Years ago I was accustomed to operate on both eyes at the same sitting; this I have abandoned, and now tenotomize the non-fixing eye and wait two or three months before deciding to tenotomize the fellow eye. The operation is more simple and the recovery is quicker.

Advancement I prefer in divergent cases, in paralytic cases, and in very high degrees of amblyopia. In the higher degrees of squint I favor Panas stitching previous to tenotomy. I always make the subjunctival operation, cutting the attachment of the caruncle to prevent sinking.

DR. P. J. LIVINGSTONE.—I have very much enjoyed this paper, particularly the splendid sketch the doctor has given of the History of Surgery of Squint. I am strongly in favor of treating amblyopic squinting eyes after operation by Worth stereoscopic practice. Much depends upon persistence and intelligence of the patient in this practice.

COCCYODYNIA. ERRORS IN DIAGNOSIS AND TREATMENT.*

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I wish to call your attention to an affection which is rarely alluded to in our systematic works at the present day, and a subject upon which medical literature is very meager.

While coccyodynia is not met with in everyday practice, it does occur sufficiently frequent that it behooves every physician and surgeon to be alert to the most common as well as the remote symptoms.

I have been prompted to discuss the subject from the fact that it has been brought to my attention on several occasions, and particularly so, from the fact that this affection is so frequently overlooked and the patient treated for any one or more of several conditions; namely, the multitudinous diseases of uterus and appendages, with their complex symptoms, rectal diseases, cystic diseases, neuralgia, and rheumatism.

Perhaps this subject has been unintentionally overlooked in the broad field of medical and surgical science.

Dr. J. C. Mott, of Alabama, was first to suggest and perform the operation. This was in 1844.

Coccyodynia or coxalgia is a painful affection situated at the end of the spinal column, and consists of a peculiar condition of the coccyx or the muscles attached to it, rendering their contraction and movements of the bone very painful.

The coccyx, you will remember, resembles a cuckoo's beak. It is formed of four smaller rudimentary vertebræ, and articulates with the sacrum, has attached to it the sphincter ani, gluteus maximus, and coccygeus muscles.

In Virchow's Archives of Pathology, an account is given of the discovery of a small reddish-yellow ovoid body, approximately the size of a hemp-seed, situated on the anterior surface of the end of the coccygeal bone, and embedded in fatty areolar tissue, connected by filaments from the ganglion impar of the sympathetic nerve, and with small branches of the arteria sacrales media, lying between the levator ani and the sphincter externis, and is known as the coccygeal gland or Luschka's gland, bearing the name of the discoverer and great anatomist.

This gland is rich in nerves, derived from the terminal branches of the sympathetic, which form a microscopic net-

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work perforating the stroma, and occasionally seen connected with ganglion cells. The function of this gland is unknown, but is of great interest to the pathologist, because it is not only the seat of the so-called coccyodynia, but also of the hygromate cystic perinealea, and known as the "glandula-coccygea of man." So far anatomists do not refer to this gland in women.

Simpson of Edinburgh says that he has never observed this condition in man, and my observations, also enquiries among my colleagues, support the statement of the great surgeon. In confirmation of this it might be well to quote Grant, who said, "The explaining, connecting and confirming the observations of our predecessors is more useful, and as honorable as hunting after new discoveries."

Men may have inflammation or necrosis of the coccyx from purely traumatic causes, which is analogous to coccyodynia; but the disease under consideration comes from other causes than direct injury, and in many cases there is not the least indication of either inflammation or any form of disease of the bone substance. It is an affection more common in women than men, being more prevalent in those women who have borne children.

The pathology of coccyodynia is, so far as I am able to determine, an unsolved problem, for the name does not define the pathology of the affection, simply meaning pain in the coccyx, same as we speak of myalgia, etc., to designate pain in the muscles wherever located.

It is a truth familiar to every one who meets with this condition, that these unfortunates suffer greater pain and inconvenience than from many other troubles. Coccyodynia is not necessarily (as supposed by many) a spinal disorder, and is not infrequent; but this disorder consists of a peculiar complex condition of the coccyx, or the muscles attached to it, thus rendering the contraction of the muscles and certain movements of the body highly painful.

It is an established law that whenever any chronic irritation is brought to bear upon a muscle, there follows a tendency to spasmodic contraction, and, as a result, acute pain is produced whenever an effort is made to elongate the contending muscles.

Before we proceed further, let us pass in review some of the common causes and pathologic conditions which are accountable for this pain.

Only a cursory consideration of the numerous causes can be given in this brief paper, and some causes I have intentionally passed in silence, as my remarks concern those types which are met with most commonly, leaving rare and anomalous types to those who desire to delve more deeply into the subject.

1. Osteo-necrosis, osteitis, cortical osteitis, following instrumental and normal delivery.

2. Bone abscess, due either to tuberculosis or syphilis.

3. Coccygeal dermal fistula (Morris).

4. Morbid condition of tendons of muscles attached to coccyx, also of surrounding fibrous tissues, and of nerve fibrils, and, lastly, morbid condition of glandula coccygea.

Pain is also produced as a consequence of habitual constipation, and where hardened feces are allowed to accumulate and press upon the affected coccyx.

Any point of irritation bearing on sensitive parts about rectum, vagina and bladder, such as fissure of anus and hemorrhoids, urethral caruncle, etc., would excite spasmodic and painful contractions of the sphincter muscles connected with the coccyx.

In some cases the coccyx is displaced

by fracture, or drawn to one side and possibly forward by irregular contraction of the various muscles attached to it; while in others there is no bone displacement, and ankylosis is present, leaving the coccyx entirely motionless. This last fact removes one surmise from the pathology, at least in the cases where the pain of coccyodynia is produced by the pressure or friction of the end of the coccyx on a nerve.

The pain of coccyodynia is usually of a decided sharp character, definitely localized, increased and greatly aggravated at first on arising, by walking, going up and down stairs, sitting on hard seats, by assuming erect position, riding in any vehicle, coughing, sneezing, vomiting, and urination; while defecation is attended with extreme suffering. These pains are at all times brought on and aggravated by any movement of body or lower extremities which bring into action any one or more of the muscles attached to the coccyx, as the sacro-sciatic ligament, the gluteal and coccygeal muscles, the sphincter and levator ani muscles. Menstruation is usually painful, and the distress is usually referred to the rectum.

It is true that these patients suffer almost constantly from pain and tenderness involving all the pelvic viscera.

Attitude alone is many times diagnostic of the existing condition.

Some patients sit on one hip or with one side resting upon a chair, and the dread of causing pain to the sensitive part makes them awkward and miserable. They are unable to sit or stand, and finally become bedridden. They are oftentimes compelled to support their persons with cushions, so that no pressure is allowed to injure the painful parts.

Another valuable diagnostic sign is the extreme mobility, especially when patient is under the influence of an anesthetic, and of the immobility of the supersensitive portion of the bone drawn forward by muscular action when not anesthetized.

Again there are cases where pain is not so aggravated; some will have pain with every step, while walking, and others can walk without any painful sensations.

Occasionally we find pain in this region with the young and unmarried, and with those who have never borne children, which is traceable to a direct injury inflicted by blow, kick, or fall, and certain forms of exercise, as bicycle and horseback riding.

The one most convincing proof that the pain of this disease is due to the action of muscles attached to the coccyx, and the only reason given hitherto for this affection being peculiar to the one sex, is, that in women there is greater development of the gluteal and other muscles attached to the coccyx, and this development is a necessary consequence of the greater size of the female pelvis.

I made the statement that error of diagnosis and treatment was common. And why?

As coccyodynia has many symptoms in common with uterine, cystic, and rectal disease, it is not at all infrequent that an error of diagnosis is made, consequently an error of treatment.

The average practitioner who is busy, and who infers that all pain within the female pelvis must necessarily be uterine, tubal or ovarian, will find that he is laboring under an erroneous idea, particularly if he attributes the sacral suffering to the so-called sympathetic pains of these parts; and if, after a hurried and careless examination (possibly no examination at all), makes the proverbial so-called, offhand diagnosis.

We should make it a routine practice in the examination of every pelvis to

carry the examining finger or fingers posteriorly, and palpate the coccygeal region. Should this effort prove not to be satisfactory by the vaginal route, don't hesitate to make a careful rectal examination (not instrumentally but digitally), and by conjoined manipulation you can readily determine any pathological state of the coccyx, and thereby clearly differentiate coccyodynia from all other disorders to which this region is subject.

For a number of years I have not allowed a case, complaining of pelvic pain, to escape from the table without a most careful examination of the rectum, and many times, to my great surprise, I have been rewarded by finding sufficient pathology to pay for the extra effort a hundred fold.

Don't neglect this procedure in those neurasthenic cases that are the bane of practice; many times you will be able to locate a trivial ailment that has been overlooked by your fellow associate.

I alluded to the analogy between the disease under consideration, fissure of anus and vaginismus.

In the latter affections irritation in the region of the muscles causes painful contractions, so the characteristic pain of coccyodynia is in some cases produced in the same way.

For instance, an anesthetic overcomes the spasmodic contraction of vaginismus and fissure of the anus. Again, there is no pain in vaginismus or in fissure of anus when parts are at perfect rest, neither is there in coccyodynia, but owing to the great number of muscles attached to the coccyx, a slight movement of body produces pain, because the movement involves their action, which facts are conclusive proofs that coccyodynia is not a true neuralgia of coccyx.

From the time of Galen the laity have entertained, and many physicians have fostered the idea, that surgery should only be considered after every other known or supposed method of treatment had proved futile, and somehow or other the majority of patients seem to have an overwhelming confidence in the recuperative power of nature and in drug action; and only after long weeks of suffering, endeavoring through the agency of local treatments, external applications, blisters, electricity, osteopathy, Christian Science, the quack advertiser, etc., meeting with disappointment at every turn, do they finally despair of being cured, and hope upon hope that the menopause will end their chronic discomfort.

Until recent years, people failed to recognize the salient fact that certain diseases and conditions were only curable, or at least permanently destroyed, by means of surgery.

Even to-day the majority are prejudiced against the surgical art, mostly because of fear and dread of the early hours of pain, and lastly from the financial consideration.

In the treatment of these cases don't resort to liniments, anodynes, either orally, by rectum, or per vagina; neither endermic injection of morphia nor any of the alkaloids of opium, for they afford only temporary relief and are very prone to create a drug habitué.

Don't leave the disease to nature, or think perhaps the climacteric will work some wonderful change, for you will certainly be deceived, as these patients gradually become worn out with pain, and the vigor of their constitutions which they formerly possessed gives way by reason of their inability to take exercise.

However, there remains to-day, from a medical standpoint, but one remedy which affords any possible hope of recognition in the treatment of this affection, and that is the injection of alcohol.

I suggest this as worthy of trial while temporizing or at least preparing your patient for the surgical work, which will undoubtedly become necessary in order to give relief.

Removal of whole of coccyx seems to me preferable to subcutaneous division of the attachments, because the former procedure removes all possible chance of the return of the disease, and but slightly increases the gravity of the operation.

By carefully separating the bone from all soft muscular and fibrous attachments, carrying the knife or scissors in close proximity to the bone, from above downward, and with volsella forcep lifting the lower segment upward and away from the bowel, dissect away all the remaining muscular attachments underneath upward as far as the coruna of the coccyx. This may be done with a curved blunt-pointed scissors; then disarticulate at junction with coccyx. There is seldom hemorrhage of any importance, as no vessels are encountered of sufficient size to require ligating. With removal of coccyx all muscular tension is relieved, and your patient experiences for the first time that long-looked-for absence from pain, and in a word says, she is well again.

So far as I know, removal of the coccyx is never followed by any unpleasant consequences.

Great care should be exercised, however, on the part of the operator else he might injure the bowel.

Every case has made an uninterrupted recovery, with marked improvement in general health, and entire cure of the coccyodynia.

In conclusion I ask you to recall the fact that medical literature is not replete on the subject of coccyodynia, that this paper relates to a subject difficult of investigation; hence I solicit your indulgence in criticism, and sincerely hope that a secret consciousness of error will inspire physicians to further their pursuit of knowledge along the study of this subject.

And it is to be hoped that the period is approaching when the wisdom of the medical profession will awaken to the fact of carefulness in diagnosis, and to this end should each and every one aspire, rather than allow the patient to drift aimlessly about, and exhibit the cheerless picture of a little wasted energy and time, on the part of the physician, to the end of correct diagnosis.

SURGICAL SUGGESTIONS

When acne of the back does not respond to treatment, try a few applications of long strokes with the Paquelin cautery. The results are often excellent.—*American Journal of Surgery.*

If a patient with acute gonorrhea is kept in bed on a restricted diet, the saving of time in the cure will amply repay him for the confinement.—*American Journal of Surgery.*

An intractable tuberculous cystitis that is not improved by silver nitrate most probably is associated with tuberculosis of the kidney, which causes reinfection.—*American Journal of Surgery.*

No operation for hemorrhoids should be done without a thorough examination of the heart and abdomen to discover etiologic obstructive conditions.—*American Journal of Surgery.*