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Reprinted from THE AMERICAN JOURNAL OF OBSTETRICS AND DISEASES
OF WOMEN AND CHILDREN, Vol. XV., No. IV., October, 1882.

NEW YORK:

WM. WOOD & CO., PUBLISHERS, 56 & 58 LAFAYETTE PLACE
1882.

INCONTINENCE OF FECES IN CHILDREN.

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THIS is an affection which I do not remember having seen mentioned in our current literature, and a rather careful search among standard authorities has, with one exception, failed to reveal any reference to it. Henoeh incidentally alludes to such a disorder when speaking of its analogue, enuresis.¹

The following two cases have, within three years, fallen under my care :

No. 1.—H., aged seven years, a boy of mushroom growth and hot-house culture. Began before breakfast every day with an hour at Spanish, and until 3 P.M. was unceasingly occupied with French, German, music, and the ordinary school curriculum. This policy, initiated four years before, the pressure being gradually increased, had been maintained almost without interruption.

The child had consequently developed into a sort of loaded phonograph, capable of startling automatic expressions which afforded much entertainment to visitors, and gave the ambitious father great hope and comfort. Under such conditions it is not to be wondered at that something gave way, and, fortunately for the brain, it was the sphincter ani.

When this deplorable occurrence first took place, the child was sharply reprimanded; but, the accident repeating itself, in the beginning two or three times weekly, and later about once a

¹ Lectures on Dis. of Children, p. 258, Wood's Library, 1882.

day, more pronounced measures were instituted to counteract the tendency. He was severely flogged on many occasions, deprived of liberty, luxuries, etc.; yet without avail.

The father finally gave me a history of the boy, such as I have just related, and asked me to see him.

I failed to find any spinal lesion, and the rectum was, to digital exploration, perfectly normal. The sphincter was tight, grasped the finger with the usual firmness, and there were no sources of irritation about the anus.

The abnormal conditions under which the child had been living very naturally, at the outset, suggested themselves as the cause of the difficulty, and I therefore advised a cessation of the punishments and a release from books. Besides, I gave ten drops Squibb's fl. ex. ergot three times a day.

The result was satisfactory in about three weeks, the involuntary discharges becoming gradually less frequent, and finally ceasing altogether.

No. 2.—A gentleman residing in a suburban village requested me to visit his daughter, who was affected with a most disgusting disorder. She was thirteen years old, but apparently had never appreciated the fact that she was out of the nurse's care, and beyond the protecting influence of diapers. From the period when she should have respected herself in such matters until the present, there was scarcely a day but that she did befoul herself. When remonstrated with, she would be deeply affected, and declare her inability either to explain or avoid the accident. Varied had been the treatment, and various the physicians who had prescribed. Electricity had been faithfully applied, generally and locally.

I found a tall, slim girl with a pale, expressionless countenance. The flesh was cool and flabby, the sclerotics pearly white, and her motions were listless. Examination of the sphincter ani gave unmistakable evidence of relaxation of its fibres. For, although to a casual observer the anal outlet was sufficiently closed, to the practised touch there was an absence of resistance easily distinguishable. All else about these parts was normal. Altogether, then, we had a typical case of anemia. But, the parents informed me this had been the general verdict; yet iron, in none of its forms, had proved beneficial.

I prescribed a mixture containing fl. ex. ergot, ℥ xv.; tr. belladonna, ℥ v.; strychnia, gr. $\frac{1}{10}$ as a dose three times a day. At the end of a week she had had only two recurrences of her trouble, and within three weeks I considered her cured. She was then put upon citrate of iron and quinine, with marked benefit. About four months afterwards, all treatment having been long ago suspended, her father came and told me that the patient had, within a week, lost her appetite, was looking ill, and had suffered from her old difficulty once or twice. Wished to know whether he should repeat the former treatment. Asked, however, that the ergot be given in some other form, as the child had

taken a great dislike to it. Thereupon, I made a suppository consisting of ergotin, gr. v., cocoa butter, gr. x., and directed one such to be pushed within the sphincter night and morning; ordered to return to the iron and quinine mixture. Decided improvement was immediately manifest, and after a fortnight the bowel was under normal control. The suppositories were discontinued after the second week, but the tonic was persevered with for a month. There has never been any return of the difficulty.

These cases are peculiarly interesting with respect to their etiology, pathology, and therapeutics; and, to rightly consider them, we must recall the physiological anatomy of the parts affected.

The organs immediately concerned in normal defecation are, on the one hand, the sigmoid portion of the colon, the rectum, sphincter ani, and levator ani muscles; on the other, the spinal cord; directly through branches from the sacral plexus, and, indirectly, through its sympathetic branches. In the healthy state we have the sphincter muscle in a condition of involuntary tonic spasm, relaxed only to allow an alvine evacuation. It is generally considered that the rectum is empty until within a few moments before the final discharge takes place, and that it is only in cases where the intestinal contents are more or less fluid, or where the individual is habitually constipated or aged, that this portion of the bowel serves as a reservoir. Rectal accumulations, however, do not induce a normal desire for stool. They give us a feeling of weight and discomfort, and a sense of helplessness until artificial means are resorted to. Those accustomed to vaginal examinations are well aware how frequently this canal is occluded by a loaded rectum, and how oblivious the patient generally is to such an accumulation. It is at the sigmoid flexure of the colon, then, that the mass to be voided is temporarily stored, and from which the alarm is first given. The familiar sensation is conveyed from the mucous membrane through filaments of the hypogastric plexus of sympathetic nerves in a roundabout, gentle, and deliberate manner to the cord, and thence to the brain. In the mean time the colon is driving forwards its contents, and very soon the mass comes down to the sphincter, which, the time and place being convenient, and there being no distracting surroundings, relaxes, the levator ani muscles pulling upwards and outwards, and the act of defecation is accomplished.

The relaxation of the sphincter is due partly to spinal reflex, and partly to voluntary influence. It is capable of taking place, however, independent of any mental intervention, as is shown in animals and men after destruction of the cord above the lumbar portion. Under such conditions the sphincter acts as in health, except with the modifying and restraining influences of the will.

The centre for the sphincter ani is in the lower portion of the lumbar spinal cord, and is in communication with the striated sphincter muscle by means of branches from the fourth sacral and pudic nerve. These nerves being cut, the sphincter becomes permanently relaxed. Through these nerves the spinal centre endows the muscle with a constant, unconscious, unfatiguing tone. When the influence of this centre is withheld, or "inhibited," from whatever cause, we shall have a relaxed sphincter. The known agencies thus affecting the centre are, physiologically, irritation of the internal surface of the sphincter and emotional shocks.¹

Pathologically we may have this influence weakened, or wholly abolished, by degenerative disease of either of the three factors concerned: the spinal centre, the efferent nerves, or the muscle itself. On the other hand, there may be an uncontrollable, yielding sphincter from either excessive irritability of the cord, or hypersensibility of the lining membrane of the lower bowel or sphincter.

Now, with such facts before me, and remembering, also, that in children these reflex centres are prone to exalted sensibility, I concluded that the first case was one due to excessive irritability of the cord and, for some reason, this special sphincter centre. The nervous system of the boy had always received the maximum of culture, and his brain certainly was over-stimulated. The spinal cord is apt to sympathize with the brain, and I thought it fair, in face of the symptoms, to so consider it in this instance. The general muscular system, thanks to remarkably robust parents, and the sphincter ani in particular, was vigorous.

¹ External irritation of the anus, or sphincter, induces increased contraction, but the stimulus thus applied travels up the bowel, causing it to contract. Hence the evacuative effect of inserting the finger, or other resisting substances, through the muscle.

In the second case, we had, at first sight, a flaccid girl whose muscles were almost incapable of a normal reflex action. By actual examination her sphincter was found to be loose; in the same condition, in fact, as the rest of her muscular system. In the one case, then, we had localized excessive nutrition, in the other general lack of it.

I gave ergot in the first case, because of its well-known contractile effects upon the vessels of the cord; and in the second instance, for its established value as a restorative of contractile power to muscle. The belladonna and strychnia were added as synergists, and, as the result with the suppositories show, might have been omitted.

Henoch thinks that electricity in enuresis acts, not locally upon the sphincter vesicæ, but, like other painful and impressive measures, only psychically, and attributes his favorable results, from the hypodermic injection of ergotin near the anus, as due to mental influences. Electricity faithfully administered by a competent physician failed in my second case, but the painless and impressionless insertion of cocoa butter and ergotin cured the disease. I certainly think it was through the specific action of the drug. Ergot will almost certainly cure incontinence of urine, and given in excess will induce retention on account of rigidity of the sphincter vesicæ (Bartholow). According to my experience, its action is the same in a debilitated sphincter ani.

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Lectures on Digestion

12 Lectures

By

Dr. C. A. Ewald,