the œsophagus, are within reach. 7. The danger of operative procedure is mainly due to the difficulty of alimentation. 8. The superficial parts in the œsophagotomy wound should be left freely open so as to heal by granulation.

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CASE OF TYPHLYTIS, WITH PERITYPHLYTIC INFLAMMATION AND ABSCESS; OPERATION; RECOVERY.

BY H. H. LLOYD PATCH, M.R.C.S. ENG.,
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THE patient was a boy eleven and a half years of age, who had always enjoyed good health until June 18th, 1893, when his mother, thinking that he was suffering from biliousness, gave him a dose of castor oil, which acted well. He appeared to be going on satisfactorily until the evening of the following day, when he complained of sudden severe pain in the right iliac region, and the medical adviser, Mr. Davies of Newton Abbot, found him to be suffering from an attack of perityphlytis; his temperature was 102° F., his pulse was full and bounding, his tongue was furred, there were great pain and tenderness with some resistance to pressure over the right iliac region, and he lay with his legs drawn up. He was ordered fifteen minims of opiate every four hours and hot fomentations containing tincture of opium over the abdomen were directed to be applied. No exciting cause of the attack could be discovered, but there was a marked history of phthisis, as his father's father, two brothers, and one sister died from that disease. From this date the boy gradually became weaker, and the resistance and tenderness over the right iliac region were increasing. He was given an enema on July 7th without result, and on the following day I saw him for the first time, as I had come down to act for Mr. Davies for a time; on examining the boy with him I thought the symptoms pointed to suppuration round the appendix. The tincture of opium was changed to solid opium (half a grain every six hours), and belladonna fomentations were used instead of the former ones; he was taking milk (a pint and a half) and champagne during the twenty-four hours. His abdomen was distended, and the tenderness was more acute over the region of the appendix, where the percussion note was dull; his tongue was glazed and dry. The temperature for the next three days varied from 101° to 102°. On July 12th the boy complained during the day of pain in the left leg, which was drawn up more than its fellow, and I found that the sigmoid flexure was somewhat distended, but as he was very sleepy when I saw him I decided to give him an injection the next day; however, at 3 A.M. that morning word was sent to me that he had two hours previously passed a very large quantity of hard, dryish, light-yellow fœces, which had caused him much pain in passing, and when I saw him at 9 A.M. his temperature was 104·8°. I immediately ordered twelve grains of sulphate of quinine; his evening temperature registered 102·2°. There was dulness on percussion over an area of about three inches in diameter, situated above the outer half of Poupart's ligament on the right side, where the pain was intense; the abdomen was less distended and much flatus was being passed. His tongue was very dry and cracked, sordes were on the lips, and he complained of intense thirst. His temperature from now to the date of operation averaged 102·2°. On July 14th I gave a copious enema of soap-and-water with olive oil, with very satisfactory results, large quantities of fœces, of the same character as before, though smaller in circumference, coming away. The pulse was 110 and very thready, small, and easily compressible. The region of greatest tenderness and resistance was circumscribed to an area about three inches in diameter, situated about two inches and a half below and two inches to the right of the umbilicus. However, the whole of the right side and lower part of the abdomen was rigid and painful. On July 18th the appearance of the boy seemed to point to suppuration in the right iliac region; his face was pinched and drawn and he complained of great headache, his pupils were widely dilated and sluggish in reacting, he complained of a "throbbing sensation" in the region of the appendix, his legs were well drawn up and abdominal respiration was

absent, and he was sweating very profusely. Considering the bowels had acted so well; that there was still much distension; that the area of greatest resistance and tenderness, situated over the region last mentioned, though somewhat nearer the umbilicus—viz., two inches below and to the right of it—appeared to fluctuate, though this was difficult to ascertain positively owing to the great pain and tenderness caused by the least manipulation; and that around the umbilicus there was a thin halo of redness: considering these facts, I came to the conclusion that an examination under chloroform would help the diagnosis of suppuration, and consequently I consulted Dr. Scott and Mr. Margrave (both of Newton Abbot). On the following day (July 19th), under chloroform, fluctuation was easily felt, and I proceeded to operate. An incision two inches long was made from above downwards over the fluctuating spot and as much to the right of it as possible in order to escape the sheath of the rectus abdominis. Directly on passing through the abdominal wall the abscess cavity was entered, from which came twelve ounces and a half of most offensive yellowish-green thick pus. I enlarged the orifice into the abscess cavity by Hilton's method and subsequently by scissors. After most of the pus had been removed, on introducing my finger into the cavity, I found that the appendix was uniformly swollen and soft; it was about half an inch in diameter. No foreign body being detected I decided to leave it alone. A few adhesions were broken down, but these were of no consequence. Copious irrigation with a 1 in 40 carbolic solution and a 1 in 2000 perchloride of mercury solution was used and a double drainage-tube was inserted. Wood-wool tissue and cyanide gauze dressings were used. A quarter of a grain of morphia was given hypodermically after the operation. The patient was slightly sick in the evening. From this date he began to improve rapidly. The temperature regained the normal three days after the operation, and his pulse became regular about the same time. On discontinuing the opium on July 22nd his tongue commenced to improve, and the sordes disappeared about a week after the operation. I ordered two grains of sulphate of quinine three times a day. His bowels were regulated by enemata for the first two weeks, and by small doses of castor oil afterwards; the discharge was always quite sweet and free after the third day. The abscess cavity healed well, and the drainage-tube was left out three weeks after the operation; the wound closed in about four weeks and a half. He was allowed to be up on Aug. 12th, and his diet consisted of milk puddings, beef-tea, and food of a light description. During his illness the boy suffered from inflamed spots over the bony prominences of his back, which were greatly benefited by painting with a 5 per cent. solution of silver nitrate.

Remarks.—The case is interesting in many ways. 1. What was the cause of the attack? Was it tuberculous or was it an ordinary simple attack of a very acute form? I am inclined to take the latter view, as the onset and course of events were too rapid and the healing process too straightforward for a tuberculous lesion. 2. The rapid formation of the abscess. 3. The absence of any œdema or redness of the skin over the abscess cavity. 4. The incomplete obstruction. This, I think, was in part most probably due to the pressure of the abscess on the intestine in the right iliac region, as within four days after the operation the bowels acted well. 5. The absence of vomiting throughout the illness, except just after the operation. 6. The absence of rigors at any period.

Ramsgate.

A CASE OF TRIGEMINAL NEURALGIA OF MALARIAL ORIGIN.

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ON Dec. 23rd, 1883, I was consulted by a gentleman, a lieutenant in the Royal Navy, who was suffering from a severe attack of neuralgia affecting the left orbit, frontal region, and surrounding area of the face. The pain most complained of was that situated at the back of the eyeball. There were lacrymation, photophobia, and some slight iritis. On making inquiries into his previous history he volunteered the following information as regarded his previous health. He had always enjoyed very good health—the only illness that he had suffered from being acute rheumatism some years ago—until he joined the East Coast of Africa station. His duties whilst

there were chiefly in connexion with the navigation of the ship along the coast and piloting up the rivers when not stationed either at Pemba or Mombassa, both places having an evil reputation for the malarial nature of the climate. Whilst there he suffered from periodical attacks of severe neuralgia confined to the area described above, though much more severe, especially as regarded the photophobia and iritis. The attacks recurred regularly every fortnight, though occasionally three weeks would intervene, but this was rare. The attacks were always worst when he was stationed at Pemba. He stated that ague was not very prevalent in his ship, though three or four of the crew had been down with it. His attacks would last for twenty-four or forty-eight hours, rendering him totally unfit for duty, and to completely recover it always took one or two days more after the attack had ceased, as they left him so weak. Previously to joining the East Coast Squadron he had never been subject to any form of neuralgia. He was treated with antipyrin and other various nerve drugs, but derived no benefit. When the ship arrived at the headquarters of the squadron at Simon's Town he was informed that he was suffering from intractable neuralgia of the eye and was advised to come home to consult an ophthalmic surgeon on account of his eye. During the intervals of the neuralgia the patient was in no way troubled with his vision, the eye being quite equal to all tests applied, and no disease was to be made out by ophthalmoscopic examination. After leaving Simon's Town and joining the mail boat he was quite free from neuralgia until the morning of Dec. 23rd, when he consulted me. After thinking over his case and recollecting that malarial fever sometimes manifested itself in this manner, I treated him by giving him a large dose (15 grs.) of sulphate of quinine, with eight minims of liquor arsenicalis. This treatment gave him speedy relief, and he had no further trouble while on the ship.

My reasons for coming to the conclusion that this was a case of malarial fever are briefly stated as follows: (1) the periodicity of the attacks; (2) their regular recurrence; (3) the amount of prostration after the attack; and (4) that he was free from it when not stationed in a malarial district. The fact of his having had an attack after having left the malarial districts for three weeks goes in no way against the diagnosis, as it is a common occurrence for persons the subjects of ague to have an attack, even when they have been quite free from it for some considerable period, on becoming subject to a sudden change. This is especially the case where the change is from a warm climate into sudden cold, such as was experienced by the patient mentioned above, the difference in temperature between Dec. 20th and 22nd having been for him a fall of 20° F. Cold has often brought on attacks of ague in people travelling between South Africa and England unless averted by prophylactic treatment.

That malarial fever often exhibits itself in this form can easily be demonstrated in South Africa, where it is exceedingly common to find people suffering from orbital neuralgia who have been in the interior, where malaria is very prevalent, and who are only relieved by anti-malarial treatment. Their neuralgia is periodic and sometimes preceded by a definite cold stage. On looking over the literature of the subject I find that both my former teachers, Dr. Bristowe and Dr. Frederick Taylor of Guy's Hospital describe cases of so-called brow ague as belonging to the numerous anomalous manifestations of malarial fever. Their malarious nature may be recognised partly by their periodic character, by their occasional supervention on a more or less distinct cold stage, and by their occurrence in a malarious district, and partly by the fact that the patient has already been the subject of ague.

The scarcity of such cases in England has led me to think that the case above described might be of general interest and worthy of publication.

Camberwell-grove, S.E.

DEATH UNDER NITROUS OXIDE GAS.¹

By JOHN ADAMS, F.R.C.S. ENG.

THE account of the death under nitrous oxide gas, noticed in THE LANCET of March 3rd and gathered from newspaper reports, gives an imperfect description of the case. I was therefore pleased to accept an invitation from the secre-

tary of the Society of Anæsthetists to give a more detailed account before its members who have made anæsthetics a special study, with the hope that some further light might be thrown on the unusual result, from what proves in the vast majority of cases a perfectly safe anæsthetic. The patient came to the dentist on Monday, Feb. 21st, about 1.30 P.M., and had an hour previously partaken of a light lunch. After waiting half an hour, he was shown into the operating room on the first floor. He seemed in good health and wished to have a second right upper molar extracted whilst under gas. There was nothing tight about his neck, nor was there anything in his appearance to lead one to think he was not a fit subject for the anæsthetic. He had a small, receding jaw and a short, thick neck, but no abnormal swelling of any kind which prevented his closing his mouth, as reported in THE LANCET of the above date. An ordinary prop, attached to a strong fishing-line, was placed between the upper and lower central incisors. After taking three or four inspirations of nitrous oxide gas he took off the face-piece and said he felt nervous, but at his own request I proceeded to go on with the administration. His respiration was shallow but regular, and after taking about two thirds of the ordinary quantity of gas the tooth was extracted quickly and without any difficulty; the respirations at once became irregular and the patient became more cyanosed, his muscles rigid, and after three or four respirations he ceased to breathe, but no danger appeared imminent. Breathing not continuing, the prop was at once removed, the patient taken from the chair on to the floor, and artificial respiration commenced within thirty seconds after the extraction. The tongue was pulled forward. The heart was beating regularly but not strongly, the body remained rigid, and there was no inspiratory effort. About two minutes after the tooth was extracted, two or three expirations took place, showing there was no considerable obstruction in the larynx. Nitrate of amyl was applied to the nose and mouth; but as no inspirations took place it could not have affected the patient. A subcutaneous injection of ether was given over the præcordial region, as the action of the heart now became feeble. These measures failing, tracheotomy was performed within three minutes of the time the gas was discontinued to be administered; the position of the patient was awkward for the operation, and the extremely receding lower jaw, with a short, thick neck, made it somewhat difficult to perform, but as everything was at hand and ready assistance given I fortunately made an entrance through the upper rings of the trachea without loss of time. The tracheal wound was kept open, and on resuming artificial respiration a quantity of mucus (about an ounce) was forced out, nearly clear and only slightly blood-stained. Although one could hear air passing in and out of the opening in the trachea there was no voluntary effort of breathing from first to last. The patient now became still more cyanosed, and the heart could no longer be heard beating. Artificial respiration was continued for twenty minutes longer, although there was little hope of its being of use. Micturition took place after the commencement of taking the nitrous oxide, a symptom which I have not infrequently noticed when cyanosis becomes well marked, and also in children. I will recapitulate shortly the methods adopted to restore respiration: (1) artificial respiration within half a minute after the patient ceased to breathe, (2) nitrite of amyl within one minute after respiration ceased, (3) subcutaneous injection of ether within two minutes after the patient had ceased to breathe, and (4) tracheotomy within three minutes after the patient had ceased to breathe.

The necropsy was performed by Dr. Norman Moore, at the request of the coroner, twenty-five hours after death, in the presence of the medical attendant of the deceased and myself. Dr. Moore has kindly looked over and corrected the description of the morbid appearances. The body was well nourished and muscular, of a man about twenty-six years of age. The face, neck, and back were all deeply cyanosed; there was a mark of a recent tracheotomy wound. On removing the skull cap, which was unusually thick, venous engorgement was visible on the surface of the cerebral hemispheres; nothing abnormal was noticed in the cerebral substance. On opening the chest, the veins were noticed everywhere full of dark fluid blood. All the internal organs were healthy. The pericardium contained the normal amount of fluid. The heart was normal and the valves competent. All the cavities of the heart were empty, except a small quantity of fluid blood in the right ventricle. No clots were present. The lungs were engorged

¹ A paper read before the Society of Anæsthetists on March 15th, 1894.