don reports a case in a boy of 15 with a history of acute anterior poliomyelitis in infancy.

DURATION OF THE DISEASE.

My case lasted 22 months, which is probably about the average length of this disease. Collins reaches the conclusion that the average duration is about two years. A few of the recorded cases lasted from six to nine months. A very small number lasted four to five years, while one case extended over a period of ten years. McPhedran believes most cases terminate in one year, but the case reported by him lasted two years.

A NEW METHOD OF OPERATING FOR ANORECTAL FISTULA.

PRESERVING THE CONTOUR OF THE ANUS AND THE FUNCTIONS OF THE SPHINCTER MUSCLES.

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I have learned from practical experience that much can be done to preserve the functions of the anal sphincters by operating as follows: The patient having

Fig. 1.—Diagrammatic: a, complete fistula; b, tissues between fistula and anal canal.

been prepared in the usual manner, the fistula (Fig. 1) is injected, when deemed necessary, with a solution of methylene blue (methylthionin hydrochlorid, U. S. P.) or other coloring materials to aid in searching out the course of the tract or tracts. All of the fistulous tracts external to the sphincter are then divided. A probe-pointed director is then passed into the bowel through the remaining tract and an incision is made on its distal side. This incision should extend far enough distally to divide all or a part of the fibers of the external sphincter and in such a direction as to locate the transferred internal opening at or near the anal margin (Figs. 2 and 3). Then, turning the knife, make an incision—Salmon's "back cut"—on the proximal side of the tract. A seton is then passed through the opening entering the bowel and tied loosely around the tissues remaining and undivided (Figs. 2 and 3).

The wound is dressed as after the ordinary incision operation for fistula. At the end of twenty-four to thirty-six hours the wound is redressed, care being taken to dress it so that the opening entering the bowel will be made to heal from the proximal toward the distal

side. The object in doing this is to advance the final fistulous tract as far distally (toward the skin) as the case will permit, so that, if possible, it will pass through or distally to the fibers of the external sphincter, when the healing process is complete.

As a rule the enlarged tract entering the bowel soon closes, with the exception of that part through which the seton passes. As soon as this has occurred the seton may be removed, and by the time the external wound is healed the tract entering the bowel will possibly have closed also. Should it not, at any time later this little tract, which will usually not be more than 1 inch in

Fig. 2.—Diagrammatic: c, scope of incision on distal (toward the skin) side of the fistula; c, tissues remaining and undivided; d, the seton passed around them and tied.

length, may be dissected out and the remaining fibers of the muscle sewed together, thus preserving the contour of the anus and the functions of the sphincters.

By operating in this manner no deep sulcus is left to mutilate the anus as there frequently is following the usual incision method of dividing the muscle. Instead of this the contour of the anus is preserved. Should the seton be left *in situ* until the wound is completely healed a small non-secreting fistula will be seen entering the

Fig. 3.—Diagrammatic: full view: f, incision of fistulous tracts external to sphincter; g, seton passed through the opening into anal canal and out through anus, h.

anal canal. This may be left alone or dissected out and sewed together at will. Sometimes this opening will give no annoyance and finally close without further interference.

Should the remaining tissues in this case be simply divided without dissecting out the tract and sewing them together, mutilation of the contour of the anus and loss of control to a certain extent would most likely follow. In such a case the entire epidermis-lined tract should

be dissected out and the ends of the muscle united. This may be done either under local or general anesthesia. It is best performed, however, under the latter.

The question might arise: What is the use of the seton? Would it not be just as well, or even better, not to use it? No; for by using it the opening into the bowel is transformed and transferred at the pleasure of the operator and the incision through its use made to heal from the proximal toward the distal side, or, in other words, with it you can direct and greatly control the healing process and the location of the final fistulous tract.

It might be objected theoretically that there would be constant reinfection from the setonized fistulous tract which would be inimical to the healing. Practical experience has not found this to be true. Besides, the tract is washed out daily with an antiseptic solution.

It is the consensus of opinion that the large majority of cases of incontinence following operations for fistula could be avoided if the external sphincter were cut squarely across and the ends sutured together or the postoperative treatment so directed that the ends of the muscle would be slightly separated by the cicatrix. The seton method provides for this procedure.

The anus not being divided aids the healing of the external wound and prevents much of the contraction and atrophy usually observed after these operations.

By operating in this manner we simply have an external wound with which to contend. The anus is not disturbed to any great extent, and in some cases not at all, and the patient is usually up and around in a few days. Moreover, the bowel movements do not soil the wound.

Finally, I have found that the employment of this method of operating greatly aids in preserving the contour of the anus and the functions of the sphincter muscles in operating on many cases of anorectal fistula.

THE BICYCLE PUMP IN INTUSSUSCEPTION.

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History.—Baby X., aged 13 months, was reported by his mother on the afternoon of Nov. 10, 1907, as having vomited several times during the day and being unable to retain anything in his stomach. I directed her, by telephone, to give the child calomel gr. 1/10 every twenty minutes. At 7 p. m. the mother asked me to see the child, as he was no better. No other than his usual food had been given him, and this had previously agreed with him, as evidenced by his weight, 32½ pounds. He had had one small bowel movement in the morning; prior to this his bowels had been regular.

Examination.—I could detect nothing to account for his symptoms. His temperature was normal, there was no tenderness over the abdomen, and but for the frequent vomiting his condition seemed good. Between the attacks of vomiting he was bright, though peevish, and wanted to be carried, which for him was unusual. I directed that the calomel be continued. On the following morning his temperature was 101.6 F., the vomiting had continued and his bowels had not moved. There was still no abdominal tenderness.

Treatment.—Calomel gr. ¼ was ordered every two hours until four doses had been given. As this produced no effect, the same dose was given every hour until one more grain had been taken. At 3 a. m. the child had one very small bowel movement. On the morning of November 12 there was no further movement. The temperature was 99.6 F. Saline enemas, one pint with the addition of an ounce of glycerin, were ordered every three hours. At 11 p. m. Mrs. X. called

me up and asked me to come to the house, as the baby's bowels had not moved, and she was worried about him. When I arrived he still seemed in good condition, but kept his mouth open in a peculiar way, as though he was nauseated, and every few seconds yawned. It was this open mouth and yawning that worried the family. The enemas having produced no result, I had, at 7 p. m., ordered the addition of ox gall to every enema. The abdomen being very soft and free from tenderness, I performed massage, and directed that the enemas be continued, but in larger quantities.

By the morning of November 13 there was still no movement. Child retained albumin water, but was given only a teaspoonful at a time. Vomited occasionally. A mass, which the mother could also plainly feel, was made out in the right iliac fossa, a little below the appendix. Only slightly tender, but pressure produced gurgling. I advised consultation, and Dr. L. E. La Fetra was asked to come over. He arranged to be at the house at 4 p. m. At 1 o'clock I again saw the child. The mass, if anything, was larger, and was now very tender, the slightest touch causing the child to cry. Feeling now certain, of what for the past twenty-four hours I had suspected, that I had a case of intussusception to deal with, I took a bellows, attached to it a catheter, and introducing the latter into the rectum, attempted to inflate the intestines sufficiently to replace the telescoped gut. The bellows worked badly, and my efforts were unsuccessful. One of the boys in the family having a bicycle pump, I substituted this for the bellows. I had the father manipulate the pump slowly and carefully, while I kept up percussion over the abdomen. When I considered that sufficient air had been introduced, I withdrew the catheter, and directed Mrs. X. to wait a half hour and then give an enema. When I returned at 4 o'clock to meet Dr. La Fetra, Mrs. X. informed me that just after the enema the child had had a small fecal movement, and an hour after another. Dr. La Fetra examined the child, but finding no mass asked me to point it out. I attempted to do so, when I was surprised to find that it had entirely disappeared. There was no possible doubt that it was there before the pump was used, as not only I, but the mother, distinctly felt it; and I not only felt it, but distinctly mapped it out. Between 1 and 4 o'clock there had been a wonderful improvement in the child. There was but one conclusion to reach, and in this Dr. La Fetra said he thoroughly concurred, that it was a case of commencing intussusception, and the air driven in by the pump had forced the invaginated gut back to its normal position. That night the child had a large bowel movement, and from then on continued steadily to improve. There was no return of the trouble, and he has since been perfectly well.

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A CASE OF VOLKMANN'S PARALYSIS AND CONTRACTURE.

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In view of the recent publication of an article¹ on Volkmann's paralysis and contracture, giving a history of the literature of the subject and a tabulation of cases, it was thought that the following case, which, through the kindness of Dr. E. H. Arnold, I am permitted to report, might prove of interest.

Patient.—A. L., girl, aged 5½, was brought to Dr. Arnold, March 1, 1901, with the left hand and wrist paralyzed and contracted.

History.—Family history and personal history up to time of accident, five months previous, were negative. On Nov. 10, 1900, patient fractured left humerus just above elbow joint. The fracture was reduced and the arm splinted and bandaged. It was not especially painful, but the hand soon puffed up, assumed a wax-like pallor and the fingers began to contract. The attending physician brought another in consultation and

1. Powers (Charles A.): Ischaemic Paralysis and Contracture of Volkmann, THE JOURNAL A. M. A., March 2, 1907, p. 759.