that the injected material does not readily act on them, and that the products of that action, when established, do not readily enter the circulation. For it seems probable that the fever and many other elements of the state known as the "reaction" are due to the absorption of tissue disintegrated at the seats of disease by the influence of the injected "lymph" and taken up into the circulation. That similar general symptoms are induced by such an occurrence is familiar under other circumstances, notably high bodily temperature being thus induced. Depage of Brussels assumes that the injected material contains an agent, ptomaine or other, which combines with the ptomaine of the tubercle in

ever, showed no specific characteristic whatever. All these parts reacted markedly to the first and several subsequent injections. The small scar under the right eye, however, only reacted at one point, which shot up red and swollen from the surrounding white tissue. This would suggest the almost complete success of Mr. M'Gill's attempt to eradicate the disease at this point. Several small spots on the right upper eyelid reacted, and have since sloughed out and apparently healed perfectly. The same has occurred at the spot above the left side of the mouth. The place between the eyebrows swelled and became red, and this was repeated after several injections; but there has never been any formation

FIG. 1.

J. C.: Lupus of the face of seventeen years' standing. Before injection with Koch's liquid. (Under the care of Dr. Hime, Bradford.)

FIG. 2.

J. C. at the height of reaction, seventeen hours after the first injection of Koch's liquid (0.001 mgr.). (Under the care of Dr. Hime, Bradford.)

the blood of the injected person. The general phenomena of reaction he regards as being due to the introduction of this substance in the blood, and partially to its combination with the small quantity of tubercular ptomaine circulating in the blood. But only very exceptionally did the injected "lymph" produce reaction, except in tubercular atients.

The appearance of the reacting part is very peculiar and characteristic. In order to give those colleagues present who have not seen such as vivid an idea as possible of what great changes may occur, Dr. Hime produced on the screen two likenesses of a patient he was treating for lupus—one showing him before treatment, the other taken seventeen hours later, when he was in the height of local and general reaction, with a temperature of 103°. The features are greatly distorted, owing to the extensive swelling of the nose, upper lip, and part of the left side of the cheek, the eyelids, and the skin between the eyebrows, the parts affected with tuberculosis. The patient had been surgically treated for the disease at the Leeds Infirmary by the late Mr. M'Gill more than once. Under the right eye was a whitish scar, where he was last "gouged"; above the left side of the mouth was another cicatrix (neither very distinctly marked in the drawing). The two upper lids were red and puffed before treatment, and made him at first fear some kidney mischief might coexist, which was found to be the case. There was a roughened, reddish condition of the skin between the eyebrows, which, how-

of scab, and Dr. Hime thought that the disease, though undoubtedly present, was very limited and superficial. There was no local reaction whatever in any part of the patient's body, except those connected with the face.

(To be continued.)

REMARKS ON THE OPERATION OF ILEO-COLOSTOMY FOR ORGANIC DISEASE OF THE CÆCUM, CAUSING OBSTRUCTION.

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I WAS much interested in Mr. Bryant's able and instructive paper on "ileostomy" for organic disease of the cæcum, which appeared in the columns of THE LANCET of Jan. 15th. That such an operation as he describes may be the means of relieving some of the urgent and distressing symptoms of obstruction, as well as of prolonging life, cannot be disputed, but the question arises, by adopting such an operation, does the surgeon place his patient in the best obtainable position during the remainder of his life? It is on this point I wish to make a few remarks, and I

shall endeavour to show that the operation of ileo-colostomy in all cases, excepting when the patient is so reduced and exhausted as to render such a measure undesirable, is preferable to ileostomy. The following case illustrates well what I mean.

On August 2nd, 1889, Dr. Hayes of Basingstoke asked me to see a gentleman with him suffering from a tumour which occupied the right iliac fossa, extending upwards to within two inches of the false ribs, and forwards to nearly an inch beyond the right linea semilunaris. The patient had suffered considerably from time to time from irritation and discomfort of the bowels. During the two months previously to my seeing him he had been much worse; he complained of constipation, alternating with irritating diarrhoea, general uneasiness, and great pain. He had been seen by a physician, who pronounced him to be suffering from epithelioma of the cæcum, with which diagnosis I fully agreed. The patient was a tall, spare man, over fifty years of age, with sallow complexion and good pulse. He had been losing flesh rapidly, and was very low. The bowels had not been opened for some days. The abdomen was somewhat tympanitic; but he complained of no tenderness excepting over the tumour. A tumour was discovered occupying the situation above described; hard and somewhat firmly fixed. As the symptoms were urgent, I suggested that the abdomen should be opened, and we should be guided by circumstances what operation should be performed to relieve the patient of his distressing symptoms. The removal of the growth appeared to be impracticable, and I explained to the patient and Dr. Hayes that I should be prepared to perform ileo-colostomy by implanting the ileum into the transverse colon, and by such means trusted that the remaining term of his life might at least be made more endurable. On August 3rd, with the assistance of Dr. Hayes and Dr. Purcell, Dr. English giving the anæsthetic, I opened the abdomen by an incision about three inches long over the right linea semilunaris, all bleeding points being caught with pressure-forceps. I opened the peritoneum along the whole length of the incision, and immediately came down upon a large mass of disease, extending from the cæcum nearly as high as the transverse colon. It being quite impossible to remove this I determined to divide the ileum and implant the proximal end into the transverse colon. Passing the index finger of the left hand along the inner side of the cæcum, a portion of ileum, close to the ileo-cæcal valve, was easily drawn out of the wound; I then passed two pieces of indiarubber cord lightly round the intestine, about four inches apart, the piece on the distal end being placed about two inches from the ileo-cæcal valve; I next divided the intestine completely across, between the two indiarubber ligatures, caught up and ligatured all bleeding points, and washed the divided ends thoroughly. The cut end of the distal part of the ileum was inverted and closed, by stitching together the peritoneal covering with a fine silk suture. The next step in the operation was to line the proximal end of the divided intestine with a thin band of indiarubber, about half an inch wide, which was fastened by a continuous catgut suture to its cut edge. Two chromicised catgut sutures about eighteen to twenty-four inches long, and armed at each end with a needle, were next passed through the indiarubber band and all the coats of the intestine from within outwards. The posterior threads were passed one on either side of the mesentery, and the anterior threads at equal distances apart through the convex surface of the bowel. A portion of the transverse colon was next brought out of the parietal wound and a longitudinal incision made in its convex surface; the long sutures connected with the ileum were then passed through the serous and muscular coats of the colon, the anterior threads about half an inch apart at one end of the opening in the colon, and the posterior threads at a similar distance at the other end. (Fig. 1.) The open end of the ileum was then thrust through the slit and the sutures firmly tied, thus preventing the possibility of the bowel slipping out; two Czerny-Lembert sutures, one on each side, were introduced, passing through the serous and muscular coats of the colon and small intestine, and tied firmly. An omental flap was finally fastened round. The parts were thoroughly cleansed and dropped back into the abdomen, and the parietal wound closed and dressed in the usual way. The operation lasted about one hour.

The patient stood the operation very well, and was returned to bed, and ordered to be fed with nutritive enemata and zymised meat suppositories for the first twenty-four hours.

August 4th.—Motion passed naturally by the rectum to-day, and continued to do so daily. No tenderness over the abdomen, excepting over the original tumour, the outer and lower side of which is brawny, and had all the appearance of deeply seated cellulitis.—5th: I visited the patient with Dr. Hayes, and found the bowels had acted naturally and well and the wound looking healthy. A large abscess was pointing at the upper part of the thigh; this was freely opened, letting out a large quantity of stinking pus; this was kept syringed out and drained. The patient takes his nourishment well, and is kept up with brandy, champagne, beef-tea, &c. The patient had not sufficient vital

FIG. 1.

power left to resist the constant drain of the abscess, and died on August 16th, thirteen days after the operation.

Remarks.—Had this patient been operated on earlier I am convinced that his life might have been materially prolonged. So far as the operation was concerned, it was all that could have been desired. There was no peritonitis and faeces passed freely from the day of the operation until his death, nearly a fortnight after. This being the case, this operation must commend itself to all surgeons as being far preferable to any operation which has for its aim merely the formation of an artificial anus or a faecal fistula. In my experimental research, published in July, 1889, I had not one death after the operation I have described, and the result, as may be seen in Fig. 2 (a specimen of which is now in the Museum of the College of Surgeons), is perfect, and I have but little doubt at no far distant date, in cases of obstruction of the bowels, from whatever cause, the con-

FIG. 2.

tinuity of the intestinal canal will be preserved either by a similar operation to the one described, or by means of approximation plates, as suggested and practised by Professor Senn, and that the only cases in which a faecal fistula will be justifiable will be in cases in which the patients are too exhausted to allow of their taking an anæsthetic for a lengthened period.

Fig. 1 is only intended to show how the ileum is implanted into the colon, but in practice it is always desirable to divide the colon and invert and fasten up the divided ends, so as to prevent the possibility of faeces returning over the diseased surface. In the above case this was not done, as the patient was in a very low condition, and it was recognised that the operation was only a palliative one.

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