anaemias²⁹ its results may be brilliant, as the following case will show:

D. R., female, aged 7, was quite healthy till ten days before admission, when she had what was apparently an acute tonsillitis with swelling of the cervical lymph glands. Her parents had noticed her to be very pale for three days. On admission she was very collapsed, and had a waxy pallor. The blood count showed red corpuscles 680,000 per c.mm., white corpuscles 33,000 per c.mm., polymorphs 75 per cent. A transfusion of 500 c.cm. was given. She made a steady recovery, was discharged fit three months later, and is now perfectly well, two years after the onset of the disease.

I am not sure that chronic infections do not provide the largest field for the use of transfusion. In low-grade septicaemias, empyemas, and similar conditions it may often make the difference between life and death, especially in children. However, it must be admitted that it is impossible to give absolute proof that the improvement seen after it would not have occurred without it.

In acute infections the general opinion seems against transfusion. I have had no experience of its action, and should welcome any information about it.

It often does very definite good in athrepsia and malnutrition of infants, as in the case given below.

G. G., male, aged 3 weeks. Admitted suffering from pyloric stenosis. Weight 5 lb., "big baby at birth," passing blood per rectum, and looking absolutely moribund. Transfusion 50 c.cm., Rammstedt's operation under local anaesthesia twelve hours later; uninterrupted recovery.

Transfusion seems the logical treatment for coal-gas poisoning, to replace the haemoglobin that has been put out of action by the CO, and in burns it helps both in the early shock and in the later toxæmia. Nephritis is usually given as a contraindication to it, but I have had two extremely interesting cases in which it seemed to avert certain death from uræmia. I give the histories without attempting to draw definite conclusions from them.

B. W., male, aged 10. September 6th: Admission, suffering from acute haemorrhagic nephritis. Blood and casts in urine, with large amount of albumin; blood urea 160 mg. to 100 c.cm. October 6th: Going downhill in spite of treatment; urinary output diminishing; vomiting; blood urea 250; transfusion 500 c.cm. October 10th: Much improved; passing more urine, with less blood and albumin in it; blood urea 140. October 31st: Blood urea 60. November 5th: Septic tonsils removed, as being probably the cause of the nephritis; "flare-up" of the nephritis, with blood urea rising to 120. January 1st, 1929: Sent out much improved; blood urea 40.

E. R., female, aged 7. May 2nd, 1927: Admission, suffering from acute haemorrhagic nephritis. Improved under treatment and was sent to country branch of hospital. August 9th: readmitted in uræmic coma; unconscious, dusky, and apparently dying; blood urea 122 mg. to 100 c.cm. Blood was withdrawn to the amount of 200 c.cm., and a transfusion of 500 c.cm. was performed. The effect was almost biblical, as she recovered consciousness on the operating table, and returned to the ward talking cheerfully. August 30th: blood urea 56. The patient was sent out much improved.

I have been able to find very little work on this subject,²⁸ and of course the action of the transfusion was not a simple dilution.

My thanks are due to the honorary staff of the Hospital for Sick Children, Great Ormond Street, for their encouragement in the work on which this paper is founded, and for permission to publish the cases described; and also to Dr. Aaron Signy for his advice and aid in the very important department of blood matching.

The instruments described have been made by Messrs. Down Bros., Ltd.

REFERENCES

- ¹ Unger, L. S.: *Journ. Amer. Med. Assoc.*, 1915, lxiv, 582.
- ² Blain, A. W.: *Annals of Surgery*, 1929, lxxxix, 917.
- ³ Guthrie, C. G., and Huck, J. G.: *Bull. Johns Hopkins Hosp.*, 1923, xxxiv, 37.
- ⁴ Sidbury, J. B.: *Journ. Amer. Med. Assoc.*, 1927, lxxxix, 855.
- ⁵ Doan, C. A.: *Ibid.*, 1926, lxxxvi, 1593.
- ⁶ Boughton, T. H.: *Journ. Lab. and Clin. Med.*, 1920, v, 597.
- ⁷ Cherry, T. H., and Langrock, E. G.: *Journ. Amer. Med. Assoc.*, 1916, lxvi, 626.
- ⁸ Cruchet, R.: *Journ. de physiol. et de path. gén.*, 1926, xxiii, 80.
- ⁹ Brines, O. A.: *Arch. of Surg.*, 1926, xii, 124.
- ¹⁰ Carlton, H.: *Lancet*, 1926, ii, 850.
- ¹¹ Lindeman, E.: *Amer. Journ. Dis. Child.*, 1913, vi, 38.
- ¹² Lindsay, J. W., Rice, E. C., and Selinger, M.A.: *Journ. Amer. Med. Assoc.*, 1929, xcii, 291.
- ¹³ Shera, G.: *British Medical Journal*, 1930, i, 903.
- ¹⁴ Brem, W. V., Zeiler, A. H., and Hammack, R. W.: *Amer. Journ. Med. Sci.*, 1928, clxxv, 96.
- ¹⁵ Busman, G. J.: *Journ. Lab. and Clin. Med.*, 1920, v, 693.
- ¹⁶ Seibert, F. B.: *Amer. Journ. Physiol.*, 1925, lxxi, 621.
- ¹⁷ Unger, G. J.: *Journ. Amer. Med. Assoc.*, 1921, lxxi, 207.
- ¹⁸ Lewisohn, R.: *Boston Med. and Surg. Journ.*, 1924, cxc, 733.
- ¹⁹ Colebrook, L., and Storer, E. G.: *Lancet*, 1923, ii, 1341.
- ²⁰ Mellon, R. R., Hastings, W. S., and Casey, G. V.: *Journ. Amer. Med. Assoc.*, 1922, lxxix, 1678.
- ²¹ Cheer, S. N.: *Journ. of Immunol.*, 1930, xviii, 187.
- ²² Floyd, M. L.: *Amer. Journ. Dis. Child.*, 1929, xxxvii, 1007.
- ²³ McKhann, C. F.: *Boston Med. and Surg. Journ.*, 1926, cxcv, 1241.
- ²⁴ Rosenthal, G.: *Bull. et Mém. Soc. Méd. de Paris*, 1929, xvi, 381.
- ²⁵ Aubertin, C., and Fleury, J.: *Bull. et Mém. Soc. Méd. des Hôp. de Paris*, 1930, liv, 69.
- ²⁶ Macintosh, R. R.: *Lancet*, 1927, ii, 22.
- ²⁷ Robertson, B.: *Toronto Arch. of Surg.*, 1924, ix, 1.
- ²⁸ Martin: *Siglo Méd.*, 1924, lxxiii, 615.
- ²⁹ Lazarus, S. D.: *Amer. Journ. Dis. Child.*, 1930, xl, 1063.

MECKEL'S DIVERTICULUM AS THE CAUSE OF ACUTE SYMPTOMS

BY

A. HARVARD BAKER, M.B., CH.B.

RESIDENT SURGICAL OFFICER, STOCKPORT INFIRMARY

During a series of 105 laparotomies, performed for various conditions during the three months June, July, and August, 1930, at the Stockport Infirmary, four cases were operated on by me which showed various forms of Meckel's diverticulum. In two of these, acute symptoms were caused, and in view of the comparative rarity of such cases some details may be of interest.

CASE I

A labourer, aged 52, was admitted at 11.55 p.m., on June 9th, with severe gnawing pain around the umbilicus. The onset had been sudden at 4 p.m. on the day of admission, but the man had remained at work for one and a half hours; since leaving it he had vomited three times. The bowels had moved at midday; they were usually regular. There was no pain in the back or shoulders, no urinary trouble, and no history of previous indigestion.

The patient was collapsed and covered with cold perspiration, his temperature being 97° F., and his pulse 80. The tongue was coated and dry. The abdomen was tender in the right hypochondrium and just below the umbilicus. Both recti were rigid. A rectal examination was negative.

An operation was performed at 1 a.m. on June 10th, a right rectus slide incision being made. Much free sanious fluid escaped, and coils of strangulated gut presented. On close inspection a Meckel's diverticulum, arising from the antemesenteric border of the gut, was found to be strangulated through a hole in the mesentery of another loop of gut. The portion of bowel bearing the diverticulum was tightly constricting a large loop of bowel, compressing its mesentery. This loop was drawn so tight that the strangulating bowel was only of the diameter of a pencil. The diverticulum was excised between clamps, but even then it was found impossible to reduce the strangulation until the constricting loop of bowel had been similarly divided. After reducing it the involved bowel was still blackened, and there was no sign of pulsation in its mesentery, into which considerable haemorrhagic effusion had taken place. Resection of three feet of intestine was therefore performed, with end-to-end anastomosis, and the abdomen was closed

with the introduction of a sheet-rubber drain of the abdominal wall. The diverticulum was about 3 inches in length, and had a clear opening of about 1/2 inch diameter into the intestinal lumen. It presented itself as a blackish oval cyst on the upper leaf of the mesentery. Its contents consisted of blood-stained fluid.

There was considerable vomiting for the first few days. Continuous rectal saline injections and two doses of anti-gas gangrene serum were given. The patient improved, and on June 16th was very comfortable; but two days later the wound broke down, with discharge of intestinal contents. Acute right parotitis developed on June 20th, and the patient went rapidly downhill, but lingered on till June 30th, when he died.

CASE II

A man, aged 30, was admitted at 11.30 p.m. on June 14th with severe pain in the pit of the stomach, which had come on suddenly at 8 a.m. just as he got out of bed; it was very severe and doubled him up, but it was intermittent. There was no vomiting, but some nausea, and no definite history of indigestion; there had been vague pains for a few weeks, which had been relieved by walking about.

His temperature was 100°, and the pulse 92. The tongue was slightly furred, and the abdomen rigid, tenderness being most marked in the epigastrium and the right and left hypochondrium.

An operation was performed on June 15th on the suspicion of perforated duodenal ulcer, the right rectus slide incision being employed. Clear fluid was present, and distended coils of small intestine presented in the wound. A Meckel's diverticulum 2½ inches in length and 1/2 inch in diameter was found, arising just below the antemesenteric border. The distal end was conical, and from the tip arose a fibrous cord about 3 inches long, the other end of which was attached near the root of the mesentery on the lower leaf. Over this cord a loop of bowel was kinked, the proximal part being slightly congested. The cord was divided between forceps, and the diverticulum was excised, the stump being invaginated by a purse-string suture since there was no tendency to stricture of the intestine. Appendectomy was performed, and the wound was sutured in layers. Convalescence was uneventful, and he was discharged on June 29th.

CASE III

A man, aged 60, was admitted on August 14th at 12.15 a.m. There had been a sudden onset of severe abdominal pain the previous evening; it was situated at first low down on the left side, but spread over the abdomen. No vomiting had occurred, and the bowels had been opened the previous morning; there was no history of the passage of blood or mucus, nor of indigestion.

The patient was collapsed and sweating; the temperature was 98°, and the pulse 80. The tongue was clean. The abdomen was very rigid, especially in the upper half. There was no loss of the liver dullness.

The abdomen was opened, and a perforated gastric ulcer was discovered in the pyloric region of the stomach. There was some extravasation of stomach contents. The ulcer was sutured, and covered with a flap of omentum. Before closing the abdomen, a coil of intestine was noticed, bearing a Meckel's diverticulum, which was of almost the same diameter as the bowel, and about 1½ inches long. Its lumen was uniform and the end was not pointed or conical.

CASE IV

A married woman, aged 25, was admitted at midnight on August 15th. Pain had commenced about the middle of the previous day in the sides and the lower abdomen, and was colicky in nature. She had vomited twice on the morning of admission, and this temporarily relieved the pain. The bowels had not opened for two or three days. Micturition was normal, and menstruation regular; there had been some pain, but no intermenstrual discharge. The last period had ended one week before admission. There had been an attack of similar pain eleven years previously; the patient was ill for about six weeks, being relieved by enemata.

On admission, general tenderness and rigidity of the lower abdomen was present, especially in the right iliac fossa.

The temperature was 100°, and the pulse 120; the tongue was moist and clean. Rectal examination revealed some faecal masses, and tenderness especially on the right side.

At operation, at 1 a.m. on August 16th, no causal lesion was found, but the caecum was large and ptosed, and the colon contained faecal masses. While examining the small intestine a relic of Meckel's diverticulum was found in its usual situation, about 2 feet proximal to the ileo-caecal valve. This showed as a bulbous dilatation of the intestine just distal to a slight constriction. There was, however, no distension above the constriction, and it was not thought that the lesion was causing any symptoms. Appendectomy, therefore, was performed, but no operative treatment of the rudimentary diverticulum was undertaken. The patient made a satisfactory recovery.

I am indebted to Mr. J. T. Bailey, under whom the cases were admitted, for admission to publish details of Cases II, III, and IV, and to Mr. A. W. Berry for permission to publish Case I.

GONOCOCCAL RHINITIS IN AN INFANT

BY

HAMILTON KIRKLAND, M.B., CH.M.

ASSISTANT AURAL SURGEON, SYDNEY AND ST. VINCENT'S HOSPITALS

AND

ROBERT V. STORER, M.R.C.S., L.R.C.P.

SYDNEY, AUSTRALIA

We are reporting this case, first, because a perusal of the literature on gonococcal infections and diseases of the nose revealed practically no mention of the condition, and, secondly, on account of the interesting parental history, which resulted in its diagnosis.

A man, aged 42, consulted Dr. T. Spiers Kirkland in February, 1929, about deafness. A toxic focus was considered as the cause, and in view of a history of gonorrhoea the patient was referred to one of us (R. V. S.) for investigation. Examination revealed two hard sensitive nodules in the prostate. The prostatic fluid contained numerous pus cells. No gonococci were detected. Urethrosopic examination showed numerous infected Littre's follicles. The Neisserian infection reaction of the blood serum was negative. The urine was clear and contained no albumin, sugar, pus, or threads. A diagnosis was made of chronic prostatitis and Littritis, and appropriate treatment was instituted.

The patient had had gonorrhoea two years before marriage, but believed himself cured. He had been married eleven years, and had three healthy children, aged 10½, 9, and 6½ years respectively. There had been extramarital intercourse on one occasion only, four years ago, and on the following day a drop of yellow discharge had appeared. This disappeared without treatment. On no other occasion since marriage had there been any indication of uncured disease. His wife had an intermittent vaginal discharge which attracted notice after her first confinement.

While the husband was undergoing treatment for his prostatic condition his wife was confined, and soon after birth the infant developed a "cold," which did not react to the usual domestic treatment. As a matter of interest the husband was given two glass slides and asked to bring in smears of the nasal discharge for examination. Stained by the pylonin method, one smear showed numerous pus cells, staphylococci, and typical gonococci. The other smear was submitted to a pathologist, who reported as follows: "Numerous pus cells, Gram-positive cocci, and groups of Gram-negative diplococci, often intracellular and morphologically indistinguishable from gonococci, were present."

The baby, then aged 1 month, was seen (H. K.) on April 24th, 1929, with a history of unilateral (right) nasal discharge since birth. According to the mother this was most profuse in the early morning, and was yellowish in colour and sometimes blood-stained. The baby experienced difficulty in breathing while feeding, and was seized with fits of coughing at intervals. No discharge or foreign body was visible in the anterior nares. Conjunctivae were normal. The nasal mucous membrane was only slightly inflamed. On the next day a swab was obtained covered with thick yellow pus. A smear