Case 52 Vomiting in a baby

A baby boy aged 3 weeks was brought to the children's Emergency Department of a teaching hospital and the parents gave the following history: he was their second child and his sister, aged 4, was perfectly well. He had had a normal delivery, at full term, and mother and child left hospital the following day. He was being breastfed and had no problem until 4 days previously, when he began to be sick after his feeds. He would suck avidly then appear to be in discomfort and would then vomit the unchanged feed, which would 'shoot out'. The milk was never green or discoloured in any way.

What is your first clinical impression on hearing this story?

It sounds very suspicious that this baby has infantile hypertrophic pyloric stenosis. This typically presents between 2 and 8 weeks from birth; presentation later than 12 weeks is very unusual.

On examination, the baby had the classical clinical findings of this condition. What would you expect to find?

Boys are affected much more often than girls (80%) and they are often the first born. The condition may occur in siblings; the mother of one of our patients diagnosed the condition correctly in her second baby on his first vomit – she remembered his elder brother's symptoms so vividly!

The patient shows signs of dehydration and the anterior fontanelle may be depressed, although this sign is only evident at a fairly advanced stage. If a test feed of warm water is given, the baby drinks avidly but shortly after he vomits. This is often 'projectile' and shoots out of the baby's mouth. The vomit is the fluid just taken and is free from bile staining.

On inspection of the abdomen, visible peristalsis may be seen immediately after the feed, passing from left to right across the upper abdomen. Much more commonly – in about 95% of cases – the hypertrophied pylorus is felt as a distinct mass, 'the pyloric tumour'. Feeling this, in a fretful infant, requires a good deal of clinical skill. The baby is either put to the mother's breast or given a bottle and examined in the mother's arms. The warmed hand is gently insinuated over the baby's abdomen and the index and middle fingers placed over the right upper quadrant. Whatever you do, do not dig! The pyloric tumour is an olive-shaped mass about 1 cm in diameter. This finding is diagnostic.

In a doubtful case, the tumour can be picked up on ultrasonography.

What is known about the aetiology of this condition?

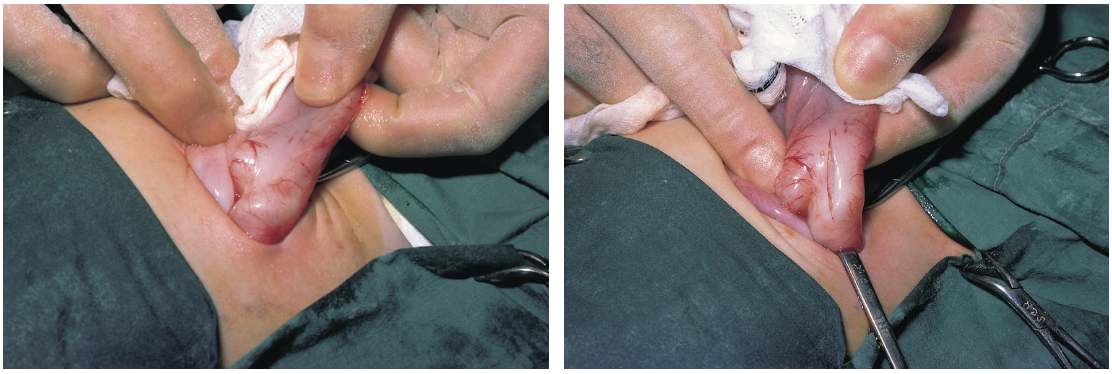
Amazingly little! Apart from the family history risk and its preponderance in males, as already noted, and the fact that it is commoner in north European and American Caucasians than in other races, with an incidence in the UK of about three per 1000 live births, its origin is obscure. A similar condition has been produced in puppies by administering pentagastrin to pregnant dogs.

The baby was given intravenous fluid replacement and operated upon the next morning. Some photographs were taken at surgery (Fig. 51.1).

What do they demonstrate?

These photographs were taken at open surgery, although the procedure is often performed laparoscopically. Figure 51.1a shows the index finger and thumb of the left hand of the surgeon holding the stomach out of the wound. The hypertrophied pylorus is seen just beyond these. Figure 51.1b shows the incision made across the pylorus. This will be carried down to the gastric mucosa, with care

*Conrad Ramstedt (1867–1963), surgeon, Munster, Germany.



(a) (b)

Figure 51.1 Ramstedt's pyloromyotomy. The stomach and proximal duodenum are delivered through the wound (a), and an incision made through the serosa across the pylorus (b).

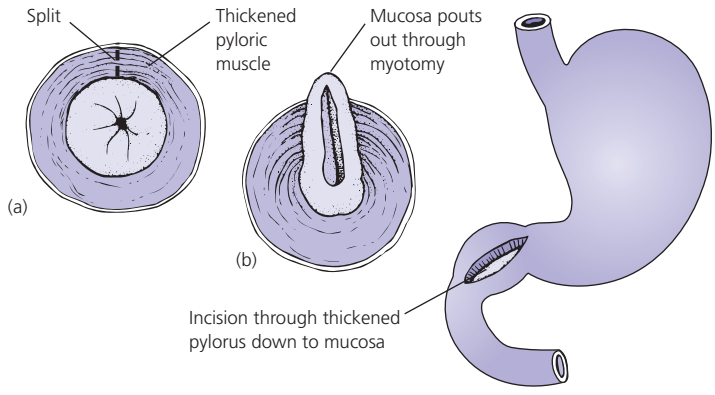


Figure 51.2 Ramstedt's pyloromyotomy, showing the pathology (a) and operative procedure in transverse section (b). The thickened muscle at the pylorus is split down to the mucosa.

being taken not to puncture the mucosal layer (Ramstedt's operation*) (Fig. 51.2).

What is the prognosis in such a case?

The mortality approaches zero and the long-term results are excellent.