The second potential collateral circulation lies between the inferior mesenteric and one or both iliac arteries. The ileo-lumbar and thoraco-epigastric arteries anastomose with the inferior mesenteric, circumflex iliac, and circumflex femoral arteries. This potential collateral circuit requires time to reach a useful degree of functional capacity and is not available when sudden obliteration of the superior mesenteric and internal iliac arteries occurs (Smith and Szilagyi, 1960).

X-ray pictures as described by Wang and Reeves (1960) range from multiple ulcerations which simulate regional ileitis or ulcerative colitis to localized bowel infarction which simulates an intraluminal tumour. As reported by Boley *et al.* (1963), reversible vascular occlusion of the colon may occur with marginal indentations ("thumb-printing") visible radiologically. These indentations disappear when ulceration of the areas of submucosal haemorrhage occurs. Healing then proceeds with or without narrowing of the lumen of the colon.

The diagnosis of a defective colonic circulation is best made by sigmoidoscopy, which may reveal changes varying from deep cyanosis to superficial ulceration. The ischaemic ulcerated colon is particularly vulnerable to secondary bacterial invasion. The latter can usually be suppressed by antibiotics, which explains their undoubted value in this condition. Because of the vascular changes in the fundi, the raised systolic blood-pressure, the evidence of myocardial ischaemia in the electrocardiogram, and the unfolding of the aorta seen on chest x-ray examination, it is reasonable to presume that the thrombosis of the aorta was arteriosclerotic in origin. In patients in whom

unexplained diarrhoea coexists with symptoms of vascular disease elsewhere the possibility of defective colonic circulation should be borne in mind.

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Y. K. SEEDAT, M.B., B.CH., B.A.O., F.C.P.(S.A.),
Assistant Physician-Lecturer.

N. R. POOLER, M.B., B.S., M.R.C.P.
Physician-Lecturer.

Department of Medicine,
University of Natal and King Edward VIII Hospital,
Durban.

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Rupture of an Infantile Umbilical Hernia

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The infantile umbilical hernia is remarkably free from complications; rupture of the sac is a very rare occurrence.

CASE REPORT

A girl aged 11 weeks was admitted to hospital half an hour after her true umbilical hernia ruptured during an early-morning feed. She had been born prematurely (gestation 38 weeks, birth weight 5 lb. 4 oz.; 2,380 g.) in hospital, and had had no abnormalities when discharged on her 12th day (weight 5 lb. 8 oz.; 2,500 g.). One month later a small umbilical hernia was noted during a follow-up examination, but as the neck would not admit the tip of a little finger (diameter 1 cm.) an assurance of spontaneous cure was given and a policy of non-intervention advised.

When, at 9 weeks, the protrusion increased, a penny, without any intervening padding, was applied and held in place by Elastoplast. Three days later it was taken off because the skin had become ulcerated. On using penicillin orally and a hydrocortisone-tetracycline spray locally the lesion began to heal satisfactorily, but seven days later the infant vomited after her 5 a.m. feed, became pale for a few moments, and then fell asleep. She looked well, and it was almost by chance that her mother looked at the hernia to find a small loop of gut protruding.

Operation (D. H. J.).—The hernia protruded 1½ in. (3.8 cm.) from the abdominal wall, and the apex had ulcerated over an area measuring ½ by ½ in. (1.3 by 1.3 cm.); the margins were crusted and dry. When the excessive skin was excised by an elliptical incision the neck of the sac was seen to be only ¼ in. (0.6 cm.) in diameter. The extruded caecum, appendix, and adjacent 1 ft. (30 cm.) of terminal ileum were returned into the abdomen without difficulty after stretching the neck of the sac. The sac was closed by interrupted catgut sutures, and the deficiency in the abdominal wall repaired with interrupted silk sutures. During this stage the

infant went into acute left ventricular failure, which responded to treatment but delayed her recovery from the anaesthetic.

Her post-operative course was marred by a superficial wound infection, despite prophylactic penicillin and streptomycin by injection.

COMMENT

Although non-intervention is probably the best policy to adopt for the infantile umbilical hernia, awaiting the spontaneous cure anticipated at an age of between 12 and 18 months (Gaisford, 1954), some authorities permit the use of Elastoplast for the larger hernias (Swenson, 1958), provided that no obstruction to healing is used beneath it, such as a cone-shaped pad or a coin. The latter has caused the sac to rupture in at least one other case (Sibley, Lynn, and Harris, 1954).

Strange (1956) described a fatal case in a 3-month-old Chinese boy, and at that time the only other case of spontaneous rupture in this situation on record was that of MacLean (1950); this also occurred at 3 months, but in neither case had infection weakened the wall of the hernia.

We are grateful to the parents and the consultants concerned (Mr. C. C. Cookson and Dr. P. N. Swift) for permission to publish this case.

D. HARDING-JONES, M.B., B.S.,
Surgical Registrar.

P. ROBSON, M.B., B.S., D.C.H.,
Paediatric Registrar.

Farnborough Hospital, Kent.

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