As little credit can be given so far to measures of *immunotherapy* as to those of chemotherapy. And this applies to all the permutations and combinations of antigen and immune serum that the mind of the immunologist—not a mind lacking in fertility and inventiveness—has so far devised. The latest of these is immunotransfusion, which, though it is claimed that this method raises the bactericidal power of the blood, has not so far been more successful than other methods. A method of treatment which raises the bactericidal power of the blood as tested outside the body gives us no guarantee that it will do this inside the body; or, if it does, that the rise in bactericidal power will be sufficient, within the limits of the method, to turn the scale against the infecting agent and in favour of the patient. These things would be very puzzling did we not know of stranger facts—the fact, for example, that, apart from any immunotherapy whatever, the blood in many cases of chronic septic endocarditis is extremely rich in certain antibodies specific to the micro-organism isolated from the patient's circulation. And yet such patients may, all the time, be losing ground slowly but surely.

In opening a discussion upon chronic septic endocarditis at Cambridge in 1920, when speaking of curative treatment, I raised the point as to whether we ought not to deal with these patients on much the same lines as we follow in cases of chronic tuberculosis, bearing in mind, of course, the difference in the organs affected. I have of late years concentrated more and more upon non-specific measures, as for a disease of "low resistance." I treat as many cases as possible in the open air, with sunlight, natural and artificial. I supplement this by a long series of intravenous and intramuscular injections of sodium cacodylate. Sometimes I have found, as others have, that simple transfusions of blood are of considerable help. These are the only measures I yet know of that seem to give the patients the best chance of overcoming their usually intractable infection.

It remains for me to thank you, Sir, and the Fellows, for your patience in giving me your attention during the delivery of these lectures.

CHRONIC PYLORIC OR DUODENAL ULCER: POSTERIOR GASTRO-JEJUNOSTOMY WITH JEJUNO- JEJUNOSTOMY.

BY

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THE operation of a no-loop posterior gastro-jejunostomy has had a long trial, and, although the ulcer heals, the after-history of these patients, as regards well-being and comfort, is in a very large number of cases unsatisfactory.

A-C=3½ in.; A-A=3 in.;
B-B=2½ in.; C-C=1½ in.;
P-V=3½ in.

The new pylorus is at A,A, and the dotted line along the duodenum from Vater's ampulla (V) to the jejunal opening at C,C' shows the course of the secretions from liver and pancreas to join the food stream issuing from the stomach at A,A. The two tubes of jejunum, marked by

THE MAKING OF A NEW PYLORUS.

A modification of this operation¹ is jejun-jejunostomy, done at the same time as the posterior gastro-jejunostomy so as to ensure the making of a new pylorus, by which the *status quo ante* as regards the physiology of the parts concerned is brought about.

The illustration represents a horizontal section of stomach and bowel after the operation is completed; for clearness' sake the gastro-colic oval omental attachment is not indicated.

arrows, function at the first part of the duodenum. C' is at a point 3½ in. below the new pylorus (A,A), which is the precise distance that the normal Vater's opening (V) is situated from the normal pylorus (P). A 10-inch loop of proximal jejunum, brought to the surface, gives enough bowel to work with, and no kinking ensues. The extra time required for the second anastomosis is only some fifteen minutes.

In effect, the whole physiological plan of the pylorus and the duodenal exit of the digestive fluids is simply removed some inches to the left. The gastric anastomosis is 3 inches and the jejuno-jejunal 1½ inches long. The patients enjoy very good health afterwards, with no unpleasant after-effects.

I have just learnt that one of the surgeons of the Mayo Clinic has begun to do this operation and intends to report his results.

REFERENCE.

¹ *Lancet*, January 31st, 1920; *Practitioner*, June, 1920; *Epitome*, *New York Medical Journal*, 1920.

GANGRENE IN AN INFANT SEVEN DAYS OLD: RECOVERY.*

BY

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A PRIMIPARA, aged 33, who had had no miscarriages and been married two years, was, on January 30th, 1925, confined naturally, after an easy labour of six hours, of a female child. On the morning of February 5th the child's right leg was found blue from the knee downwards. The cord had separated the day before, and the umbilicus was a perfectly clean scar without redness; there was no rise of temperature, and the heart appeared normal. There seemed little pain, only a slight whimpering when the limb was handled. The leg was kept warm in cotton-wool, and the blueness gradually decreased downwards, until in about ten days there was a line of demarcation straight across the dorsum of the foot at the base of the toes, but on the sole of the foot it extended in a triangle nearly to the point of the heel. This gangrenous area was dry. It was decided to leave events to Nature, but, with the experience of gangrene in the old, the parents were told to expect a weary waiting of months for the separation of the slough. The mother was unable to nurse the child, but on undiluted milk it thrived apace, so that in each week from the beginning there was a gain in weight. On March 18th I was amazed to hear that the toes had separated, the factor of the child's growth away from the dead part never having entered my head. Within three weeks afterwards, very little more than two months from the onset, the foot was completely healed, the triangle on the sole of the foot having been only skin.

An attempt to get a photograph in the gangrenous stage failed from movement, an indoors time exposure being necessary. But the accompanying illustration in the healed state, when the child was 7 months old, shows the want of toes and the ridge on the sole of the foot. The separated toes have been placed in the Pathological Museum, Cambridge.

It is almost certain that the gangrene was due to an embolus caught at the bifurcation of the anterior and posterior tibial arteries, and that the circulation was re-established except in the toes and sole of the foot.

As to the origin of this embolus there must be some doubt; it is possible that it came from the umbilical veins, by way of the ductus venosus, inferior vena cava, and the right auricle, thence either through a patent foramen ovale, or into the pulmonary artery and by the ductus arteriosus

* A paper read before the Cambridge Medical Society, October, 1925.

to the aorta, and so to any artery of the body. Osler has recorded a case of hemiplegia *in utero*; the mother had typhoid fever, and the embolus was derived from the placenta and would have taken some such course. While this route in my case is theoretically possible, from a practical point of view I do not think it can hold, otherwise emboli in various parts of the infant's anatomy would be much more common than they are. It seems to me that such a rare occurrence is likely to be caused by some abnormality, and I would suggest an abnormal umbilical artery on the right as the most probable. The normal hypogastric artery arising from the internal iliac gives off several branches before it ends as the umbilical. In the separation of the cord, should that artery become detached from its moorings, a clot against the blood stream could not get beyond one or two branches. But if the umbilical was a separate one, derived from the common or external iliac, the giving way of this might easily shoot out the clot into the stream to the leg, and, being without branches to moor it, the elastic action would be the stronger.

With the help of Neale's *Digest* and the *Index Medicus* I have hunted up the cases of infantile gangrene in English. The great majority are in older children, and occur as part of other diseases, notably sepsis or syphilitic arteritis; or in Raynaud's disease, where the areas are multiple and smaller. One case only have I been able to find that at all approaches this case.¹ In that the child when first seen was 2 weeks old and died the next day. We are not told the date of the first appearance, but it was supposed to have begun below the knee. At the examination the left leg and thigh were affected. *Post-mortem* examination confined to the femoral artery showed no signs of embolus of that vessel.

I am tempted to add one case which, though inappropriate, is worth resurrection.² The doctor was called to see a woman, aged 40, who had three children alive; these births had been followed by three miscarriages, and being now pregnant she was anxious to have a live child, as she thought her health would be improved by nursing. She was obese, but the doctor felt sure he heard a faint foetal heart, so that he was able to reassure the parents. On making a vaginal examination he was surprised to find already a breech presenting, and still more surprised to bring down two gangrenous legs, the integument coming away in his hand. Meantime the woman had one pain, and a baby which cried lustily and lived for twenty-four hours was shot into the world! The address of the recorder is given as New York.

REFERENCES.

¹ Reed: BRITISH MEDICAL JOURNAL, 1881, i, p. 539. ² *Lancet*, 1888, ii, p. 1173.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

STRIDOR ACCOMPANYING MEASLES.

DURING epidemics of measles in recent years few serious cases have occurred, but last winter the type was much more severe. Stridor appears to be one of the more rare accompaniments, for the following case has been the only one seen in the last two or three hundred cases. Ker, in his *Manual of Fevers*, mentions the possibility of measles being confused with diphtheria when laryngeal symptoms occur, and Still, in his *Common Disorders and Diseases of Childhood*, quotes a similar perplexity to that which presented itself in the following case.

I first saw X, a boy aged 5, at 5.30 p.m. on March 4th. Ten days previously he had been in contact with a child who subsequently developed a typical measles rash. His eyes were heavy and he looked "measly." His temperature was 101°, pulse 100. There was no abnormality in the throat or chest, no Koplik's spots could be seen, nor was any rash present.

The following day he was much the same, but when seen on March 6th at 11 a.m. the temperature was 102°, pulse 120, respirations 40, and he had developed a croupy cough without pulmonary signs. The tonsils were now considerably enlarged, but no exudation or membrane could be seen. In addition to this he had marked stridor, his cheeks were slightly cyanosed, and although he seemed bright in speech he showed no inclination to sit up. At 6 p.m. the stridor seemed more marked and his pulse and temperature were unchanged. As by 10 p.m. there was still no

sign of a rash or confirmatory evidence of measles in the shape of Koplik's spots, 4,000 units of diphtheria antitoxin was injected subcutaneously, hot applications to the throat were given, and a steam kettle ordered.

On the following day at 10 a.m. his temperature was 103.4°, pulse 128; the stridor was, if anything, slightly less marked, and a few macular spots were visible on the face and behind the ears. By 2 p.m. the rash on the face was quite definite and his temperature had fallen to 102.5°, whilst by 9.30 p.m. the temperature had declined another degree and the case was quite obviously one of morbilli.

Subsequent progress was uneventful. Although the breathing continued noisy for some days, the temperature fell to normal on March 9th, and in spite of the severity of the attack he was able to get up ten days from the first onset of his symptoms.

On examination for Klebs-Loeffler bacilli a swab of the throat proved to be negative.

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NOVASUROL AND HYPERTONIC SALINE IN CHRONIC OEDEMA.

REFERENCE has been made in these columns to the diuretic properties of novasurol and its beneficial dehydrating effects on oedema of a generalized type. There are certain advanced cardiac cases, with possibly a recurrent attack of "water-logging," where the effect of the drug, given alone, may not be so gratifying—cases where digitalis has done its utmost in steadying rhythm and increased output—and yet the oedema of arms, legs, and cavities persists.

It seems likely that the prolonged malnutrition of the capillary walls makes it difficult for the tissue spaces to yield up their excess of fluid into the "active" circulation under the osmotic conditions prevailing. In such instances I have found that the addition of 20 to 30 c.cm. of 2 per cent. saline to each dose of novasurol (doses gradually increasing from 0.5 to 2 c.cm., given intravenously at intervals of four or five days) produces a markedly increased diuresis. By such means the output of urine—controlled by injections of the drug alone—has been increased by as much as 20 to 30 oz. in the twenty-four hours following injection.

It seems that the hydraemia thus induced is of sufficient duration to enable the kidneys to excrete (under the influence of novasurol) the additional urine before osmotic equilibrium is reinstated in the tissue-capillary areas. Moreover, the common complication of diarrhoea has been absent—a fact which recalls Sir Leonard Rogers's treatment of Asiatic cholera.

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POISONING BY THE PRODUCTS OF COMBUSTION OF TOBACCO APPLIED TO THE SKIN.

LATE one evening we paid a visit, urgently requested, to a small girl, whom we found lying in bed asleep; her skin was pallid, and although it was a hot night in June she seemed very cold; the pulse was very weak, and the breathing infrequent and sighing. When aroused the eyes turned upwards, and she was slightly delirious, with gentle retching.

The illness had commenced an hour before with severe vomiting; it followed a vigorous rubbing of her trunk and limbs with a mixture of writing ink and scrapings from an old tobacco pipe (dottle). This her mother had done to cure a very diffuse attack of "ringworms."

Having given the child a quick scrub with hot water and soap, we had the pleasure of seeing a very rapid improvement in vasomotor tone; she would fall asleep as if from intense weariness, but could be progressively more easily aroused. The next day she seemed well, and has remained so.

No doubt most doctors could creditably pass an examination on the physiological action of tobacco, but many, perhaps, will scarcely have realized the great potency of these products even when merely inuncted. Everyone has heard that a dog can be killed by a drop of nicotine placed on the conjunctiva; and one has felt oneself sinking in the swamps of Acheron after embarking upon the adventure of a first smoke, and that of "black shag." Moreover, interest attaches to the phenomenon of absorption of drugs by the skin. Wherefore we feel that this case should be recorded, as it may be appreciated by