second possibility arises from its paradoxical effect in preventing implantation in rats, either by accelerated tubal transport of eggs or by counteracting the oestrogen surge at ovulation (Harper and Walpole, 1967b). Probably small doses of ICI 46,474 given continuously to normally ovulating women might prevent implantation without otherwise interfering with the normal menstrual cycle.

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MEDICAL MEMORANDA

Cullen's Sign in Perforated Duodenal Ulcer

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Cullen's sign of staining at the umbilicus is widely held to be pathognomonic of acute pancreatitis (Zachary Cope, 1963; Hamilton Bailey, 1967). A search of the literature has failed to find any previous mention of this sign in association with perforation of a duodenal ulcer. A case of this obscure occurrence is reported.

Case Report

A 40-year-old housewife was transferred from a mental hospital with increasing central abdominal pain and shock of 24 hours' duration. There was a known 15-year history of intermittent epigastric pain, which had been ascribed to her psychiatric syndrome of anxiety and depression. This pain had been pronounced for two days; she vomited once.

On admission she was pale and sweating, with rapid shallow respiration and peripheral cyanosis, the pulse was barely palpable at 150 beats per minute, and the blood pressure was unrecordable. There were generalized tenderness and rigidity of the abdomen, and an area of bruising and pronounced tenderness around the umbilicus was noted. Her condition improved greatly after the infusion of four units of dried plasma. On clinical grounds the differential diagnosis was considered to be between a perforated duodenal ulcer, favoured by the long history, and acute pancreatitis, thought to be favoured by the bruising around the umbilicus.

Investigations showed: haemoglobin 13.8 g/100 ml; packed cell volume 47%; white blood count 6,500/mm³; serum sodium 128 mEq/l.; serum potassium 6 mEq/l.; serum calcium 10 mg/100 ml; serum amylase 266 Somogyi units; blood urea 76 mg/100 ml.

At laparotomy gross peritoneal contamination by non-sanguineous fluid containing strands of fibrin was found, 2,500 ml of fluid being aspirated. There was a large perforation of a chronic anterior duodenal ulcer. Fat necrosis was not present, the pancreas appeared and felt normal, and there was no obvious haematoma in the falciform ligament or retroperitoneal area. In view of the

patient's poor condition the ulcer was oversewn and no attempt made at ulcer-curative surgery. Convalescence was complicated by a pelvic abscess, which settled. Five months later she was well and the decision was made not to proceed to further surgery.

Comment

The first report in the literature of staining at the umbilicus was by Ransohoff (1905), who recorded a case of bile-staining at that site following spontaneous rupture of the common bile duct. Cullen's name was attached to the sign of periumbilical bruising after he described it in a patient with a ruptured ectopic pregnancy (Cullen, 1918). Grey Turner (1919) observed bruising of the flanks in acute pancreatitis, and Cox (1945) reported a case of umbilical bruising in pancreatitis. Since then it has been accepted as a late indication of acute pancreatitis (Zachary Cope, 1963; Hamilton Bailey, 1967).

The pitfalls in the differential diagnosis of acute pancreatitis have been dwelt on by Trapnell and Anderson (1967). They described a case (No. 2) of strangulation obstruction due to adhesions, associated with bluish discoloration of the flanks, found at necropsy to have a normal pancreas. The mechanism of umbilical and flank bruising occurring in perforation and strangulation is obscure, since the digestive action of released retroperitoneal trypsin cannot be invoked, as it has been, to explain their occurrence in acute pancreatitis. Fallis, quoted by Cox (1945), suggested abnormal apertures in the peritoneum underlying the umbilical region as a route, but considered the falciform ligament to be a more likely possibility, in view of the absence of intraperitoneal blood-stained fluid in two of his cases showing this sign. Whatever the mechanism, bruising around the umbilicus and in the flank cannot be taken in isolation as strong evidence of acute pancreatitis, justifying conservative management when laparotomy is otherwise indicated.

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