A 4-month-old White male child was admitted to the Pretoria General Hospital with a history, given by the mother, of diarrhoea and vomiting for a week before admission. The vomiting occurred after each feed, it was not projectile in nature, and the vomited material consisted only of ingested material. The stool was green in colour, copious and watery, but was never blood-stained. The child had been feverish and irritable but never definitely suffering from cramp-like pains or abdominal distension.

The child was found to be well fed though slightly anaemic but with no jaundice or dehydration. The pulse rate was rapid and the temperature 100·8°F on admission. The abdomen was not distended but a mass was palpable in the right iliac fossa which was thought to be an ileocaecal intussusception, being sausage-shaped and lying longitudinally in the lower abdomen. On rectal examination the mass could be palpated on the right side and it was found to be mobile on bimanual manipulation.

X-ray examination with a barium enema was carried out and, though the terminal part of the ileum was not filled, the rest of the colon filled easily and quickly and was normal in outline. The caecum was seen to be displaced medially. Excretion and retrograde pyelography showed the kidneys to be normally situated, thus excluding a tumour or anomaly of renal origin. The intestinal gas shadows were seen to be displaced medially in the right lower abdomen. The diagnosis of mesenteric cyst was made, and the attacks of diarrhoea and vomiting were thought to have been caused by gastro-enteritis.

The gastro-enteritis cleared up with regulation of the diet and oral antibiotics, and the anaemia was corrected by blood transfusion.

At operation, under general anaesthetic through a right lower abdominal paramedian incision, a cystic tumour measuring about $2\frac{3}{4} \times 1\frac{3}{4} \times 1\frac{1}{2}$ inches, and dumb-bell shaped, was seen lying longitudinally alongside and lateral to the caecum. The appendix was directed laterally and its tip was firmly adherent to the anterior aspect of the lower pole of the cyst. A tail of omentum was adherent to the waist, and from both the omentum and the appendix blood vessels radiated over the cyst wall. A branch of the right colic artery passed behind the ascending colon and spread over the upper pole of the cyst (Fig. 1). Removal of the cyst was accomplished by detaching the appendix from the caecum and ligating and invaginating the stump; dividing the omentum about $1\frac{1}{2}$ inches above its extremity, and ligating the branch of the right colic artery to the cyst. The cyst was easily separated from the caecum. The abdomen was closed in layers without drainage of the peritoneal cavity. Convalescence was uneventful and the child was allowed home on the 7th post-operative day.

Anatomy and histology. The dumb-bell-shaped cyst consisted of an upper relatively thick-walled part supplied by a branch

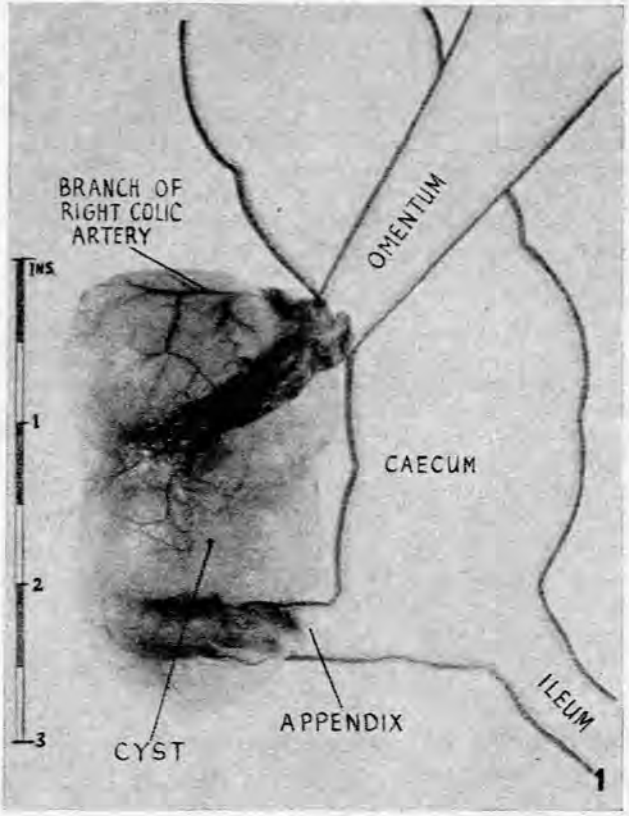

Fig. 1.

of the right colic artery. The waist and the lower pole were thinner walled and received blood supply from the omentum and the appendix (Fig. 1). The appendicular mesentery was completely separate from the cyst, and the cyst covered by peritoneum continuous with that of the caecum, was applied to the posterior abdominal wall. Histological preparations were made from the upper thick-walled part and the part to which the appendicular tip was adherent. The upper pole consisted of a well-defined muscular coat of smooth muscle arranged in two definite layers. No mucous membrane could be identified. The section through the appendix revealed that the muscular coat consisted of a single layer of smooth muscle, which blended with the outer longitudinal muscle of the appendix. The mucous lining of the cyst was thinned out and a layer of flattened epithelial cells was visible in certain parts. Although lymphoid tissue was present in abundance in the appendix, none was present in the cyst wall itself.

COMMENT

Ladd and Gross[1,2] grouped a variety of embryological anomalies associated with the alimentary tract under the heading 'Duplications of the alimentary tract'. These anomalies occur as diverticula, cysts and duplications and have a common developmental origin, that of sequestration of part of the developing alimentary canal in the 6 - 10 week embryo. The anomalies simulate the bowel structurally; they contain smooth muscle layers and mucous membrane resembling the mucous membrane of the bowel though not necessarily of the contiguous parts. The anomalous structure is usually partially or wholly adherent to the contiguous gut, and histologically it may be noted that the muscularis intervening is a common structure to both 'duplication' and contiguous bowel. The mucous membrane may be well defined, or flattened or partially or wholly absent as a result of enzymic or pressure necrosis. These anomalies are usually situated along the mesenteric side of the bowel from which they derive.

Duplications of the alimentary canal occur most commonly in the ileocaecal region.[1-5] Manifestations of 'duplication' anomalies of the appendix are relatively rare, occurring as multiple diverticula[6] or as true duplications.[7] A case of a giant cyst of the appendix has been described,[8] but this appears to have resulted from a possible inflammatory process and the formation of a mucocele. I have been unable to find any descriptions of true enterogenous cysts of appendicular origin in the literature.

In the present case the cyst presented most of the features of an enterogenous cyst on macroscopical and histological examination. Owing to tenseness caused by the accumulation of a large quantity of mucous fluid, the mucous membrane has survived only in parts of the cyst. The situation of the cyst relative to the caecum was unusual, and the cyst was found to be completely separable from that part of the bowel. It was, however, firmly attached to the tip of the appendix and adherent to it on its mesenteric aspect, although the meso-appendix was not involved. On the other hand, the absence of lymphoid tissue in the cyst wall, and the fact that the blood supply was derived mainly from the right colic artery, with a secondary supply through the adherent greater omentum and appendix, preclude the presumption that the cyst is derived from the appendix.

SUMMARY AND CONCLUSION

An enterogenous cyst in the ileocaecal region of a 4-month-old boy is described. This cyst may have resulted from a developmental fault in the developing appendix. The cyst was discovered incidentally when the child presented with gastro-enteritis.

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