as in the case reported by Olbert,⁴ and referred to by Spencer. Lawford and Treacher Collins⁵ in 1891 discussed the subject of melanotic growths of the uveal tract, with notes of 103 cases. They were able to trace 79 of the patients, of whom 40 were dead; in 2 of these the interval between the operation and death was seven and eight years respectively. Of the 39 patients who were still alive, one had been operated on eighteen years and another sixteen years previously, while the intervals in the other cases ranged from seven months to nine and a half years. In spite of their analysis of the fatal cases, they ventured to say with regard to 20 patients who were still alive and well three or more years after the removal of the primary growth, that these cases might be considered with great probability, but not with certainty, as permanent cures. It is, however, obvious from a study of their own fatal cases, from the case we are reporting, and from numerous other instances, that no such probability can be assumed. Melanotic cancer of the eyeball differs from every other manifestation of cancer in the length of time for which metastasis may be delayed, and the prolonged intervals have led to the suggestion that it is not a true metastasis, but an origin *de novo*.

It is remarkable that these growths spread with great rapidity and lead to a fatal termination very quickly after a recurrence shows itself. This suggests that the new manifestation is due rather to a breakdown in the resistance of the individual than to a sudden activity of the disease; for actually or potentially the disease must have been present the whole time, and has presumably been kept in bounds by the resistance of the patient. If we are to make further progress in the treatment of cancer it would seem that, in addition to the eradication of its local manifestations, we must adopt some means of increasing the resistance of the individual to the disease. In no part of the body would it seem more feasible to remove the whole of the primary tumour than in cases of cancer of the eyeball, and yet we are faced with these delayed metastases.

It is early days yet to know what may be expected from the experiments on the production of immunity to cancer, carried out by Russ⁶ and others,⁷ in the cancer research laboratories of the Middlesex Hospital, but this would seem one of the most hopeful lines of research yet opened up. Certain it is that a definite, and perhaps permanent, immunity to grafted cancer has been conferred on a considerable number of rats by inoculation with irradiated tumour tissue.

REFERENCES.

- ¹ W. G. Spencer: BRITISH MEDICAL JOURNAL, November 17th, 1923, p. 907. ² A. E. Garrod, *St. Bartholemew's Hosp. Reports*, 1902, xxxviii, 25. ³ F. D. Cairns: *Brit. Journ. Surg.*, October, 1922, vol. x, No. 38, p. 290. ⁴ S. Olbert: *Cent. f. Chir.*, 1906, xxxiii, 599. ⁵ J. B. Lawford and E. Treacher Collins: *Royal London Ophthal. Hosp. Reports*, 1891, xiii, 104. ⁶ Chambers, Scott, and Russ: *Lancet*, 1922, i, 212. ⁷ Kellock, Chambers, and Russ: *Ibid.*, 1922, i, 217.

A VERY EARLY CASE OF GUMMA OF THE ILEUM.

BY

G. A. UPCOTT-GILL, AND H. B. JONES, M.R.C.S.,
F.R.C.S. EDIN., L.R.C.P. LOND.,
MEDICAL SUPERINTENDENT, RESIDENT SURGICAL OFFICER,
QUEEN'S HOSPITAL, FROGNAL, SIDCUP.

THE case described was considered worthy of being placed on record as an example of very early gumma of the ileum and also a pathological rarity. It will be recalled that in the whole intestinal tract the rectum is the commonest site for specific lesions, and that next in order come the lower part of the jejunum, the colon, the duodenum, and the stomach, in that order.¹

But there are so few records of gumma of the ileum that it is not unreasonable to conjecture that such lesions occur more frequently than is supposed, and may be subjected to surgical interference under a mistaken diagnosis.² The details of the case are as follows:

T. C. C., male, aged 45, married, in 1916, while serving with the Royal Engineers, complained of pain and swelling in the left foot and ankle, and subsequently both wrists and the right ankle, these being treated as rheumatism. Coincidentally with this condi-

tion he first complained of colicky pains in the abdomen associated with vomiting of pale green material streaked with blood, and stated that the vomiting relieved the pain. Later these symptoms increased in severity, with marked distension around the umbilicus and with offensive motions.

First Laparotomy.

On July 10th, 1916, at the 1st General War Hospital, Birmingham, an exploratory laparotomy was carried out. The medical case sheet had the following entry: "Divided adhesions between omentum and gall bladder. The small intestine two feet above the ileo-caecal valve was congested and thickened, and a few mesenteric glands were enlarged. Two feet of small intestine was removed and lateral anastomosis made between the proximal end of the ileum and transverse colon. Appendix was normal."

When discharged from hospital two months later, the patient's condition showed little improvement. In March, 1917, there was a severe attack of haematemesis and rectal haemorrhage of bright red colour. Since that date he stated that he had had attacks of abdominal pain and vomiting which lasted for two months, and from which he was then free for two months, with anorexia between the attacks.

He was admitted to the Queen's Hospital, Sidcup, on May 17th, 1923, complaining of abdominal pain, stabbing in nature, in the umbilical region and radiating through to the back, most marked on rising in the morning (no relation to food, though vomiting relieved the pain); vomiting, night and morning during the attacks—the vomit consists of a yellow material streaked with blood, and contains apparently undigested food; diarrhoea, constant during the attacks; haematemesis, with rectal haemorrhage; and pain in both wrists, hands, calves, and feet, of a stabbing nature.

Condition on Admission.—Pale, thin man; furred tongue; slight pyorrhoea alveolaris; pharynx red and congested. No focus of sepsis found elsewhere in the body. Has lost weight and looks rather cachectic. No evidence of syphilis on the penis or testicle; suspicious old cicatrices on the front of the right tibia. The patient denied having had syphilis or gonorrhoea, but stated that in 1899 he had a bubo in the groin incised and much pus exuded.

Abdominal examination showed a ventral hernia in the old laparotomy scar, through which marked peristalsis, associated with intestinal distension, was seen. Tenderness and rigidity over the epigastric and right hypochondriac regions. No tumour was felt, and no enlargement or displacement of the liver or the kidneys detected. All abdominal reflexes absent. On rectal examination no haemorrhoids, ulceration, enlarged prostate, thickened vesiculae seminales, or any other abnormality could be detected.

A report after a bismuth meal and examination by x rays stated that the stomach appeared normal in size and position. Incisura observed which did not disappear on massage, but no corresponding tender spot.

No parasites or amoebae were found in the faeces after repeated examinations; no visible blood. The benzidine reaction was positive. Examination of the urine showed nothing abnormal.

Central nervous system: Knee-jerks absent; ankle-jerks absent; plantar reflex normal. Eyes react sluggishly to light and accommodation. No areas of hyperaesthesia or anaesthesia noted; no Rombergism. Patient complains of rheumatic pains in the muscles of both calves. No loss of sense of position.

On examination of the blood nothing abnormal was detected except a marked eosinophilia (9 per cent.). The coagulation time was normal. The Wassermann test was positive.

Second Laparotomy.

A second exploratory laparotomy was carried out on July 10th, 1923. On opening the peritoneal cavity much dense fibrous tissue was encountered. No anastomosis of the bowel was discovered, but in the ileum, two feet from its termination, the following condition was found: a clean-cut injected segment of gut, 3 inches long, involving the whole circumference, the centre of which was thickened and boggy, with well defined edges, and apparently enlarged lymphatic glands, and dilated lacteal vessels at its mesenteric attachment. On attempting to invaginate the bowel with the examining finger, it was evident that the lumen was diminished. The mesentery elsewhere showed occasional small white plaques without induration, and the appendices epiploicae were pearly white in appearance. There was no free fluid in the peritoneal cavity. The gastro-intestinal tract elsewhere and the liver, spleen, kidneys, pancreas, and gall bladder all appeared normal.

In view of the condition found it was felt that further surgical interference was not warranted, and the abdomen was therefore closed in the usual way. The matting of the bowel and the omentum precluded a thorough search for further intestinal lesions, and it is possible that others existed, and have given rise to the long-drawn-out symptoms from which this patient has suffered. It may also be noted that usually old gummatous lesions of the gut are associated with hepatic infection and definite ascites, but neither of these conditions was present in this case.³

Resection was not carried out for fear of sloughing at the site of the anastomosis; as it was, the abdominal wound did not heal by first intention, but showed the characteristic non-union seen in specific wounds.

An intensive course of antisyphilitic treatment is now being carried out and the patient's condition is improving markedly; in fact he states that he never felt better in his life.

CONCLUSIONS.

Practically the only other conditions with which this might be confused are dysentery (amoebic or bacillary), tuberculosis, and new growth. The want of any history of dysentery, the repeated negative reports on faecal

examinations, and the isolated lesion found, appear to preclude dysentery. Again, the long-continued illness in association with so early an inflammatory lesion, and the absence of any infection elsewhere, negative tuberculosis.

The site of the lesion, duration of the disease, the soft boggy feeling of the affected segment of gut, coupled with the altered appearance of the mesentery and appendices epiploicae, are against new growth invasion; whereas the condition, and the smooth boggy enlargement of gut and its mesenteric attachment, with defined rolled edge, the scattered white plaques over the mesentery, and the pearly white appearance of the appendices epiploicae, are characteristic of intestinal syphilis.³

The rôle visceral syphilis plays may be very variable, giving rise to different groups of symptoms according to its site, virulence, and duration.⁴ That no actual intestinal obstruction had occurred in this case would suggest a very early phase.

REFERENCES.

- ¹ Sir D'Arcy Power and J. Keogh Murphy: *System of Syphilis*, iii, p. 40.
² C. F. Marshall and E. G. French: *Syphilis and Venereal Diseases*, 1921, p. 121-122. M. Letulle: *Bull. et Mém. Soc. Méd. Hôpitaux de Paris*, 1919, 3me sér., xliii, 39.
³ M. Letulle: La périlonite syphilitique, *Presse Méd.*, Paris, January, 1918, xxvi, 477-479.
⁴ M. Letulle: Société de Médecine de Paris, October, 1919; abstract, *Presse Méd.*, Paris, 1919, xxvii, 667.

LOCAL VACCINE TREATMENT OF PYORRHOEA ALVEOLARIS.

BY

H. FIELDEN BRIGGS, M.D., L.D.S.R.C.S.Eng.,
D.D.S.MICH.,
LONDON.

In the summer of 1923 I met in Paris Dr. Goldenberg, who is professor at the Institut Pasteur and director of the Institut National de Vaccinothérapie, and became interested in a new vaccine prepared by him for the treatment of pyorrhoea alveolaris. He uses a polyvalent vaccine, injected locally into the gums in small but gradually increasing doses, any necessary local treatment being carried out at the same time. By the courtesy of Dr. Goldenberg, and of M. de Libouton, of the Ecole Odontotechnique in Paris, I was able to see numerous patients undergoing this treatment.

Goldenberg founds his treatment on Besredka's views as to the local vaccination of tissues: "When it is required to vaccinate against a bacterial disease," he wrote, "it will not suffice merely to employ the corresponding attenuated virus. It is necessary that the vaccine shall operate along the route it will have to follow. This route should be that which the virus itself takes through the tissues during the process of infection."¹ Goldenberg therefore decided to inject the vaccine directly into the mucous membrane of the gums. The local conditions are such that it is necessary to use a concentrated vaccine, since large quantities of fluid cannot be introduced. The method used was that devised by Mauté, in which the bacterial bodies are emulsified in an excipient consisting of similar bacteria dissolved in soda. Goldenberg² started the preparation of the vaccine with bacteria freshly isolated from the gums of cases of alveolar pyorrhoea—namely, streptococci, staphylococci, pneumococci, *Micrococcus tetragenus*, *Micrococcus catarrhalis*, and the pneumobacillus of Friedländer. A mixture is made of equal proportions of these organisms; this is divided into three unequal parts. One-half of the original mixture is used as the excipient: the microbes are treated with a solution of caustic soda (10 per cent.) for twenty-four hours at 37° C., and the solution is then neutralized with hydrochloric acid. One-quarter of the original mixture is heated to between 60° and 70° C., thus killing the bacteria. The bacteria in the remaining portion of the original mixture are killed by treatment with formal. These last two portions are then emulsified in the excipient, and 0.5 per cent. carbolic acid is added. The resulting fluid is diluted so that each cubic centimetre of the vaccine thus prepared shall be the equivalent of 20,000 million bacteria. Goldenberg used one drop of the fluid, which is the equivalent of 0.05 c.cm., and contains approximately

1,000 million organisms, as the initial dose. Subsequent doses are increased by one drop each time until a maximum of six drops is reached. This method was tried with very promising results at the Institut Pasteur and Ecole Odontotechnique. To prevent the occurrence of reactions arising from protein substances present in the culture media, the organisms are thoroughly washed with normal saline solution before being treated in the way described. Although spirochaetes play an active part in the disease they are strictly anaerobic, and so can only multiply in the presence of the pyorrhoea alveolaris organisms, which, being aerobes, remove the free oxygen which would otherwise kill the spirochaetes. When the bacteria disappear in consequence of the vaccine treatment the spirochaetes are thus destroyed indirectly.

Technique of Treatment.

The following method of treatment, which I have adopted on the experience gained by treating several cases, is a modification of that described by Drs. Frison and de Libouton to the French Association for the Advancement of Science last year. The vaccine is in ampoules, obtainable from Dr. Goldenberg, at the Institut National de Vaccinothérapie, Rue Pages, Paris.

The injections are made by inserting the needle superficially into the reflection of the mucous membrane, above the apices of the bicuspid, or canines. Care should be taken that the needle does not penetrate too deeply; its orifice should be just covered by the mucous membrane; the most convenient syringe is one graduated to deliver drops of the dimension described (0.05 c.cm.), and must be carefully sterilized for use. A course of treatment consists of ten to twelve injections, given at intervals of not less than forty-eight hours nor greater than eight days. The only exception to this is that between the first and second injections a period of four days must elapse. The course will thus occupy about twenty-two days, the last five injections being of six drops each. The following table may be of assistance to those who adopt this treatment.

Day.	Drops.	Places.	Day.	Drops.	Places.
1st	1	1	12th	6	2 or 3
4th	2	1	14th	6	2 "
6th	3	2	16th	6	2 "
8th	4	2	18th	6	2 "
10th	5	2	20th	6	2 "

After the two-drops injection, I inject each dose in two or three places of the mucous membrane, thus obtaining the maximum activity whilst modifying the local reaction. No departure from these directions must be made; for instance, giving three drops after one drop would do harm and not good by bringing on a prolonged negative phase. If a reaction takes place all symptoms must disappear before the next dose is given, then the dose which caused the reaction should be repeated. Local treatment is absolutely essential, and must be carried on concurrently with the vaccine injections. At the second sitting the teeth should be thoroughly scaled, and this operation should be repeated at intervals during the course. Worthless and septic roots may be extracted after the third or fourth sitting. A mouth wash of salt (1 drachm to 8 ounces of water) should be prescribed, and also a simple tooth powder, such as precipitated, or camphorated, chalk. Soap must not be used.

Results of Treatment.

This treatment has met with very satisfactory results in the hands of several observers. M. de Libouton reported to the Congrès des Journées Médicales 41 cases treated by this method, in which cure resulted in 38. The cure has been maintained for more than two years. Frison and de Libouton, at the Congress of the French Association for the Advancement of Science (July 31st, 1923), stated that they had been successful in eliminating suppuration in 59 out of 62 cases, most of which were fully developed. Sir G. Valadier, Dr. Aguilar, and Dr. Spalding report equally favourable results, and my own cases bear out their experience. I notice that the first injection has a tonic action on the patient, and as the course—which generally consists of ten treatments—progresses the general health steadily improves. Foul odour and bad taste in the mouth disappear, the pus decreases, the gums become more firm, and the teeth tighten. I have noticed even that