THE ENDOSCOPIC TREATMENT OF NOCTURNAL POLLUTIONS*

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With the introduction of a new procedure for the purpose of examination and treatment, there occurs of necessity a period of time before its recognition becomes general and its utility established. After this neophytic period has been successfully passed and the new procedure has established its worth and the medical profession has accepted its new aid, it becomes incumbent on those interested to separate the component parts and special fields of utility of the newcomer and to study in such smaller groups the various advantages and finer details, so that in the end the composite whole stands out the more clearly by reason of the sharp details of its individual features.

This is true at present of the value and use of the endoscope, now securely established as to its utility in examination and treatment, and it behooves us, the urologists, to group the cases, such as chronic posterior urethritis, sexual neuroses and abnormalities, polyps and neoplasms, diverticula, chancres, chancroids and herpes, etc., so as to allow of separate intensive study and analysis, by means of which we may hope to classify the findings, to establish the pathology, and to perfect the treatment by the correlated results.

With this in view I have endeavored to present here a brief survey of my experience in handling cases of nocturnal pollutions by means of the endoscope.

In speaking of nocturnal pollutions or emissions, the question always arises: What constitutes a digression from the normal? This is purely an academic question on which many varying views are held. Suffice it, at this time, to state that I am considering the condition a pathologic one only (*a*), when the pollutions occur more often than twice a week over a period of two months or more, especially when they occur on succeeding nights or when twice or more during one night, or (*b*), when the pollutions leave the patient mentally depressed or physically fatigued during the morning of the succeeding day. I feel that this is a most generous limit.

It has been my universal experience in handling these cases to find, on endoscopic examination of the posterior urethra, varying degrees of pathologic changes in the walls either of the urethra, or more frequently of the colliculus itself.

At times the walls of the posterior urethra are but slightly excoriated with areas or streaks of a raw redness, often covered with superficial granulations that bleed on touch. This comparatively mild irritative reaction is less frequently seen than a general sodden engorgement of the walls, which appear mossy, dark red, redundant, and fold into the end of the urethroscope. Twice I have seen a general varicose condition, which one might call hemorrhoidal, in which the turgescence of the vessels caused the walls to appear actually blue—a venous stasis.

Even more pronounced changes are found involving the colliculus, which is, likewise, the most frequent point diseased. It is found enlarged to double its size, hyperemic, succulent, and especially tender to the touch. At times it has a raspberry appearance, covered with gross granulations; at other times an exu-

date covers all or part of it. Actual ulceration, by which I mean a localized circumscribed area of erosion, though rare, is occasionally seen. Polyps, retention cysts of either the utricle, the ejaculatory or prostatic duct orifices, have been recorded. And here let me call attention to a condition rather often seen, whose significance I know not, nor have I seen reference to it elsewhere, and that is that in some cases one sees on the colliculus smaller areas of darker red tissue which appear to a certain extent translucent, and you seem to see deeper into the tissue; these areas are flush with the surface but not covered with the normal mucous membrane; they are not ulcerations and have no exudate. They are especially resistant to cauterization and often show remarkably rapid changes in growth. From what tissue I have been able to study histologically, these areas appear to be formed of glandular hyperplasia, and whether or not they have any connection with the occurrence of subjective symptoms I have not, as yet, been able to prove to my complete satisfaction. The question of course immediately arises, Are these marked changes, found in the posterior urethra on endoscopic examination in cases of frequent nocturnal pollutions, the cause or the effect of the emissions?

Sexual function, like other physiologic functions during the period of adolescence, grows with the excessive use of it, and when we search the histories of these cases it is rare indeed that we are not able to find some antecedent, in the form of either a sexual misdemeanor or some irritative infection, to account for the urethroscopic findings and one that will bear on the etiology of the condition.

Twenty-one per cent. of my cases are in a class in which there has been no antecedent history of any infectious urethral disease. Practically every one of these patients has at some period of his life been an excessive masturbator. The cases of this group illustrate repeatedly the gradual creation of a congestion of the sexual apparatus through repeated insults, until permanent pathologic changes, such as cited above, have developed. Practically every one confessed to having performed the act every day over a period of one or more years, while some have been such chronic habitués that they have repeated it as long as erection was possible.

To be sure, in these non-infectious cases, while the pollutions are the effect of the pathologic changes in the posterior urethra, at the same time, they are both indirectly the effect of an excessive libido, and follow some form of excessive sexual indulgence as an antecedent cause. But it is through the increasing and prolonged stimulation of the genital nerves and especially the nerves to the blood-vessels, combined with the mechanical insults, that a static catarrhal condition develops. The described proliferative pathologic processes develop and spread, and with this there appears the common source for both the pollutions and the continuance of an excessive sexual appetite. The sexual misdemeanor, the result of the unsatisfied libido, is the cause of the pathologic changes in their beginning, but when once established, these changes in turn artificially stimulate the libido and either become overpowering to even the strongest will-power, or, if the habit is actually stopped, manifest themselves in the form of frequent seminal emissions on the slightest provocation. Allow me to cite such a case:

R. F. started masturbation early in life and practiced it regularly twice a day, night and morning, for

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three years. He then desisted and emissions began and soon increased in frequency, until they now occur always twice a week and often to such a degree that, as during the last week, he had five in three consecutive nights. The mildest social pleasures are associated with ejaculation. Even a rub-down after a boxing bout in the gymnasium brings on an erection and a subsequent ejaculation. He never had a urethritis and sexual intercourse is impossible on account of premature ejaculation. On endoscopy the colliculus was found to be so swollen that only part of it could be seen at a time. It was dark red and its surface roughened and appeared to be covered with fine granulations. The urethral walls were markedly engorged. He received three applications of silver nitrate at weekly intervals, and the pollutions diminished in frequency to once in two weeks, and after two months' rest and observation with the continuance of such improvement the patient was discharged from treatment.

Another case with somewhat different history is that of J. C., aged 17, who masturbated in excess for several years, often repeating the orgasm three or more times in immediate succession. He stopped the practice eighteen months ago. At first pollutions would occur once in a month and have gradually increased in frequency until now they occur five times a week, often on succeeding nights, and leave the patient in the morning fatigued and with a dull pain across the small of the back. He thinks that once he noticed blood in the seminal ejaculation. He has never attempted intercourse. On endoscopy there was found on the tip of the engorged colliculus one of the areas of glandular hyperplasia, to which I referred above, appearing as a soft angiomatous spot, of a dark purple color, and a little to the left of the mid-line. It was severely cauterized. After three applications of the cautery by means of the endoscope at weekly intervals the patient reported that he had had no emissions in the passed two weeks and was feeling perfectly well. His posterior urethra was normal and he was discharged.

I have attempted to show how such misdemeanors cause an atonic congestion of the delicate tissues of the erectile colliculus and of the entire prostatic region of the urethra. When once such a condition is established, this pathologic area forms but one segment of a vicious sexual cycle. Should the habit be broken off, as most of these patients attempt to break it, when with years discretion develops, the cycle continues, that is, an irritated and congested posterior urethra, giving stimuli to the sexual centers, causing erection, then more stimuli and ejaculation. The one place to attack and break such a cycle is to cure the region of primary injury in the posterior urethra.

A second and larger group of patients (42.8 per cent.) have given a history of an antecedent gonorrheal urethritis. Although possibly it is not quite fair to group all these infectious cases together, simply because of the past history, yet the changes that one sees in the posterior urethra under such conditions can be told only with difficulty from those of the previous group, and it is often the accuracy of the history as given that makes this type of case to be classified as a postgonorrheal complication. Exudate in the posterior urethra in my experience speaks for infection and is the only sure sign that is telltale of a previous specific urethritis. Often the history is as definite as that of W. H. D., who acquired his initial specific urethritis in February, 1913. It became posterior and was

complicated by a right-sided epididymitis. In May the last traces of the discharge disappeared. In August the increasing frequency of nocturnal pollutions attracted his attention for, as before he would have only one in every three or four weeks, since the subsidence of his urethritis, they have gradually increased until now he has three or four a week, often twice a night. Insomnia, lassitude, pains in the hips and back are troublesome subjective symptoms. The urethroscope demonstrated an exquisitely tender colliculus, two or three times normal in size, thickened, engorged, dull and tense, non-ulcerated. Five endoscopic applications of silver nitrate, with lavage of the utricle, at weekly intervals gave prompt results and the patient was given one month's rest. At the end of that period he was sleeping better and had had but one pollution during the month; the pains were all gone. A second report four months later showed that he was perfectly well and normal in all respects.

Three of my patients presented polyps of the posterior urethra. One denied having had gonorrhea, in the second case it was not stated, while the third was complicated by a chronic posterior urethritis. The pollutions have been cured in all by the removal of the polyp and in the third by the subsequent cure of the urethritis.

Local treatment of these pathologic changes has been carried on through an open-air endoscope. Various solutions have been tried out, including zinc and copper sulphate, tannin, argyrol, protargol, iodine, trichloroacetic acid, and various combinations that have been found efficacious in the treatment of lesion of the mucous membrane elsewhere about the body. When all is said and you really want work done, however, there is but one universally useful preparation, and invariably, one falls back on different strengths of silver nitrate. I find the 10, 20 and 50 per cent. solutions the best for superficial changes and use the crystal only when I want actually to destroy tissue. One should always remember, when using solutions in the posterior urethra, that after applying the medicament and giving it the necessary time to act, the field of operation should be completely dried with a cotton swab, and if this precaution be observed the patient is spared a great deal of discomfort. Electricity in its various forms has not in my hands given any satisfactory results.

In offering this brief survey it has not been my purpose to convey the idea that every case of frequent nocturnal pollutions is promptly and permanently cured by endoscopic treatment. My hearers are too familiar with the problems of our work to believe such a thing were it even intended. That remarkably beneficial results are obtainable in decidedly more than the majority of cases, however, has been my experience. I know of no distinguishing feature of any individual patient, or history, whereby one can prophesy that this patient he can cure and that one not, although it seems that often the most brilliant results are obtained in the most aggravated cases. Another feature is worthy of remark and that is that frequently the greatest benefit is demonstrated a month or more after all treatment is stopped. This latter feature has rendered it impossible for me to tabulate my results accurately, where a large number of the patients have been derived from dispensary practice with the usual inability to trace the subsequent history of such patients satisfactorily at an interval of six months or a year or more, after discharge. Those who have been

under private observation, however, and those who have responded to inquiry, or have returned for observation, make me sanguine that the results in a large majority have been most happy.

Professional Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRs. RYTINA AND RANDALL

DR. H. L. LEITER, Syracuse, N. Y.: In cases with doubtful history if bacteriologic and serologic examinations are made, we will occasionally obtain favorable results. With regard to cauterization of the posterior urethra, I think we should use some discrimination as to what cautery we use. If the whole lining of the prostatic urethra is affected, the solutions of silver nitrate may be effective, but when there are small isolated spots, in my experience, fulguration has worked very well. The photomicrograph of the sinus peculiaris illustrates that very well. One could not expect a silver-nitrate solution to get down into that sinus very far, nor the silver stick, but one could put the fulguration wire down there and perhaps the treatment would be more efficacious. I have heard of accidents with fulguration in the prostatic urethra, but in my experience I have had none. Have any of the other members had any accidents with it? Has Dr. Rytina found any process other than inflammatory?

DR. J. D. BARNEY, Boston: Dr. Rytina has made a valuable contribution to our knowledge of the organs at the neck of the bladder. The pictures which he showed were strikingly like those of the seminal vesicle, the ampulla of the vas, and the prostate. When we realize how very complex and how minute are the acini in which a gonorrheal infection can lodge, we will find easier the explanation of the difficulties that we have in curing our cases of chronic gonorrhea. When we realize that these regions resemble a sponge, and how difficult it is to get the sand out of a new sponge, we will understand that long-continued treatment by silver nitrate or massage or fulguration is the only way in which such patients can be cured. The verumontanum is closely similar in structure to the vesicles and the ampulla of the vas, as I have been able to show by pathologic studies of these organs.

DR. F. W. ROBBINS, Detroit: Removal of the verumontanum appeals to us as being radical; we do not hear very much about the dangers that may result from it. Dr. Rytina spoke of the blood-supply of the verumontanum. I have had one or two experiences that assured me that the blood-supply is a factor that should be taken into consideration, and we must also remember that these urethras are septic and manipulation may lead to epididymitis. I had one case in which epididymitis followed removal of the verumontanum. A patient had been suffering much with various nervous phenomena that I attributed to the possible trouble with the verumontanum. The man had had a suprapubic cystotomy (the surgeon thereby hoping to get at the condition through the bladder) as well as milder forms of treatment at many hands. This man had a verumontanum that through the urethroscope appeared to be large, pale and leathery, much like the appearance of the vagina of a prostitute, that has continually been burned with mercuric chlorid solution. This man had as a result of the various diseases an atrophied testis on one side. When I saw the veru, thinking that I could do nothing further with it, I cut it off with a small pair of scissors. Following its removal he went home in good condition, but the next day I found a large amount of blood in his bladder. After breaking up the clots with a large sound, they were readily evacuated. The interesting point, to my mind, was not that he had, following the traumatism, a slight epididymitis on the healthy side, but his neurotic condition, when he felt that the doctor had done the worst thing possible for him in making him absolutely sterile by producing an epididymitis on his only healthy side, the other testis being valueless. The amount of hemorrhage after this opera-

tion was a matter of considerable moment, and if we can accomplish the same purpose with the high-frequency current as we can with a cutting instrument, it will be an advantage.

DR. HERMAN L. KRETSCHMER, Chicago: It is not quite clear to me just when we should excise or remove these vera, and when we should be satisfied with local applications. Will Dr. Rytina tell of the condition of the prostate in the patient with infected verumontanum?

DR. LOUIS E. SCHMIDT, Chicago: These chronically infected utricles persist for a long time. Occasionally during the course of such a chronic urethral infection of the adnexa one sees a so-called prostatic abscess arise. I believe that a great many so-called prostatic abscesses are nothing more nor less than pseudo-abscesses of the utricles. These abscesses may reach an enormous size, the fluctuation can easily be felt by rectum, and if, in these cases, we watch the increase of the fluctuating area, we will note that the fluctuation is always in the median line. I am quite certain that these pseudo-abscesses of the utricles are frequently mistaken for prostatic abscesses. Therefore I think it is well always to examine any chronic posterior urethral infection and to treat these conditions, because the possibility of abscess formation is constantly present.

DR. E. L. KEYES, JR., New York: Dr. Rytina has shown us pathologic specimens exhibiting changes in the utricle. He would be the first to say that he could show us similar changes in other urethral glands. The beauty of the dilatation treatment of chronic urethritis, as contrasted with too much dependence on treatment through the urethroscope, is that the effect of pressure extended over a considerable portion or over the whole urethra is likely to do more good in most instances of chronic urethritis than the especial attention to one set of glands which happen to be more visibly diseased than others. With regard to the remarks of Dr. Schmidt on prostatic abscess, the pathologic investigations of the late Dr. Samuel Alexander, which I have been able to verify, are calculated to show that, probably in the great majority of instances, prostatic abscess begins as a miliary suppurative throughout one or other of the lateral lobes of the prostate itself.

DR. JOHN A. HAWKINS, Pittsburgh: Dr. Rytina spoke of the possibility of epididymitis following applications to the verumontanum. In my experience epididymitis rarely follows treatment in the neighborhood of the verumontanum. I have never seen this complication. Will not treatment of this body accomplish as much as removal? The verumontanum is a structure that was put there for a great deal more perhaps than the appendix was put in the abdomen. What direction does the semen take and what prevents the ejaculatory ducts from becoming stenosed after the operation? In 1901 I accidentally removed the top of an enlarged verumontanum. How much of it, I do not know. It did no harm. I have, however, recently doubted the harmlessness of the procedure of removing the entire verumontanum.

DR. FREDERICK R. CHARLTON, Indianapolis: Does Dr. Rytina think he accomplishes anything more than a curetting of the verumontanum, or does he believe that he gets the entire structure? It seems to me, as to Dr. Barney, that we are on the verge of sweeping into a specialist's fad. I cannot for the life of me believe that such enormous importance attaches to the verumontanum alone as it seems to have been given during the last year or two. I have felt that we have been neglecting, perhaps only transiently, the prostate—an admittedly important organ or gland capable of infinite damage. Once thoroughly infected, I question whether it is ever completely restored. I do not know whether anyone is really working hard on chronic infectious prostatitis, and I am much afraid that in the attention we are giving to this almost insignificant structure, we are going to grasp at a shadow and miss the substance of things in this region.

DR. ROBERT H. HERBST, Chicago: I cannot reconcile myself to the belief that the verumontanum is responsible for all that is charged to it. I do agree that we frequently see pathologic changes occurring in this organ, but I am thor-

oughly convinced that, in most instances, these are provoked by discharges from the seminal vesicles. We know that the gonococcus is the common offender in the male urethra and also how frequently this infection spreads into the seminal vesicles. It is the constant discharge of pus from the genital tract which I think is responsible for much of the so-called verumontanum disease. Furthermore, if in these cases we give the attention to the seminal vesicles which they deserve, we will see much of the trouble in the verumontanum disappear without further treatment. I believe that the disturbing element in these cases is primarily located in the seminal vesicles.

DR. ALEXANDER RANDALL, Philadelphia: I call attention to the truly unprecedented and noteworthy work of Dr. Rytina. Thorough search of the literature, last year, enabled me to find but two cursory descriptions of this important structure, the one by Burckhardt, and the other by Delbet, in Poirier and Charpy, *Traité d'Anatomie*. Dr. Rytina has given a most thorough description of the histology and pathology of the colliculus. The glandular hyperplasia referred to I have seen demonstrated a number of times. Often there is a most extensive hypertrophy with marked infolding of the walls of the acini; at other times the acini are distended with secretion; a third type is that of sclerosis and extensive growth of connective tissue. I feel that one must be careful and should try all other forms of treatment before having recourse to such a radical removal as Dr. Rytina has described, but that this operation has its appointed place. That truly remarkable results can be obtained thereby in carefully selected cases, has been proved to my own satisfaction in the few cases in which I have considered removal to be indicated.

DR. A. G. RYTINA, Baltimore: The microscopic picture of the sinus pocularis somewhat resembles the structure of the normal seminal vesicles, as Dr. Barney pointed out. In the beginning I was in doubt whether to regard these invagination processes as true glands, but, as the lining consists of many layers of squamous epithelium, I came to the conclusion they were not glands, but they do have a secreting surface. Answering Dr. Kretschmer, the patient who had the infected verumontanum had also a chronic prostatitis. When is the operation indicated? I have only recently begun this work and am not prepared to answer this question with authority. We are carrying out extensive researches on operated and necropsy specimens in the human being and perhaps, later, I shall be able to answer that question. Dr. Keyes brought out an important point, namely, the dilatation treatment of the posterior urethra. In the future, perhaps, a therapeutic measure will be to massage the verumontanum through an endoscopic tube. I reported one case of seminal emissions in a patient who had a highly inflamed verumontanum. I made repeated applications without relief. Accidentally I pressed the endoscopic tube against the verumontanum and quite a gush of pus came out. I then injected the utricle several times with the result that the emissions and inflammation disappeared. He had a deep infection which, traveling up, infected the surface of the verumontanum. Probably we will learn later that a highly inflamed verumontanum indicates infection of the deeper structures, just as inflammation about the ureteric mouth causes suspicion of tuberculosis of the kidney. Dr. Hawkins said epididymitis was rare following applications to the verumontanum. I am sure that anybody who has made many applications to the verumontanum has seen more than one case of epididymitis resulting. Do I get the whole verumontanum? It is taken out as thoroughly as can possibly be hoped. The instrument acts as a curved knife and the verumontanum comes out almost intact. Just a very little piece at the base persists after the operation. With Dr. Herbst, I do not believe that the verumontanum causes all the symptoms accredited to it. I am carrying out this work to prove what effect the verumontanum has in so many of these sexual, urinary and referred disturbances. I believe we ascribe too much importance to it as a cause of so many diverse symptoms, and I hope to prove whether or not it is the true causative factor.

ANARTHRIA DUE TO SYPHILIS

REPORT OF TWO CASES

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Of all the forms of neurologic syphilis, the one giving rise to the most sudden, the most profound and startling display of symptoms is gummatous meningitis. Existing throughout the central neural axis, the gravest manifestations naturally arise from interruption of nerve paths in the cerebrum.

Coincident with the marked exudate of albumin and cells evident in the cerebrospinal fluid of such cases, there must be a similar perivascular exudate in the substance of the brain itself, producing, in certain cases, an ischemia of certain foci. Any cranial nerve may be suddenly put out of commission, and as a result the patient may exhibit some form of heterophoria, ptosis, single or double choked disk, unilateral or bilateral deafness, facial sensory or motor disturbances or respiratory difficulty.

Still more bewildering are the symptoms following the blocking of the circulation in the subcortical vessels supplying the coordinating paths. An intensely interesting phenomenon results when the coordinating paths in the lenticular zone are interrupted. This zone includes the lenticular and caudate nuclei, the internal and external capsules, the island of Reil, the motor cortex and the fibers between them.

When this area is the site of disease, the resultant symptom is designated by Marie anarthria, and is the simple motor aphasia of the older writers. There is no paralysis of the vocal organs, but the patient simply does not remember how to speak. A lesion so isolated as to produce this condition alone could hardly be expected in so general an infection as syphilis, but in the following cases this was the most remarkable symptom.

CASE REPORTS

CASE 1.—*History*.—A Russian Jewess, aged 35, was brought to the Neurological Institute, March 23, 1914, because her friends thought she was "losing her mind." She apparently did not understand what was said to her, and they could not understand her when she attempted to speak. In fact, during the past week she had become wild and seemed not to know what she was doing. She attempted on one occasion to jump from the window.

She had been in this country four months and during that time she had spoken with great difficulty and complained of severe pains in her head and weakness of her right leg and arm. During the last day on board ship, four months previously, she asked for a glass of water. When it was brought it was observed that she was unable to hold the glass in her right hand and, furthermore, that any attempt at speech failed utterly. Previous to this she had made no complaint of feeling ill. This condition lasted over night and she was again able to speak the following morning. The patient was taken to her sister's house and the right-sided weakness improved slightly.

Suddenly four weeks later she again became completely unable to speak for three consecutive days, although there was no paralysis of lips or tongue. From that time until the date of admission to the hospital her speech was badly disturbed so that it was with difficulty that she made herself understood. This state gradually deteriorated so that at the time she was first seen at the hospital she was only able to utter curious guttural sounds which her sister and other native Russians said bore no resemblance to any Yiddish words.