

## Medical Memorandum

### Perforated Duodenal Ulcer During Pregnancy

Perforation of a duodenal ulcer during pregnancy is a rare and serious condition which requires urgent treatment to obtain a successful outcome for both mother and foetus.

The following case is reported on account of the rarity and importance of the condition, and also because some interesting points occurred during treatment.

#### CASE REPORT

A primipara aged 30 first attended hospital for routine antenatal care at the 14th and 30th weeks of pregnancy. One week after the last attendance she was admitted with epigastric pain associated with vomiting. A tentative diagnosis of hyperemesis was made, and as the trouble rapidly subsided she was discharged after a stay of three days. She was readmitted that same evening with severe abdominal pain of 12 hours' duration. She had also vomited half a pint (284 ml.) of blood. Her previous history revealed that she had experienced indigestion for three and a half years before she became pregnant, but had never sought medical advice. For the first 30 weeks of the pregnancy she had noticed complete freedom from indigestion.

Examination revealed a young woman of slight build. She was obviously in severe pain and there was a moderate degree of shock. Her temperature was 98.4° (36.9° C.), pulse rate 140, respirations 20, and blood pressure 120/80 mm. Hg. Abdominal examination showed the uterus was 32 weeks by size and obscured most of the abdomen, but there was tenderness with guarding, mainly in the epigastrium. The foetal heart sounds were heard. There were no signs of toxæmia of pregnancy.

A tentative diagnosis of perforated duodenal ulcer was made, and in the circumstances it was decided to treat the condition conservatively by continuous gastric suction; intravenous glucose and saline solution; pethidine, 100 mg. six-hourly; injection of penicillin, 1 mega unit twice daily; and injection of streptomycin, 1 g. twice daily. For the ensuing 24 hours her general condition remained unchanged and the foetal heart sounds were still present.

The serum electrolytes were then within normal limits: Na 126 mEq/l., K 4.87 mEq/l., Cl 84 mEq/l. White blood cells, 17,000/c.mm.; haemoglobin, 84%.

However, after a further 18 hours the membranes ruptured spontaneously and after a further three hours she miscarried and delivered a stillbirth.

The abdomen was diffusely tender, with moderate rigidity, and was silent on auscultation. As her general condition was still satisfactory it was decided that laparotomy would be the safest course, and this was performed. It was by now 60 hours after the onset of pain.

Under general anaesthesia the abdomen was opened through a right upper paramedian incision. There was much odourless bile-stained fluid in the peritoneal cavity. A large perforated duodenal ulcer about 19 mm. in diameter was found on the anterior aspect of the first part of the duodenum. The edges of the perforation were clean-cut, with little surrounding oedema. The perforation was closed with five catgut sutures and the wound closed with a small suprapubic drain to the pelvis.

Gastric suction with intravenous glucose and saline solution, and antibiotics, were continued as before the operation.

Her convalescence was satisfactory, although prolonged, owing to suspicion of a formation of a subphrenic abscess, which, indeed, she never had. She was discharged from hospital two months after admission and has remained well on diet since then, with no recurrence of indigestion. A

barium-meal examination performed three months after discharge showed the "duodenal cap deformed but not tender: appearances probably cicatricial."

#### COMMENT

During pregnancy activity of a peptic ulcer is infrequent and perforation of a peptic ulcer rare. Mussey (1927) reported only two cases of peptic ulceration in 370 operations during pregnancy at the Mayo Clinic in a period of 10 years.

In a search of the world literature Sandweiss *et al.* (1943) found 13 cases of complications of peptic ulceration during pregnancy; nine were cases of perforation and four were of haemorrhage. He found only one case of perforated duodenal ulcer in 70,310 pregnancies in Detroit in the period 1928-37, and also one case of perforated gastric ulcer in 348,310 pregnancies over a period of three years in New York. Both patients died. Avery Jones (1947) stated that no case of proved peptic ulcer was discovered among 10,000 pregnancies and 2,000 abortions that he reviewed. James (1948) reported one case of perforated duodenal ulcer at the 36th week of pregnancy in a patient with a known duodenal ulcer. Operation for suture of the perforation was performed and four days later spontaneous delivery of a living child occurred. The patient survived and six weeks afterwards a barium-meal examination showed an active duodenal ulcer.

Howkins (1950) quoted Professor Grey Turner's statement that he "has never seen undue activity of a peptic ulcer during pregnancy, but is very familiar with the opposite state of affairs where ulcer symptoms disappear during pregnancy"; also Sir Gordon Gordon-Taylor's statement that he "cannot remember a perforated gastric or duodenal ulcer during pregnancy."

Way (1945) attempted to explain the rarity of peptic ulcer and complications in pregnancy by correlating the hypochlorhydria found in these patients with the increased secretion of the anterior-pituitary-like hormones in the urine. He concluded that the greater the secretion of these latter the more marked the hypochlorhydria. This endocrine explanation appears to be the most likely reason for the rarity of peptic ulcer activity during pregnancy.

Hurst and Stewart (1929) stated that there was no doubt that pregnancy exerts a favourable influence on the symptoms of an ulcer and in some cases appears to lead to actual healing apart from any specific treatment. This they attributed to the mechanical effects of support of the stomach by the rising uterus. This is supposed to relieve the strain on the lesser curvature and improve the local circulation, which promotes healing of any ulcer.

It is noteworthy that most cases of perforated ulcers during pregnancy have a definite history or radiological proof of an ulcer prior to pregnancy. The case here reported occurred in an undiagnosed ulcer case. Treatment was at first by the conservative method, but, after miscarriage, operation revealed a large unsealed perforation, and this was closed and convalescence was uninterrupted. When the patient was seen six months later progress had been quite satisfactory.

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