæcum. But presently the deeply engorged, fimbriated end of the Fallopian tube was found peeping from beneath the lower part of this mass, which was now recognised to be an ovary full of blood. The ovary, Fallopian tube, and broad ligament lay free in the sac. About three-quarters of an inch from the internal abdominal ring their pedicle had made a half turn upon itself. This half turn was the cause of the vascular engorgement of the ovary, Fallopian tube, and broad ligament, because the part of the tube between the half twist and the internal abdominal ring was normal. Moreover, the internal abdominal ring was capacious, and seemed incapable of constricting its contents. When the ovary was pulled out of the sac the half turn disappeared.

The ovary and tube were clearly too much damaged to be returned into the abdomen. Therefore they were removed after the pedicle had been transfixed and tied. The sac was afterwards excised, and the stump fixed beneath the internal oblique and transversalis muscles, the inguinal canal was next sewn up, and the wound closed in the usual way with fishing gut.

The child made an uninterrupted recovery, and on August 10th the dressing was removed, the wound being healed by first intention.

The specimen merely shows the great engorgement of the ovary, Fallopian tube, and broad ligament with blood. The twist cannot be seen because it disappeared when the pedicle was divided. At the operation it was demonstrated to numerous spectators.

It is not at all easy to explain how the twist occurred. In the analogous case of torsion of the spermatic cord there seems little to indicate its causation. But some points seem quite clear. In the other specimens of hernia of the ovary which I have seen the herniated viscera had kept their relation to one another in spite of their displacement. Thus the Fallopian tube remains highest up in the hernial sac, with the ovary in front and below. This is, of course, different from the position of the ovary whilst within the abdomen; there it lies below the Fallopian tube but behind the broad ligament. But a moment's consideration shows that as the broad ligament with its contents turns the corner of the internal abdominal ring to get into the inguinal canal the position of the ovary is reversed. It keeps its position with regard to the Fallopian tube, but becomes anterior instead of posterior. In the present instance the ovary was the highest, having ascended in front of the Fallopian tube. The latter seemed to have fallen behind the ovary so as to be hidden from view except its fimbriated end, which peeped out below.

F T, Fallopian tube; O, ovary; P, pedicle (semidiagrammatic).

There is nothing to show why the ovary had ascended in this way, or how the Fallopian tube had got beneath it. But the end of the broad ligament in which they lay was quite loose within the hernial sac, so that considerable mobility must have been allowed.

A section had been made in the ovary, and shows that although full of blood it contains numerous ova. Under the microscope the ovarian tissues are normal, but the venules are distended with blood, and much blood is extravasated amongst the various structures.

[Since this case was read and published in extract, another of the same kind has been described by Mr. Edmund Owen.¹ In this the right side was also affected, and the pedicle had, I gather, undergone a similar twist with a similar result. Mr. Owen had also to excise the damaged ovary and tube.]

¹ *Lancet*, March 21st, 1896, p. 765.

SUCCESSFUL VACCINATION.—Dr. James Farquhar has received the Local Government Board award for successful vaccination in No. 3 district of the Pewsey Union for the second time.