

THE RÔLE OF THE PREPUCE IN DISEASE

BY GUSTAV F. BOEHM, JR., M.D.

*Neurologist and Surgeon, West Side German Dispensary and Hospital; Clinical Assistant, Neurological Institute;
Clinical Assistant, Department of Neurology,
Vanderbilt Clinic, etc.*

New York

An old topic, but one which is of great importance, is the question of the relationship to bodily health of that much operated upon portion of the male anatomy, the prepuce. To it have been attributed a legion of nervous disorders; it is accused of being an accomplice to the Neisserian diplococcus, the Ducrey organism, and that doughty warrior, the treponema pallida; gastroenteric conditions are laid at its door; in fact, if the literature be carefully gone over, one marvels at the malignant powers of this little fold of skin and mucous membrane. The surgeon and the obstetrician, the pediatricist and the neurologist, and, last but not least, the general practitioner seize upon it as the cause of a myriad of bodily ills. Theology, too, has for centuries attacked it, both for ceremonial as well as for hygienic reasons.

It is the purpose of this paper to attempt to reach some fair conclusions as to what part this mucocutaneous fold really plays in the pathogenesis of disease, and to call for more conservative methods of treatment than circumcision.

In preputial conditions the sole considerations seem to be (1) too long a prepuce, (2) too narrow a preputial orifice, and (3) other malformations. These are the usual anomalies for which operation is advised. The hygienist then steps in and claims that for cleanliness (?) sake, and to prevent (?) venereal disease, it must be removed. The neurologist demands its removal, because it causes (?) chorea, epilepsy, mental conditions, etc., in which cry he is ably assisted by the pediatricist.

The subject will be approached in the following manner:

1. The normal anatomy and histology of the prepuce and glans.
2. The physiology of the prepuce.
3. Pathological preputial conditions classified.
4. The bearing of the prepuce on local and systemic conditions.
5. The rational treatment of the prepuce.
1. The normal anatomy of the prepuce.

The prepuce is a more or less cylindrical fold of mucocutaneous membrane which surrounds the glans penis. Its outer surface is composed of epidermis similar to the outer covering of the penis.

Its inner surface is still composed of epithelium, but of a type less keratinized, and is moist at all times, because of the secretion of its glands and of the presence of a certain amount of smegma. Its deeper structure is composed of connective tissue and some involuntary muscle fibers. It is markedly elastic and extensible, and readily adopts itself to the various conditions of the copulative organ.

The blood supply in the young is scanty, but in later life is abundant. The nerve supply is free, and here comes the first difference of the prepuce from skin elsewhere. Throughout its whole surface are distributed numerous sensory end organs, so highly specialized that they have been aptly called "the genital corpuscles" by Krause. Besides these there are a considerable number of Paccinian corpuscles to be found.

Nor is this the only point where these special end organs are to be found. They are present over the entire surface of the glans penis.

2. The Physiology of the prepuce and glans penis.

Nature, as a rule, makes few errors—and for a certainty she did not err in providing man with a prepuce. The ultimate object of all animal existence is, after all, procreation, the propagation of its own species. True, we may do other things; but, after all, the primal law of man is to "be fruitful," to which civilization has added the duty of educating his offspring to better standards than his own. And in procreation the prepuce plays an executive part.

We have seen that the prepuce forms a covering for the glans; we have seen that its inner surface is moist, as is the glans; that its inner surface is studded with special sensory end organs, as is the glans. If we analyze these factors we will find, 1, that the prepuce is a protector of the glans, and, 2, that it heightens the sensibilities during the act of coition, and thus assists in the sexual act.

During the flaccid state of the organ the glans is completely covered by the prepuce. It protects the delicate epidermis of the glans from injury; it prevents continual irritation of the genital corpuscles.

In the erectile state of the penis the glans is entirely exposed, the foreskin vanishes, but in such a way that an area of mucous membrane, equal in size to the depth of the prepuce, with its numerous specialized nerve endings, is added directly to the surface of the glans. The physiological result is heightened sexual stimulation. Remove this surface, and just so much specialized tissue is removed from taking part in the act.

Physiologically, then, the prepuce has definite functions—protective and sexual—and these should not be forgotten when one deals with it as a factor in disease.

3. Pathological preputial conditions.

These can be classified as follows:

- (a) Excessive length of prepuce.
- (b) Short, or absent, prepuce.
- (c) Phimosis.
- (d) Preputial adhesions.
- (e) New growths.
- (f) Venereal disease.
 - (1) Verrucae (gonorrheal).
 - (2) Chancroids.
 - (3) Chancre.

It is not the purpose of this paper to enter into the discussion of venereal or dermatological conditions. They and new growths will only be spoken of here as part of the general topic.

4. The bearing of the prepuce on local and systemic conditions.

(a) Local conditions.

A spasm of public interest in the prepuce has during the last five or ten years had its sway. Because the medical profession has laid so much stress upon its importance, parents have come to think that its removal is essential to the welfare of the child—and in many instances the profession has not been loath to cry “operation” on the slightest pretext.

And not the least of these has been “local hygiene.” The story is almost invariably the same. Remove the prepuce, and smegma, etc., will not gather, disease is prevented. Absolute absurdity! In the first place, the ordinary human being should take an occasional bath—and a parent can teach a child that the foreskin is to be retracted during the bath and excess smegma removed. The average mother teaches her daughter proper vaginal hygiene to prevent vaginitis, etc. The father can do a similar thing for his son by instructing him in his personal hygiene.

Again, the removal of the prepuce prevents, or helps prevent, venereal disease. This is a constant tale on the part of young libertines who enter our offices. We did not know that the prepuce normally harbored the gonococcus after infected intercourse. Of course, it is present here, as part of the surface exposed; but as most gonorrheas in the male seem to be in the urethra, it would appear that they find their way there during the act of coition.

Luetic infection must have an atrium, a point of entrance; and surely an unbroken mucous membrane of a prepuce is no better point for entrance than an unbroken mucous membrane of a glans unprotected by its covering.

This, then, disposes of the hygienic myth which advocates circumcision for local prophylaxis.

The remaining local processes will be considered under the general treatment.

Systemic conditions:

The pediatricist, the neurologist and the general practitioner have pointed out the value of circumcision in certain nervous and mental conditions, but have too frequently argued "ergo hoc, propter hoc." The gamut of neurological diseases said to be due to the prepuce runs from chorea to insanity, from epilepsy to homicidal mania.

The sole effect the preputial adhesions or phimosis can have is a reflex one—and to be of great effect the nervous system of the individual affected must be below par. True, choreiform movements, epileptiform convulsions, masturbation and other symptoms of disease may be aggravated by an adherent prepuce or a phimosis, but only if the patient be of a psychopathic constitution. One frequently sees cases in which, with marked malformation, the patient is not aware of his abnormalities, and never has a disturbance at all simulating nervous disease.

In children it is not unusual to see masturbatory movements. If the prepuce be at all redundant, or if there be a tendency to phimosis present, they are at once declared to be due to these conditions. Atwood and Clark have described movements, rocking, finger sucking, leg friction, etc., and have called attention to their significance as an evidence of nervous disease, or psychopathic constitution. Must, therefore, similar movements, convulsions, etc., be attributed to preputial abnormalities? It would seem wisest to investigate carefully the reflex causes for these seizures, it is true; but the practitioner should not forget that the true underlying cause, the insufficient or abnormal psychic makeup, must also be investigated.

Nocturnal enuresis is often attributed to abnormalities of the prepuce. Modern investigation into the field of the psychopathic point out well that this condition is frequently due to hysteria, to epilepsy, etc., and not to the too frequently assigned cause. After investigating all other causes than preputial conditions for this annoying symptom, one will find that it can but rarely be attributed thereto.

One can investigate other instances of the detrimental effect of these preputial conditions, and one is astonished to find, on analysis, how small a part it really plays in disease processes and how complacently they have been attributed to it.

The Rational Treatment of the Prepuce.

Three words suffice for the treatment of the normal prepuce—"Leave it alone." It has its purpose to fulfil; it causes no trouble; here "judicious neglect" is to be the treatment. Cleanliness, of

course, should be taught. If illicit intercourse is part of the routine of our patient's life, he should be cautioned or instructed in prophylaxis against venereal disease.

Preputial adhesions should be broken up according to approved methods. Circumcision is unnecessary. Again the advice, so far as the prepuce is concerned, is "Leave it alone."

For the remaining abnormalities the operator should employ conservative methods. The glans should be liberated from the prepuce. Remove only as much prepuce as is essential to secure complete retractibility from the glans, and no more.

If these methods be followed out the physiologic mean will be the result, and, as a fact, the reflex irritation of an unprotected glans will be avoided.

Conclusions.

1. The prepuce has a definite, physiologic purpose.
2. It is not the cause of all the ills to which its abnormalities are attributed.
3. It should not be removed for so called prophylactic or hygienic reasons.
4. When necessary to operate upon it, do so conservatively.