

of the ileum into the ascending colon, which increases so long as the length of the mesentery permits it. When the ileum can prolapse no further the process changes, the cæcum and ascending colon being gradually inverted and the continued growth of the tumour taking place in the usual way. Here the second stage had not begun.<sup>6</sup> It is evident from this that in their nature and mode of origin the two conditions were practically identical. This identity is of special interest when viewed in connexion with the unassisted return of the prolapse which was witnessed upon one occasion. If a prolapse through an artificial anus can recede of its own accord, one lying loose in the capacious ascending colon can probably do the same. The possibility of spontaneous reduction of an intussusception is admitted and thought to occur not unfrequently, though from the very nature of the case actual proof is wanting. But the method by which it is accomplished can be gathered from this observation. A vigorous peristalsis occurs in the entering tube of bowel, and as the wave passes downwards succeeding lengths of longitudinal fibres contract and invert successive portions of the returning layer at the apex. In this way the intussuscepted bowel diminishes, and is finally reduced. If the methods of artificial and spontaneous reduction are compared an interesting difference is revealed. The surgeon disengages the bowel by peeling the sheath downwards off the intussusceptum, at the expense of the upper end of the returning cylinder, until reduction is completed; but the intestine produces the same result by the intrinsic action of the entering layer, which rolls the returning cylinder inwards at its lower end until the whole of it has disappeared and the invagination no longer exists.

Attention cannot fail to be attracted by the fact that in Case 1 reduction was easy of accomplishment after symptoms had existed for forty-four days. In Mr. Hutchinson's well-known case disinvagination was safely performed at the end of a month. But neither of these approaches the case recorded by Dr. Handfield-Jones and Mr. Page,<sup>7</sup> in which an invagination was reduced after a probable duration of three months.

The variety of the intussusception and the diversion of the fæces were no doubt the two contributing factors to this result in my first case. Had the intussusceptum been firmly grasped by the sheath, instead of lying rather loosely in it, the congestion would have been much greater and the inflammation of the opposed serous surfaces more intense and of earlier date; whilst the artificial anus probably prevented the continued growth of the tumour by the inverting of the cæcum and ascending colon, a circumstance that would quickly have been followed by acute symptoms. It has been pointed out that the absence of bloody stools may be due to strangulation of the invagination, and that consequently that important symptom is not to be relied upon as a trustworthy indication of the condition of the bowel. But if it be considered in association with the constitutional symptoms and condition of the patient it is a distinct help. If there be no bloodstained discharge from the rectum in a case of intussusception, it probably means either that the blood flow through the tumour has been suddenly stopped or that it has not been seriously affected. In the former case the usual signs of strangulation will quickly make their appearance; in the latter they will not. In this instance the absence of a bloodstained mucous discharge and of excessive tenderness about the tumour led me to hope that the opposed serous surfaces would not be found inseparable.

One other point is worth mentioning. On one occasion when the first patient was under an anæsthetic I introduced my finger through the artificial anus to feel the tumour bimanually, and was astonished at the facility it gave for exploring the abdominal cavity. So freely could the finger be moved about in all directions that for a moment I feared it might have got inside the peritoneum. The intussusception could be felt from its neck in the right iliac fossa to its os uteri-like apex near the gall bladder. The left loin and iliac fossa could be examined with equal ease, and no doubt the pelvis and higher abdominal regions could have been similarly investigated had I not felt that it is sometimes wise to set a limit to curiosity.

Leeds.

<sup>6</sup> Treves: *Loc. cit.*, p. 173.

<sup>7</sup> Transactions of the Royal Medical and Chirurgical Society, vol. lxi., 1878.

## HEPATIC FISTULA SUCCESSFULLY CLOSED AFTER SIXTEEN MONTHS.

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AN Armenian, aged twenty-seven years, while employed in railway construction at Selangor in the Straits Settlements about the middle of December, 1893, began to suffer from what eventually proved to be an abscess of the liver. He was admitted into hospital at Perak at the end of January, 1894. Early in March he was transferred to the hospital at Penang, where he was operated on for an abscess of the liver. Six weeks later he was discharged apparently cured, the wound having closed. He sailed for Singapore, but the wound re-opened on the voyage, and there was a copious purulent discharge. On arrival at Singapore he went into hospital, and a drainage-tube was inserted. The wound was again healed by the end of June. After remaining six weeks longer at Singapore the sinus reopened and again began to discharge pus. Accordingly he sailed for Calcutta, and was admitted into the Presidency General Hospital on Sept. 4th, 1894. No antecedent history of dysentery or drink could be elicited. On admission he was in rather a reduced condition, weighing only 123 lb. The liver was of natural size, but there was a hepatic fistula discharging unhealthy pus in the eighth intercostal space and pretty far back in the infra-axillary region. On Sept. 6th the first attempt to close the sinus was made. An incision was made to explore for dead bone, but the ribs were quite healthy. After a little manipulation the fistula was found to be very narrow, slightly tortuous, and six inches long. Its track was dilated so as to admit a long and narrow drainage-tube. On the 10th the patient was transferred to my wards, and he continued as my patient until he finally left the hospital in October, 1895. Syringing with iodine lotion and insufflation with iodoform were tried, but ineffectually. Then on Sept. 28th, 1894, an inch and a half of the eighth rib was resected in the region of the fistula. The channel was over six inches, very narrow (admitting only a fine probe or a knitting needle), and had dense walls which felt almost cartilaginous in consistence. In its course the fistula traversed the pleural cavity (the pleura being adherent around it), the diaphragm, and a considerable thickness of liver tissue near the upper surface of the right lobe. The track was dilated gradually with some difficulty, until, finally, a cavity was reached. The finger could just reach this cavity; but it was estimated, with the help of instruments, that it was about the size of a hen's egg, and that it had thick walls. A collection of pus, caseous material, and sloughy tissue was removed by a long-handled Volkmann's spoon. A drainage tube having a diameter of three quarters of an inch was inserted. For the next two or three days the patient suffered from acute epigastric pain, nausea, and vomiting; but after Oct. 1st there was no further trouble. Up to the end of November his physical condition was good, and he weighed 138 lb., having gained over a stone; but the fistula would not heal, and at this time was two and a half inches long. Although the discharge had become scanty it frequently contained bile and mucus for several days at a time—and the bile seemed to retard healing. Various solutions were tried for syringing the fistula—e.g., carbolic acid, perchloride of mercury, boric acid, thymol, iodine, iodoform in ether, and sulphate of zinc. The tube was gradually shortened, then smaller tubes were substituted, and finally when the fistula narrowed a strip of lint was inserted. Bark and ammonia and hypophosphites were given, and on several occasions sponge grafting was tried, but nothing succeeded. In December he began to lose ground again, and the length of the fistula varied from three to four inches. The discharge contained flaky pus, occasionally bile, and tenacious glairy mucus. The wound was syringed twice, sometimes thrice, a day. This improved the character of the discharge. A solution of nitrate of silver was once injected along the track; but it proved injurious, causing acute pain in the epigastrium, vomiting of bile and mucus, and an increased discharge of bile from the wound. Sulphate of copper was also applied without material benefit. On Dec. 18th an incision was made through the former cicatrix, and the fistula was slit up and dilated. The cavity

was now smaller and more shallow, and so could be better explored by the finger. The dense connective tissue lining the walls of the fistula and cavity for the entire length of the track was thoroughly scraped with a Volkmann's spoon and the debris removed; then the entire raw surface was well swabbed with a solution of chloride of zinc (forty grains to the ounce) and a large drainage tube was introduced. This operation was not attended with any serious hæmorrhage. That night and next day there were cough, bilious vomiting, and epigastric pain. The drainage-tube seemed to irritate the diaphragm, but after the first two days he had little pain or discomfort. In January, 1895, he began to improve again. The fistula became smaller and the discharge less; but still the dressings were often bile-stained. Quinine and iron, nitro-muriatic acid, and nux vomica were administered. During February his general health was excellent, but the fistula remained much the same. Syringing and insufflation were discontinued, and a probe covered with cotton-wool and dipped in compound tincture of benzoin was daily inserted in the fistula. This proved more efficacious than anything hitherto tried; still, the track would not close, and the discharge contained bile at intervals. In March the same treatment was continued and the discharge almost ceased, but the fistula was still nearly two inches in depth, so on March 22nd he was sent on a voyage to Singapore in the hope that the change and sea air might prove beneficial. He returned to hospital on May 24th. The trip had apparently done him more harm than good. He looked worse and said he had felt miserable all the time he was at sea. The sinus was two and a half inches long and had been constantly discharging bile, mucus, and pus. His weight was 131 lb. He was given a tonic mixture, the wound was dusted with alum and iodoform, and a dry dressing of perchloride of mercury was applied. Early in June minute particles of nitrate of silver were inserted into the fistula, which remained about two inches long and continued to discharge bile occasionally. His weight rose to 136½ lb. On June 8th a probe heated red-hot was introduced and the walls of the track were thoroughly cauterised. This was the only operation which was followed by fever, and the febrile reaction was severe. Next day his temperature rose to 102° F., on the following day it varied from 100° to 104° 2', on the 11th from 101° to 104°, and on the 12th from 101·8° to 105·4° F. He was very restless and suffered from intense headache, and the discharge was profuse, greenish, and viscid. On that day he developed acute orchitis and epididymitis without any obvious cause. This was treated by free leeching and an evaporating lotion. By June 18th the fever had quite left him and he again began to improve, but the fistula had increased to three inches. The right testis remained large, and on the 22nd fluctuation was discovered, and his temperature again began to rise. An abscess in the globus major of the epididymis was incised and drained. He was given a mixture of strychnine and iron, with sulphate of magnesia occasionally, and powdered boric acid was applied to the fistula and a dry dressing. Early in July an emulsion of eucalyptus oil was injected into the fistula, which was again two and a half inches long. The track began to contract rapidly, and by July 8th the fistula was occluded and there was no discharge. The fistula was soon firmly healed and subsequently gave no further trouble. He remained under observation until Sept. 16th, when he was discharged feeling perfectly well and strong. But four days later he was re-admitted suffering from an anal abscess, which was incised on the day after admission and the wound healed readily. He was finally discharged on Oct. 7th, 1895, at which time the scar of the hepatic fistula was quite firm and the liver seemed sound. He went to Burmah, and I have heard nothing more of him.

*Remarks.*—This case is of some interest owing to its obstinate course, to the number of operations performed, and to the intercurrent complications. The persistence for sixteen months of a hepatic fistula, after an abscess of the liver was opened, illustrates the evil of the too early removal of the drainage-tube. Probably, also, too small a tube was used in the first instance. For the drainage of an abscess of the liver the larger the tube the better, and there should never be any hurry to dispense with the tube. *Festina lente* is just as important a principle in the after-treatment of an abscess of the liver as is the avoidance of delay in operating when once the abscess has been diagnosed. Quite a variety of causes were at work to prevent the closure of the fistula—(1) There was the absence of surgical rest owing to the

cavity and fistula having such close relations to the diaphragm, a muscle which is never at rest; (2) the course of the fistula was somewhat tortuous through the various layers of liver, peritoneum, diaphragm, pleura, intercostal muscles, and skin; (3) there resulted consequently an ill-drained cavity at the end of a long and sinuous passage, which would not heal owing to retained sloughs; (4) the escape of bile and mucus from time to time through the fistula caused irritation and retarded union; and (5) the chronic nature of the case tended to further the formation of a lining of dense cicatricial tissue in the walls of the fistula, which, until it was destroyed, of itself precluded the possibility of closure.

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## ILLUSTRATIVE CASES OF APHASIA.

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(Continued from p. 1080.)

CASE 9. *Complete motor aphasia, word-blindness, and agraphia; no obvious word-deafness.*—This is another case in which the patient could understand spoken language; in other words, in which there was no obvious affection of the auditory speech centre, but in which there were complete motor vocal aphasia, word-blindness, and agraphia. This condition was present from the first. The absence of word-deafness in an otherwise complete aphasia of rapid development suggests either (a) that in some persons the auditory speech centre is active on both sides, or (b) that a profound vascular lesion which completely destroys the functional activity of the visual speech centre, the motor vocal speech centre, and which produces complete agraphia, does not implicate the auditory speech centre. In commenting upon Case 8 I have already referred to this most interesting and important question. The notes of the present case are as follows. The patient, a man aged sixty-three years, was seen on Aug. 31st, 1893, suffering from slight right-sided hemiplegia and aphasia. On the 27th he had some difficulty in speaking and his wife noticed that he repeated some words two or three times. This passed off in the course of a few hours. The next day the difficulty in speaking returned and again passed off. He remained fairly well until the 30th, when he had a more severe attack. He completely lost his speech, the temperature rose, his head became very hot, and he wandered a little in his mind. Since then he had complained of numbness and weakness in his right hand and leg. On examination the right side of the face was found to be markedly, and the right arm and leg very slightly, paralysed. Mentally the patient appeared pretty acute. He seemed to understand everything that was said to him; he put out his tongue, moved his hand, leg, &c., when told to do so. The auditory speech centre did not appear to be affected, at all events in any marked degree. There was complete motor vocal aphasia. He could not even say "yes" and "no." There was complete word-blindness. Several simple questions were put to him in writing, but he manifested no sign of intelligence. The rough test seemed to show that there was right-sided homonymous lateral hemianopsia; but in the patient's aphasic and word-blind condition it was difficult to be sure of this. He was quite unable to write; although there was little (gross) loss of power in the right arm and hand he seemed unable to hold a pen or pencil securely. A week after my visit he became very much worse, the temperature rose, he seemed to suffer from headache, and the right arm and leg became completely paralysed. The attack was probably due to secondary inflammatory changes around the lesion. He slowly recovered from this condition. On Nov. 8th, 1894, his wife, who was consulting me about herself, reported that he was able to walk and had regained some power in the right hand. He seemed to understand everything that was said to him, but was totally speechless; he could not even say "yes" and "no." He could not understand written language. He could sign his own name, but could not write anything else. She doubted if he always made signs correctly. She thought he sometimes pointed in one direction when he meant another. Nevertheless,