occur in any greater frequency than that expected in a normal population group. In a further investigation of families where the person with situs inversus was a twin, he concluded that the familial incidence of twinning was probably increased in this rare type of case. These findings are in conflict with my admittedly small series. However, the history of twinning in ascendants and collaterals in the families I have investigated is so striking that I suggest that this fact may be of importance genetically in some cases of situs inversus and is not mere coincidence.

I am indebted to Dr. M. L. Thomson, Royal Manchester Children's Hospital, and Dr. S. P. O'Toole, St. Patrick's Chest Hospital, Castlereagh, for clinical investigation of Cases 3 and 4.

J. CYRIL JOYCE, M.B., D.C.H., D.P.H.,
Assistant County Medical Officer, Roscommon.

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A Case of Congenital Extra-abdominal Herniation of Bowel

The usual form of congenital herniation of abdominal viscera is into the base of the umbilical cord and is known as an omphalocele. An omphalocele has a large peritoneal sac which is not covered by skin. In the following case report the criteria necessary for the diagnosis of omphalocele are not present in that (1) the umbilical cord was normal and in no way connected with the hernia, and (2) the bowel had no parietal peritoneal covering. This case is recorded because standard works on the subject bear no description of such a congenital anomaly.

CASE REPORT

An infant was admitted to hospital on December 15, 1954, at the age of $\frac{1}{2}$ hour. She was the first-born infant of parents both aged 28. The pregnancy had been uneventful; following spontaneous rupture of the membranes at thirty-four weeks a normal delivery resulted. Delivery was in a maternity home, and at birth the family practitioner (Dr. Philip Hogg) noticed the herniation of bowel and brought the infant immediately into hospital.

Examination revealed a newborn female baby in good general condition, although there was slight cyanosis of the lips. She cried lustily and was quite active. Her birth weight was estimated at 5 lb. (2.3 kg.). Physical examination revealed nothing abnormal apart from a cleft soft palate and the defect being described. The umbilical cord was normal, but 1 in. (2.5 cm.) to the right of the umbilicus, and separated by normal skin, was a clean-cut defect of the abdominal wall looking like a stab wound, through which approximately 2 ft. (60 cm.) of small bowel protruded (see illustration). There was no parietal peritoneal covering over the bowel and no hernial sac was present. The visceral peritoneum was thickened and the gut was brownish black in colour. Clinically there was doubt concerning the viability of the affected gut.

Operation.—At operation, by Mr. Stewart Feggetter two hours later, the 2 ft. (60 cm.) of thickened small gut was cleaned with saline and returned to the abdomen after the abdominal wall defect had been enlarged. The umbilical stump was removed and the abdomen closed in two layers.

Because of the excellence of the baby's general condition intravenous therapy was not given pre-operatively, and for the next few days she gave no cause for alarm. Intramuscular penicillin, 50,000 units six-hourly, and streptomycin, 50 mg. twice daily, were started immediately after

operation because of the possibility of peritonitis developing. Gastric suction during the next three days produced minimal quantities of bile-stained fluid, and as she had had three small bowel actions by December 18 oral feeding was then begun for the first time. Hourly feeds of 1 dr. (3.5 ml.) of glucose-saline were given initially, and when this was taken reasonably well the amount was increased and she was changed over to half-cream national dried milk.

On December 24 vomiting started and her abdomen was seen to be distended. She had passed only one small motion in five days, and as a radiograph of the abdomen revealed the presence of fluid levels it was presumed that there was an obstruction. She was treated medically with intravenous fluids and gastric suction, and by December 26 the distension had disappeared and once more oral feeding was begun. From December 27 to 30 bowel washouts were

Drawing of the case, showing protrusion of small bowel.

given daily and normal results obtained, but on December 29 once again abdominal distension was noticed, but no vomiting occurred. The distension disappeared after her daily washout.

On January 1, 1955, she had her first spontaneous motion, and, as from then onwards she had spontaneous normal motions each day, the bowel washouts were discontinued. Her weight, which was 4 lb. 11 oz. (2.1 kg.) on December 19 and remained more or less stationary until January 1, started to increase, and on January 12 she was discharged weighing 5 lb. 11 oz. (2.6 kg.) and feeding satisfactorily.

On January 21 her mother reported that the infant had given "no trouble." Her weight had increased to 6 lb. 1½ oz. (2.8 kg.) in the nine days, and examination showed her to be a lusty normal baby. On February 22 her weight had risen to 8 lb. 15½ oz. (4.07 kg.). She was in excellent general condition, but a small ventral hernia was present at the lower end of her abdominal wound. When last seen, on March 22 at the age of 14 weeks, she weighed 11 lb. (5 kg.).

COMMENT

This form of hernia must be extremely rare, and, in view of the stab-like wound through which the gut protruded, one might consider the hernia to be traumatic in origin. However, the appearance of the gut suggested that it had been outside the abdominal cavity for a long time during intra-uterine life. This suggested that its origin was congenital. Congenital abnormalities are often multiple, and the presence of a cleft soft palate seems to be further evidence in favour of its congenital origin.

With such a lesion, peritonitis and/or intestinal obstruction from adhesions is always a possible complication. Apart from the episode described above, this has not presented a problem to date, although it is possible that intestinal obstruction may develop in the future.

I thank Dr. Philip Hogg for the speed with which he brought the infant into our care, and Dr. George Davison and Mr. Stewart Feggetter for allowing me to publish this case history. I am extremely grateful to Dr. Davison for his helpful criticism.

GERALD M. LURIE, M.B., M.R.C.P.Ed., D.C.H.,
Children's Department, Newcastle General Hospital.