cerebral oedema, but if this is so it is surprising that cerebral oedema occurs so rarely in patients treated for diabetic ketosis with intravenous saline.

Until more is known about the aetiology of this form of sudden death in diabetic ketosis it may be advisable to be cautious in the administration of sodium bicarbonate. Furthermore, it may be advisable to reduce the blood glucose in ketotic patients more slowly than is usually advocated, and this could be achieved by the earlier administration of glucose-containing infusions.

We wish to thank Dr. J. C. Woodrow, under whose care this patient was admitted, Dr. F. Whitwell, and Dr. P. Buxton for the necropsy findings.

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Infected Retro-umbilical Dermoid Presenting as an Acute Emergency

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Primary sepsis in the region of the umbilicus usually presents with umbilical discharge, and the diagnosis of infection in the abdominal wall is self-evident. The main diagnostic problem is to exclude underlying intra-abdominal disease. The case reported here presented as an abdominal emergency, having been referred as possibly a small-bowel obstruction or atypical appendicitis. A foul-smelling umbilical discharge had been present but was ignored by the patient.

CASE REPORT

A 20-year-old house painter was admitted to hospital on 7 December 1967. He complained of having had intermittent central abdominal pain for the previous 10 days. The pain had become constant in the last four days. There was minimal radiation to the sides, more so the right, but no nausea or vomiting. An oblique right inguinal hernial sac had been excised and a Bassini repair carried out 12 weeks previously.

On examination the abdomen was slightly distended and there was marked rigidity of the right half of the abdomen, especially in the lower quarter. The rigidity of the right rectus muscle was particularly noticeable. The umbilicus appeared normal. Bowel sounds were loud and hyperactive. Rectal examination was negative. The clinical findings suggested a spreading peritonitis possibly from a perforated appendix, except for the hyperperistalsis suggesting a mechanical obstruction. The extensive rigidity of the right half of the abdomen was not in keeping with a simple small-bowel obstruction following repair of the inguinal hernia.

Operation.—A lower right paramedian incision was made. The anterior rectus sheath was incised and the rectus muscle retracted. Just below the umbilicus there was an obvious swelling in the posterior rectus sheath measuring about 2 in. (5 cm.) in diameter. The posterior sheath was incised below the swelling and the peritoneum opened. A loop of small bowel was found adherent to the swelling in the posterior sheath but was easily separated from it. There was minimal dilatation of the small bowel above this level. An incision was made into the swelling and about 15 ml. of creamy pus evacuated. The paramedian incision was extended above the umbilicus and the swelling in the posterior rectus sheath was fully explored. This revealed a definite cyst about 2 cm. in diameter within the posterior sheath. Incision into the cyst produced sebaceous-like material. The cyst was connected by a fibrous band

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to the umbilicus. The umbilicus and the adjoining cyst were removed en bloc and the rectus sheath was repaired. Postoperative recovery was uneventful.

On further questioning the patient admitted to having had a watery foul-smelling discharge from the umbilicus for a week before operation. He had not mentioned this to his own doctor or on admission to hospital. On examination after operative excision the umbilicus appeared superficially normal. A small piece of keratinous debris was removed from the bottom of the umbilical pit to reveal an underlying red patch from where the discharge had probably come. There was no other excoriation of the skin whatsoever.

COMMENT

Cullen (1916), in his monograph on the umbilicus, reported 23 cases of umbilical sepsis five of which were originally described as dermoid cysts. He believed they were all cases of primary umbilical sepsis. Trimingham and McDonald (1945), however, on discussing congenital abnormalities around the umbilicus, emphasized the importance of retro-umbilical dermoids as the basic cause of umbilical sepsis. Greig and Shucksmith (1950) disagreed and considered the most likely cause to be retention of keratinous debris in the umbilical pit associated with maceration of the epithelial lining of the duct wall of the sweat glands predisposing to infection. The present case undoubtedly fits in with Trimingham and McDonald's theory. Histological examination of the cyst buried in the posterior rectus sheath showed stratified squamous epithelium containing dermal papillae, the appearances being identical with normal skin. Pus was found only within the posterior rectus sheath, and the subumbilical connective tissue showed no naked-eye evidence of acute inflammation. The gross thickening of the posterior rectus sheath deep to the cyst indicated a fairly longstanding process and suggested that the primary source of infection lay deep within the abdominal wall.

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