are chosen by the current machinery of selection to meet the national need for leadership in industry; after obtaining a university degree they not unnaturally prefer a niche with academic freedom to the more strenuous daily demands of industrial life.

Somatotype estimates of Oxford undergraduates were made while I was physician in charge of a pilot student health service at the Institute of Social Medicine, Oxford. Measurements on Birmingham students were made by kind permission of the senior university medical officer, Dr. R. H. Bolton, and I am indebted to his staff and to the following students who assisted me during the week of routine examinations: E. Anthony, J. A. Binnie, G. T. Brown, R. H. Cawley, H. R. Dobson, M. A. Harper, J. L. Pearce, M. G. Saunders, D. W. Theakston, G. B. White, G. T. Whitfield, and J. W. Woolley. My thanks are due also to Mrs. C. C. Standley and Mrs. S. McIntosh for their help in analysing the measurements.

REFERENCES

- Harris, C. F. (1951). *Conference of the Home Universities: Report of Proceedings*, p. 28.
 Morris, C. R. (1951). *Ibid.*, p. 36.
 Pakenham, Lord (1952). *The Times*, June 13, p. 4.
 Parnell, R. W. (1951). *British Medical Journal*, 1, 1292.
 — (1952). *Eugen. Rev.*, 44, 20.
 Sheldon, W. H., Stevens, S. S., and Tucker, W. B. (1940). *The Varieties of Human Physique*. Harper, New York and London.
 — (1942). *The Varieties of Temperament*. Harper, New York and London.
 Tanner, J. M. (1952). *Lancet*, 2, 405.
 Wavell, Lord (1952). *The Times*, June 13, p. 4.

Medical Memorandum

Ileo-ileal Intussusception Due to Meckel's Diverticulum and Complicated by Volvulus

Any increase in the bulk of a segment of intestine may cause it to become twisted on its mesentery. Among the causes of this increase in bulk which have been reported as causing a volvulus are the ingestion of large volumes of cereal food (Kerr and Kirkaldy-Willis, 1946), the presence in the bowel of a mass of worms or some other foreign body, and a tumour of the bowel or its covering (Allen and Welch, 1947).

In the case reported below the increase in bulk was due to an ileo-ileal intussusception, the head of which had entered the ascending colon. The intussusception itself was caused by the invagination of a Meckel's diverticulum containing a polyp of gastric mucosa. Clark (1944) reported a similar case.

CASE REPORT

A schoolboy aged 9 was admitted to hospital complaining of abdominal pain which had started 15 hours earlier. The pain was situated to the right of the umbilicus and was of a dull and persistent nature; it had been mild at first, but had steadily grown more severe. He had eaten a meal after it started but with no enjoyment, and had been sick twice, bringing up small quantities only. The vomit contained the pulp of an orange which he had eaten 24 hours previously. The bowels had been open normally in the morning, and there was no disturbance of micturition. This was the first attack of its kind that he had suffered. There was nothing relevant in the past history.

On examination the boy was strikingly pale; his temperature was 97.4° F. (36.3° C.), pulse 90, and respirations 20. The tongue was moist but covered with a white fur; there was no fetor oris. He appeared to be most comfortable lying on his left side. The abdomen was not unduly fat, and a lump was visible to the right of the umbilicus. There was no visible peristalsis, respiratory movement of the abdominal wall was free, and acute tenderness and guarding were present over the lump, but not elsewhere. The mass, which was about 2 in. (5 cm.) in diameter, had a smooth surface and appeared to be bilobed; it was freely

mobile and slightly more resonant to percussion than its surroundings. No signs of free fluid were present in the peritoneal cavity, and bowel sounds, though reduced in quantity, were normal in character. There were faeces in the rectum, and blood was not found on the examining finger. No abnormality was found in the respiratory or cardiovascular system. Plain x-ray films of the abdomen in the erect and supine positions showed no significant abnormality.

The provisional diagnosis was not certain. The presence of a position of relief (Evans and Bigger, 1947) suggested intestinal volvulus, but intussusception was thought to be a possibility.

Operation.—The abdomen was opened through a right paramedian incision, and two purple, distended loops of intestine—one the caecum, the other a coil of ileum—presented themselves in the wound. The caecum and ascending colon were attached to the posterior abdominal wall by a mesentery 2 in. (5 cm.) long and, with the terminal ileum, were rotated on this mesentery through 360 degrees in a clockwise direction. This volvulus was reduced without difficulty and the bowel immediately resumed its normal colour. It was then found that an ileo-ileal intussusception was also present, the junction of the intussusciens and intussusceptum being about 6 in. (15 cm.) from the ileo-caecal valve, while the head of the intussusceptum was palpable in the ascending colon 1½ in. (3.8 cm.) above the base of the appendix. This intussusception was reduced with some difficulty, and it was found that there was a Meckel's diverticulum at the head of the inner layer. The invaginated intestine was deep purple in colour, and it became apparent that the proximal 3 in. (7.6 cm.) was not going to recover viability. The whole affected length was therefore resected and a side-to-side anastomosis made about 6 in. (15 cm.) from the ileo-caecal junction. The abdomen was closed without drainage.

Intestinal suction with intravenous fluid and electrolyte replacement was kept up for three days, at the end of which time peristaltic sounds became audible in the abdomen and an enema produced a good result.

The patient went home on the eighth day after operation. When seen one month later he was in good health, with the wound soundly healed.

The operation specimen was a length of ileum 12 in. (30.5 cm.) long. Apart from ½ in. (1.25 cm.) at each end, it was deeply congested with blood. At ½ in. (1.25 cm.) from the proximal end, on the antimesenteric border, was a diverticulum about 1 in. (2.5 cm.) deep and ½ in. (1.25 cm.) in diameter at the base. Arising from the interior of the tapering apex was a soft pedunculated polyp ½ in. (1.25 cm.) long and ¼ in. (0.6 cm.) in diameter. The microscopical report by Dr. John Dean stated: "Sections of small intestine show extensive haemorrhage into all coats. The polyp of the Meckel's diverticulum is covered by mucosa of gastric type with conspicuous oxyntic cells."

COMMENT

According to Harkins (1933) the mortality from intussusception due to Meckel's diverticulum is half as high again as that from the idiopathic variety. He attributes this to slowness in diagnosing the condition. The effect of the superimposed volvulus in the present case was to make the symptoms severe and the signs obvious, so that the need for operation was at once apparent.

R. E. B. TAGART, M.Ch., F.R.C.S.,
 Senior Surgical Registrar,
 Addenbrooke's Hospital, Cambridge.

REFERENCES

- Allen, A. W., and Welch, C. E. (1947). In *Surgical Treatment of the Abdomen*, edited by F. W. Bancroft and P. A. Wade. Philadelphia.
 Clark, C. W. (1944). *Brit. J. Surg.*, 31, 301.
 Evans, E. I., and Bigger, I. A. (1947). *J. Amer. med. Ass.*, 133, 513.
 Harkins, H. N. (1933). *Ann. Surg.*, 98, 1070.
 Kerr, W. G., and Kirkaldy-Willis, W. H. (1946). *British Medical Journal*, 1, 799.