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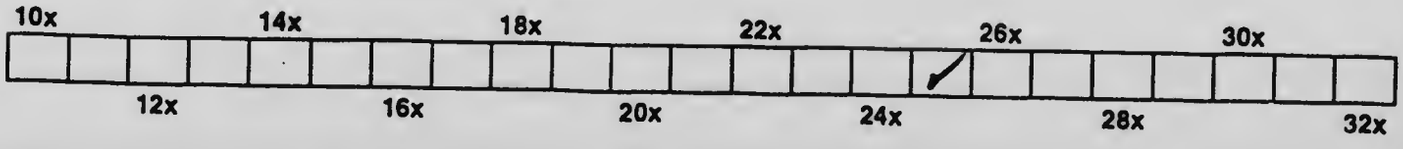

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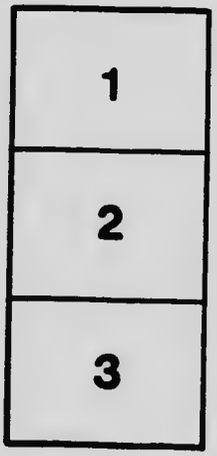

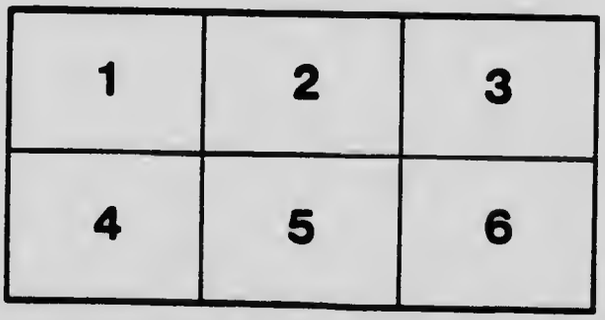

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CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

BY

FRANCIS J. SHEPHERD, M.D., LL.D., F.R.C.S.E. (Hon.), etc.

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CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

BY

FRANCIS J. SHEPHERD, M.D., LL.D., F.R.C.S.E. (Hon.). etc.

This affection has been little noticed until within the past ten years. Cautley in 1898, could only collect 17 cases; in 1902 with Mr. Dent, he reported 50 cases, and in 1906 at the British Medical Association Meeting at Toronto, Dr. Cautley said that there were between 100 and 150 cases scattered through the literature of recent years,—he himself had seen 16 cases.

These cases have been often overlooked and it is only recently that physicians have become alive to the existence of congenital pyloric stenosis. The child is born, as a rule, perfectly healthy and symptoms may come on a few hours after birth, or a few weeks or even months. The perfectly healthy baby may gain weight and do well for a week or two and then begin vomiting,—at least this is the symptom which first attracts attention,—though there may have been a disinclination for food sometime before.

The vomiting is characteristic; it is more a forcible ejection of milk from the stomach than vomiting. As soon as the stomach is distended with milk, it may after one or two feedings, the contents are forcibly shot out of the mouth and nostrils. There is relief as soon as the stomach is emptied and the child has no nausea and is ready to commence feeding again with the same result. There is no bile in the vomit but there may be mucus from gastric catarrh.

The obstruction may not be complete at first and thin food may pass through, but sooner or later, the obstruction becomes complete, the bowels are constantly constipated and emaciation rapidly sets in. In these cases peristalsis is readily seen and a tumour can be felt in the region of the pylorus, midway between the costal margin of the right side and the umbilicus. There is often also dilatation of the stomach.

The symptoms then of this affection are, according to Cautley, the characteristic vomiting, wasting, constipation, visible peristalsis, dilatation of the stomach, and a tumour. The pyloric tumour is due to an

Read before the Surgical Section of the Canadian Medical Association, at Ottawa, June, 1908.

enormous hypertrophy of the circular fibres to the size of "the last joint of the little finger of a female," or about the size and consistency of a thick rubber ring used for holding an umbrella closed. It is usually white and bloodless looking like fibrous tissue. The folding of the mucous membrane is the chief cause of the obstruction.

Cases of pyloric spasm may be mistaken for this affection. Here we have not the same kind of vomiting and the peristalsis is absent, as is also dilatation of the stomach and persistent constipation. In spasm the baby never retains one or two feedings.

All cases of the severe forms of stenosis if not operated on die. Mr. Dent had operated on nine cases by pyloroplasty in 1906 with the result that all the private cases, four in number, got well and of the five public cases three died within two months and one of summer diarrhœa three months after operation. Only one made a permanent recovery.

Mr. Harold Stiles, of Edinburgh, reports ten cases operated on by gastro-enterostomy and one by pyloroplasty. Of the ten cases five recovered, but two subsequently died of enteritis.

The pyloroplasty case died 17 hours after operation, the infolded edges of the wound blocking the opening. So in these eleven cases only three recovered.

In connection with this affection the following case operated on by me is interesting:—

E. E., born a strong healthy baby, began to vomit about the end of the second week after birth. The vomiting was characteristic, after several feedings the contents of the stomach would be ejected violently through the mouth and as this was not followed by nausea the infant would again be ready to take the breast with avidity. There was constipation and rapid loss of flesh. Soon peristalsis developed and a tumour could be felt in the region of the pylorus. I first saw the baby on November 28th, 1907, when 26 days old. There was emaciation, marked peristalsis and a definite pyloric tumour. Medical treatment had been without avail and as the vomiting continued unabated I advised immediate operation. This was performed on November 29th, chloroform administered and an incision not much over an inch in length was made above the umbilicus and the stomach pulled out with the duodenum. It was then seen that there was an enormously hypertrophied pyloric muscle which felt hard and inelastic and formed a complete ring, larger somewhat than those rubber rings used to hold the ends of the ribs of an umbrella together. Pyloroplasty was immediately decided upon and an incision made in the long axis of the stomach and bowel, cutting through this tough, fibrous-looking ring. The incision was of some length going up

well into the stomach and down through the walls of the duodenum. Some mucous membrane on each side of the incision into the stomach was seen to fall inwards and this was cut off with scissors.

The attempt was now made in the usual way to pull the middle parts of the incision (at the ring) upwards and downwards, but it was found that a large gap was left in the upper and lower angles owing to the thickness and inelasticity of the pyloric muscle. So this obstruction was cut freely away, as suggested by Mr. Dent, until the angles could be approximated. The opening was now quickly closed with a single row of Lambert sutures, the stomach replaced and the abdominal wound closed with through and through sutures. The whole operation took but a short time, which is an important point in very young children.

The after treatment was attended to by a special nurse, and this after treatment, let me remark, is quite as important as the operation. The baby was somewhat collapsed after the operation and cried much on recovery from the anæsthetic. A nutritive enema was immediately given, consisting of peptonized milk ℥i, and brandy 10 drops. This was repeated every three hours and was retained. In addition to this weak whiskey and water was given by the mouth which was eagerly taken and retained. The next day about 10 o'clock after the nutritive enema the child vomited some old blood and this went on most of the day. A well digested stool was passed and considerable flatus which much relieved the child.

The enemata were kept up for two days and then the baby was nursed by the mother at short intervals, a minute at a time and increased by the fourth day to four minutes every two hours. From this time the child progressed favourably and left hospital on the 8th day after operation and rapidly increasing in weight. The temperature went up to 102.5° after operation and then become normal; pulse, after operation, 130, went down below 100 at time of leaving hospital. When operated on the baby weighed 7 lbs. 5 oz., on the third day this had decreased to 7 lbs. 2½ oz., by the fifth day it had increased to 7 lbs. 6 oz., and when leaving the hospital weighed 7 lbs. 10 oz. After this the weight increased very rapidly and now the boy is a strong healthy child, very sturdy, aged 19 months and weighing 30 lbs.

There are three operations which have been performed for this affection:

1. Loreta's operation, or divulsion of the pylorus, which is now but seldom practised.
2. Gastro-enterostomy.
3. Pyloroplasty.

Both the latter operations have vigorous advocates.

Gastro-enterostomy has been much more frequently performed and has a strong friend in Mr. Harold Stiles, of Edinburgh, who has performed it some dozen times with about 50 per cent. of recoveries, though some of those died afterwards from acute enteritis. Mr. Dent had performed the same number of pyloro-plasties with much the same result, though all his private recovered and but 20 per cent. of the hospital ones, this no doubt was owing to the fact that the hospital cases were not operated on early enough.

It seems to me that pyloroplasty is the ideal operation, as none of the gut is side-tracked and the operation is not so prolonged or difficult, though many think otherwise. The objection urged against pyloroplasty is that the pyloric passage may become blocked by the infolding of the edges of the wound and the swelling of the cut mucous membrane. This has happened to Mr. Stiles, Mr. Campbell and Mr. Rutherford Morison,—but in all their operations the wound was closed by a double row of sutures. Now Mr. Dent uses only one row of sutures and this is quite feasible if the pyloric ring be cut away sufficiently before attempting to close the opening. I think also trimming the mucous membrane is a very important part of the operation and still further tends to prevent closure of the pyloric opening after operation.

A small abdominal incision is also advantageous and tends to prevent subsequent hernia which has occurred in some cases soon after operation. Through and through sutures are better for the thin wall of an infant's abdomen and is also a much more speedy process.

NOTE.—I saw this child the last week of November, 1908. I found him in splendid condition and nearly two years old.

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