sue, the granulation tissue having been replaced by scar tissue in the remainder. The condition of the wounds in the treated animals remained unaltered.

SUMMARY

Experimental results indicate that tethelin, the growth-controlling principle isolated from the anterior lobe of the pituitary body, exerts, when administered hypodermically to mice, a remarkably stimulating action on tissue repair, as expressed in the replacement of tissue lost during a preceding period of inanition or in the healing of granulating wounds.

CHRONIC URETHRITIS IN WOMEN

A NEW METHOD OF DIAGNOSIS AND TREATMENT IN OBSCURE URETHRAL PAIN

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Chronic urethritis in women is much more common than is generally recognized. The symptoms are not always typical, and may not be referred directly to the urethra; but when a woman complains persistently and consistently of symptoms in the region of the pelvis, the urethra should not be overlooked as a possible source of the trouble, especially if no other pathologic condition can be found.

The pathologic findings in chronic urethritis are variable. The urethra may occasionally be thickened throughout from infiltration, and can then be felt as a more or less firm cord by the vagina. Through the endoscope the mucosa may have a congested appearance and may be puffy and edematous and appear granular. The vessels may be enlarged in places and even exposed, and definite ulcerations found. The congested, puffy, granular picture is the one most frequently seen. It may be diffuse, involving the entire urethra, or it may be patchy or limited to one or both ends. There is often bleeding after instrumentation. In some cases there may be a purulent secretion in the urethra, and this secretion may be seen exuding from the gland openings. This has been the exception, however, in the cases which I have encountered.

Many of the cases of chronic urethritis in women are mistaken for cystitis, the diagnosis being made on symptoms alone; and without further investigation than the examination of a voided specimen, in which some pus cells are nearly always present, irrigations of the bladder are instituted without relief of the symptoms. Irritation from repeated catheterizations may set up a urethritis, and will certainly aggravate an already existing inflammation in the urethra. There may be a chronic urethritis as a sequel to a cystitis, and there may be a chronic cystitis or trigonitis accompanying it. In such cases treatment is usually directed to the bladder alone, whereas the urethra is often accountable for a great deal of pain and discomfort. In all chronic conditions of the lower urinary tract in women, attention should be given to the urethra as a possible source of at least a part of the symptoms. In cases of chronic cystitis I have often found that, by treating the urethra at the outset, the pain could often be relieved before the bladder condition was improved at all.

The most constant symptoms are frequent and painful urination, usually burning, and there may even be vesical tenesmus. All degrees of these symptoms are seen. In the severer cases there may be a more or less constant pain of throbbing character in the region of the urethra or vagina. Some patients will have sharp, lancinating pains in the urethra. Reflex pains may be present, referred to the vagina, uterus, coccyx, rectum, etc.

In many of the cases the etiologic factor is obscure. When there has been a preexisting cystitis or acute urethritis, or when urinary infection is present at the time of examination, the causation is clear. But the condition may develop without any preceding local symptoms and with no urinary infection demonstrable. Several years ago Hunner pointed out the fact that ureteritis and urethritis were not uncommonly found in women as sequelae to chronic infections elsewhere, as infected tonsils, nose and ear infections, etc. I have seen chronic urethritis a number of times in women who suffered from an enterocolitis, and also apparently secondary to a pyorrhea alveolaris. Infection from without must also be considered. The female urethra may constantly harbor all sorts of organisms, owing largely to the close proximity of the anus and vagina. Such organisms are nonpathogenic under ordinary conditions, but they may become pathogenic under various stimuli. The *Staphylococcus albus, aureus* and *citreus,* the streptococcus, the *Micrococcus catarrhalis,* the *Bacillus lactis aerogenes,* the pneumococcus, the *Bacillus pyocyaneus* and many others have been cultivated from the urethra. Irritation and trauma from intercourse or masturbation, congestion from menstruation, etc., may be sufficient to activate these organisms. In hot weather when the patient is perspiring, and not drinking much water, the urine may become concentrated and cause irritation which may end in urethritis.

Treatment in these cases is best carried out by direct application of silver nitrate to the mucosa through a cystoscope or vesical speculum. I use a 5 per cent. solution as a rule, but sometimes use as strong as 10 per cent., and have used a 20 per cent. solution once or twice over limited areas. The treatments should be repeated from every three to five days. Dilating the urethra with sounds or dilators, in addition to the other treatment, is often beneficial, and gentle massage along the urethra, while the dilator is in place, may help. In milder cases, instillations of one of the colloidal silver preparations, such as cargentos or argyrol, may be sufficient to give relief. Instillations of iodin crystals, 0.3 gm. in 30 c.c. of liquid petrolatum, following dilatation and massage, may also be used. The best results, I think, are obtained from the applications of the straight silver nitrate solutions.

About eighteen months ago[1] I reported a series of thirty-two cases of chronic urethritis. Since then I have had twenty more cases. Of these fifty-two patients, sixteen had a simple urethritis without any accompanying trouble or history of a cystitis or acute purulent urethritis. One patient also had a ureteritis; twenty-nine had either a preexisting cystitis or some form of chronic urinary infection, such as cystitis, trigonitis or pyelitis, at the time I saw them; two had incontinence due to relaxed vesical sphincters.

Five of these patients were sent to me for diagnosis alone, and two others stopped treatment before any

1. Shallenberger, W. F.: Some Diseases of the Female Urethra, read before the Fulton County Medical Society, Atlanta, Ga.

results were obtained. Of the remaining forty-five, thirty-nine have been cured, three are still under treatment and are improved, and the other three have been greatly relieved of their symptoms.

It usually requires from four to eight applications of the silver nitrate to effect a cure, though some patients require many more than this. It is obvious that, when the etiologic factor is a tonsillitis or some similar condition, this should also receive its full share of attention.

CASE 1.—A patient referred to me by Dr. McRae had suffered from a chronic urinary infection for ten or twelve years. At the time that I saw her she had a colon bacillus cystitis and left pyelitis. There was no stone in the left kidney, and both kidneys were functionating well. She suffered intensely with pain and burning in the bladder and urethra, and increased frequency of urination. During the time that she had had the infection she had been treated by at least half a dozen different physicians. The bladder had been irrigated with all the different solutions, retention catheters had been tried, and all the urinary antiseptics had been used with no results, and during this time the urethra had never been touched. I at once directed my attention to the urethra, and after five or six treatments the pain was almost completely relieved. The pyelitis and cystitis are still present, for I have been unable to clear up the infection; but the pain can be controlled by treatments of the urethra. The patient is very large and fat, and objects strenuously to ureteral catheterization; therefore I was forced to abandon pelvic lavage, which I tried a few times in an effort to clear up the infection on the left side. She has been coming to me off and on for over two and a half years. If she stays away for any length of time the pain and burning comes back and she suffers as much as ever. But a few more treatments of the urethra soon relieve her. As long as the infection continues in the left pelvis and the bladder, she will have this urethritis. The important thing in this case is the fact that the seat of the pain seems to be entirely in the urethra, and the pain can be controlled by urethral treatments.

CASE 2.—Another patient had very severe attacks with the bladder, which necessitated the use of morphin to give relief. She had had the bladder irrigated for several months with no results. This patient was completely relieved by eight treatments with silver nitrate, and has remained well during the two and a half years since the last treatment.

The only patient whom I have treated and have been unable to relieve by the usual means as given above is the one with whom I worked out the new method that I wish to report. The method is that of nerve-blocking of the urethra.

CASE 3.—This patient was referred to me by Dr. McRae in October, 1913. She then had typical attacks of Dietl's crises with irritability of the bladder and pains in the urethra. There was no urinary infection and no stone. A collargol pyelograph showed a definite kink in the left ureter. I did a nephropexy, and the Dietl's crises were relieved, but not the bladder irritability and urethral pain. In spite of everything that I tried, this continued and the patient suffered intensely at times. Instillations of cocain and novocain solutions into the urethra always gave partial temporary relief; therefore I felt that it was the seat of the trouble. I finally tried blocking off the urethra by infiltrating the paraurethral tissue with a 1 per cent. novocain solution. This gave complete relief which lasted nearly twenty-four hours. I then injected alcohol, 60 per cent., after first infiltrating the tissue with novocain. The end-result was good and the patient remained comparatively easy for about two weeks, but the pain at the time of the injection was very severe in spite of the preliminary novocain infiltration. Therefore, I tried a solution of the novocain, 0.3 per cent., with quinin and urea hydrochlorid, 0.5 per cent., which gave excellent results. The patient has been more or less comfortable ever since (nearly three months). There have been slight pain and discomfort occasionally, but never any of the severe attacks like those which she had had before, and she will go for days without any symptoms whatever. I have also used this method in Case 1, and so far the relief has been complete. It has been only about a week, however, and so I cannot tell how permanent the result will be with her.

Aside from a means of giving relief in these intractable cases, this method affords a means of diagnosis in obscure cases of urethral pain, for, if we get cessation of pain by blocking off the urethra, we can be reasonably certain that it is the seat of the trouble. It could likewise be used to lessen the pain in cystoscopic examinations in patients in whom the urethra was sensitive and tender.

In conclusion I urge that the female urethra be given more attention as the possible seat of the trouble, especially in cases of obscure pelvic pain, and I wish to emphasize the importance of chronic urethritis as the cause of symptoms in many cases in which it has often been overlooked. I also wish to suggest nerve-blocking of the urethra in intractable cases, not only for the relief that may possibly be given, but also as a means of diagnosis.

THEORIES OF THE ETIOLOGY OF PERNICIOUS ANEMIA*

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The etiology of pernicious anemia belongs to that pleasant group of subjects which are always agreeable to discuss because our ignorance concerning them is so extensive that it is very easy to have a great deal to say about them. Indeed, when one considers the enormous amount that has been written relating to this disease and the comparatively small kernel of truth which it contains, a certain saying of Goethe's seems particularly appropriate:

> Denn eben wo Begriffe fehlen,
> Da stellt ein Wort zur rechten Zeit sich ein.[1]

During the past five years, for various reasons, among others the wider resort to splenectomy and transfusion as measures of treatment, interest in the disease has been greatly stimulated, and there is real difficulty in determining which topics to select for discussion. I must therefore at once disclaim any intention of attempting completeness in what I have to say, and purpose simply to present briefly some of the views which lately have been developed and which seem especially significant.

Even the most casual allusion to the subject, however, is hardly reasonable without a reference to the changes we are tending to adopt in our conception of the different types of anemias, owing to the somewhat clearer insight we are gaining into their nature, and a comprehension of this altered point of view is necessary in order to understand the relation which pernicious anemia is now believed to bear to the other forms. Even at this date the difficulties in attempting to establish a rational plan of classification are very great, because some of the fundamental facts needed are still lacking, and because we are not altogether certain as to what are the important and basic criteria

* From the Laboratory of Clinical Pathology, Department of Medicine, Columbia University, College of Physicians and Surgeons.
* Read before the Section on Medicine, New York Academy of Medicine, Jan. 18, 1916.
1. "When ideas are lacking, words are easily used to replace them."