CHAPTER II

PHIMOSIS AND CIRCUMCISION

Preputial Deformities.—Practically, the deformities of the foreskin (phimosis and atresia of the orifice excepted) are unimportant. The prepuce is sometimes bifid, enlarged into a pouch, redundant, projecting 1 cm. or more beyond the apex of the glans, or only rudimentary from arrest of development. Between the latter two limits it may be of any length, covering more or less of the glans. When the prepuce is deficient, the epithelium of the uncovered glans penis becomes hard and tough, more nearly resembling ordinary cuticle. Under these circumstances the sensibility of the part is diminished, but at the same time it is rendered less liable to become excoriated or inflamed. Hence, absence of the prepuce is not to be regretted, and the operation for its restoration (posthioplasty) need not be described. Dieffenbach performed it once on account of neuralgia of the glans penis.

PHIMOSIS

Phimosis (*φιμοω, I bind*) exists where the orifice of the prepuce is so small that the glans penis cannot be uncovered. The orifice of the prepuce may be congenitally absent (atresia preputii). Phimosis is congenital or acquired, simple or inflammatory, or complicated by other diseases or by adhesions.

In young children preputial redundancy is so common that it may be considered normal. The foreskin of an infant is developed out of all proportion to the rest of the penis, taking the member after puberty as a standard of comparison. This long prepuce is often a source of anxiety to young mothers, who fear that the condition may remain permanent. They may be assured that it will right itself as the child grows. Whenever the prepuce can be retracted sufficiently to permit the glans to be seen there need be no anxiety about the future; the preputial orifice will enlarge sufficiently before or at puberty.

A positive indication for operation upon a child does exist, however, where the preputial orifice is smaller than that of the urethra. This condition is evinced by ballooning of the prepuce during micturition, for the urine flows into the cavity more rapidly than it can escape from the orifice. In these cases the retention of a drop or two of urine in the cavity of the prepuce after each act of urination must, sooner or later, lead to inflammation of one or both of the mucous surfaces, and may give rise to severe suppurative inflammation, the growth of vegetations, adhesion of the prepuce to the glans, formation of preputial stone, or incrustation of the glans.

When the prepuce is tight in the adult, an operation may be called for as a prophylactic against future disease, although phimosis, strictly speaking, does not exist. For example, the collection of smegma, or repeated attacks of herpes, may give rise to an inflammation necessitating operation under unfavourable circumstances. Again, if an individual with tight prepuce gets chancre, chancroid, or gonorrhea, serious inflammatory complications are likely to arise.

Phimosis may be brought about secondarily through induration and inelasticity of the skin caused by frequent attacks of preputial inflammation. The meshes of the connective tissue, at first distended with serum, become secondarily thickened and hypertrophied, sometimes to an extent almost worthy of the name of elephantiasis. The serum is absorbed and its place supplied by a hyperplasia of connective tissue, leaving a thick, long, indurated, inelastic prepuce, interfering not only with sexual intercourse but sometimes even with urination.

Another common cause of acquired phimosis is the cicatrization of multiple chancroids around the orifice of the prepuce. Infrequently, diabetic eczema produces a phimosis. Circumcision under such circumstances is rather a serious matter, as several deaths have been put on record. Demarquay quotes a case, reported by Marx, where a passionate and jealous woman made her lover wear a gold padlock (sometimes two) with which she secured the preputial orifice, keeping the key herself. The victim of her charms carried his padlocks, which were replaced from time to time through new punctures, during four or five years, until such a degree of irritation had been set up that Petroz and Dupuytren, when consulted, diagnosticated cancer, and removed the prepuce. No relapse of the cancer is recorded.

Inflammatory Phimosis.—Inflammatory phimosis is a transient condition. It may leave true phimosis behind, as above detailed, but usually does not. Any variety of phimosis may be complicated by inflammation. It is better not to circumcise when the

prepuce is inflamed, as the process of repair is slow and an ugly cicatrix may result. If the inflammation is caused by chancroid, however, circumcision is usually required to cure the disease, though the wound will probably become infected with the chancroidal virus.

Treatment.—Keep the patient in bed and elevate the penis over the hypogastrium. Astringent wet dressings must be employed locally, while the cavity of the prepuce is irrigated repeatedly by means of a syringe with a flat nozzle with some mildly stimulating lotion, such as dilute lead-water or carbolic acid (0.5%). If this fails, circumcise.

Remote Results of Phimosis.—Besides predisposing to local inflammatory disorders, leading to imperfect development of the glans penis, and acting as an obstacle to sexual intercourse, phimosis may occasion a variety of morbid conditions by reflex action. It may excite frequent desire to urinate (irritability of the bladder), even cystitis; but its disturbing influence in a reflex way upon the rest of the organism I believe has been very much overrated.

Dr. Sayre has published several cases of relaxation of the muscles of the back with curvature of the spine in children, caused by phimosis with adhesions, the local irritation being so great as to keep the little patient in a condition of almost constant priapism. Prolapsus ani and hernia not infrequently accompany phimosis in children, and symptoms resembling those of stone in the bladder are not uncommon from the same cause.

CIRCUMCISION

Excessive length of the prepuce may demand operative interference. Immoderate length alone, however, can hardly be said to constitute a defect, and may be left unmolested unless complicated by induration, thickening, or a contracted preputial orifice (phimosis), or unless it occasions and keeps up balanitis or herpes. Great length of the prepuce is sometimes the result of constant traction, as in children with stone.

Circumcision should be performed on uninflamed phimosis. The inconveniences and dangers likely to result from the phimosis when compared with the simplicity and innocuousness of the operation leave room for no exceptions.

Inflammatory phimosis should, as above noted, be treated by local applications until subsidence of the inflammation effects complete cure or permits the operation to be done without undue danger of infection. In some cases, however—notably the diabetic and chancroidal ones—operation may be indicated immediately.

Under such conditions the simpler procedure of dorsal incision (p. 670) recommends itself as being less of a shock to diabetics and presenting a smaller wound surface for auto-inoculation with the chancroidal virus. When the danger has passed, a secondary true circumcision will produce an esthetic result.

The Operation.—In the operation of circumcision the orifice of the prepuce, with more or less of its mucous and cutaneous layers, is cut away. According to Hebrew chronologists, circumcision was instituted as a religious rite by Abraham in the year of the world 2059—nineteen hundred and forty-one years before Christ. Several Eastern nations still practise it as a hygienic measure. The chosen people preserve the custom as a religious ceremony, performing it on the eighth day.

Few operations in surgery have received more modifications than this simple one of ablation of the prepuce. The indication is to remove the orifice of the prepuce and all redundant tissue, and to insure looseness of what is left. This may be accomplished as follows:

1. In the infant neither anesthetic nor sutures are essential, although one suture at the frenum is desirable. Older patients require general anesthesia if they are disposed to be nervous; otherwise local anesthesia may be satisfactorily employed. The cocain or eucain is injected in a circle around the penis just back of the proposed line of incision. The preputial cavity is then filled with a stronger (5%) solution, which is retained by pinching together the lips of the prepuce until anesthesia is complete—about five minutes should be allowed. Constriction of the penis is not essential.

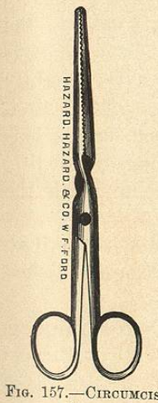

Fig. 157.—Circumcision Forceps.

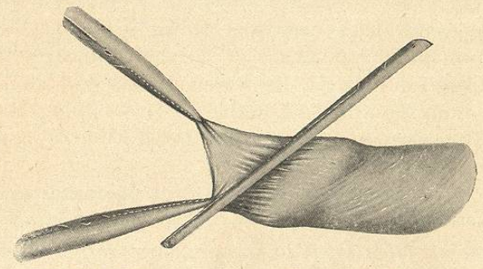

Fig. 158.—Method of applying Circumcision Forceps.

2. Insert a stout probe into the preputial *cul-de-sac*, and with it sweep the entire surface of the glans to detect adhesions, and break them up, if possible.

3. Then catch the prepuce at its muco-cutaneous junction above and below with artery clamps, and draw it forward as far as possible.

4. Now apply the circumcision forceps (Fig. 157). They are to be clamped on the foreskin at an angle of 60 degrees with the long axis of the penis. The point of the forceps should be just behind the lower artery clamp, and great care should be employed not to include any of the glans penis in the grasp of the instrument (Fig. 158).

5. While traction is kept up on the artery clamps, the redundant portion of the prepuce is cut away with scissors curved on the flat.

6. The forceps are now removed, and the skin slips back, exposing a raw surface, the bloody connective tissue overlying the mucous membrane which adheres closely to the glans. This is to be slit down to the corona upon the dorsum, or laterally, and trimmed away on each side up to the frenum, leaving only enough tissue to hold the sutures. Old adhesions may be torn or cut away.

7. Ligatures are rarely necessary. It is preferable to catch bleeding points in the sutures. Oozing vessels, detected by scraping away blood clots with the nail, may be twisted.

Rather coarse horse-hair has proved the best material with which to suture the cut edges. The first suture should be applied at the raphe, and then all the others are certain to fall naturally in place. They should be applied very close together, as many as 25 sutures being used when the wound is long. Each one should take in the least possible portion of integument on the one side and of mucous membrane on the other. The first knot is to be drawn very tightly to cut into the tissues, the second loosely, to avoid severing the first. The ends of each suture are to be cut off about 1 inch long. This prevents the wound from rolling in during the swelling of the first two days, and there are no short, sharp points left to prick the tissues during the displacement caused by swelling.

In the infant no suture (or one only at the frenum) is required. The parts coapt naturally, and healing is practically accomplished in a couple of days.

Variations.—This method of operating is as simple as any, is accurate, and is based on the fact that phimosis is caused by tightness of the inner layer of the prepuce, never by the outer one (unless it is inflamed). Hence the object is to remove as much of the inner layer as possible while preserving the skin to avoid the great danger of this as well as other amputations—namely, insufficient flaps. A circular skin incision might seem as satisfactory as this oval one; but inasmuch as the specialist is not infrequently called upon to

relieve by operation a phimosis resulting from a former operation, the necessity for the oval incision is obvious, the size of which may be varied by adapting the inclination of the forceps to the requirements of the case. In any event a liberating incision may be made directly along the dorsum of the penis, and this is sometimes necessary in order to get a perfect result. The frenum is spared for esthetic reasons and to avoid hemorrhage from its artery.

Many different kinds of phimosis forceps have been devised. The ones figured are the simplest and therefore the best. Fenestration is unnecessary, as the sutures should not be introduced until the forceps have been removed and the mucous membrane trimmed down.

Light adhesions are to be broken with a sweep of a probe, stronger ones by peeling the mucous layer with the thumb-nail. It is the rarest exception only that calls for scissors or scalpel.

The *frenum* may be too short and require division.

After-treatment.—The member is now washed, dried, and may be inserted into a large roll made by tying up a towel with a string, and lashing this thick, perforated disk by cords passed about the thighs and body. Inside of this roll the penis rests, surrounded by loose sterile gauze to keep it from contact with the bed-clothing, and in the partially erect posture most suitable to prevent edema. It is not my custom to apply any snug dressing or any wrappings to the penis. For a child that wears a napkin I use the perforated piece of linen folded over the penis and well greased, simply to prevent adhesion of the wound to the diaper. Dispensary patients do fairly well with a light dressing wound around the penis.

No further attention surgically is required. The horse-hair sutures spontaneously cut out without suppuration, and come away in the scab. On the third day, as the swelling subsides, their long ends may be trimmed down close to the scab, to prevent their being pulled upon during the motions of the patient. Rest in bed, although not essential, is desirable, if prompt union is expected. Union by first intention may be expected, and the patient may go about practically well on the eighth day.

Other Operations.—The quality of any operation of circumcision—of which there are many—must be judged by the simplicity and certainty with which it insures, (1) a sufficiency of skin, (2) a large orifice, and (3) safety to the frenum.

No operation attains these ends more certainly than the one just detailed. Dilatation, divulsion, and elastic ligature are relics of the past, and most other operations err by superfluity of detail or by inaccuracy, putting it in the surgeon's power to make the incision

transversely and to leave his patient still phimosed after recovery or to cut the skin flaps too short. Dressings about the penis induce erection and adhere, interfering with prompt repair. If the operation has been clean the wound never becomes infected.

Dorsal Incision.—When, however, from previous disease, specific cause, or otherwise, union by first intention is not to be expected, or when, as in diabetics, simplicity is of prime importance, the simple dorsal incision takes precedence. In the *infant* dorsal incision might as well always be employed because the prepuce, if cut well down behind the corona, does not grow with the development of the penis, and at adult age the result is quite the same as though circumcision had been performed. In the *adult* local anesthesia and the freeing of adhesions are obtained as above detailed. A grooved director is then introduced along the dorsum of the glans, and upon it the prepuce is cut entirely through with one stroke of the scissors, or (from within outward) with a sharp-pointed bistoury. This wound may be sutured unless infection threatens. Lateral and multiple incisions are advocated as preferable to the dorsal slit, but, while possessing the disadvantage of complicating an operation whose one advantage is its simplicity, they give but little better drainage of the preputial cavity and leave a foreskin that does not lend itself kindly to a secondary trimming, often desirable for esthetic reasons. But in certain chancroidal cases, complicated by inflammatory phimosis, the double lateral incision is better, as it lays open the preputial cavity more completely. Of course both incisions become infected.

Wound infections after circumcision, notably by tuberculosis and syphilis, have attracted the attention of many authors, and have been illustrated by many curious cases. But, except after ritual circumcision, they are practically unknown nowadays, and present no special features when they do occur. More remarkable is the occurrence of *implantation cysts* which has several times been noticed after this operation.

PARAPHIMOSIS

Paraphimosis (*παρα, outside; φιμοω, I bind*) exists when the prepuce gets behind the corona glandis and cannot be replaced.

Causes.—An unnaturally tight preputial orifice is a predisposing cause to paraphimosis. It sometimes happens that young boys, who retract the prepuce, perhaps for the first time, find themselves unable to replace it.

Inflammatory paraphimosis may depend upon balanitis, gonorrhea, herpes, chancroid, chancre, etc. The prepuce, already a little

inflamed, is retracted for the cleansing of some ulceration concealed in its *cul-de-sac*, or is, perhaps, held back by bandage for convenience of dressing, or, if short, becoming inflamed and edematous, it may roll itself back. It soon inflames further, edema increases, and reduction becomes impossible.

Symptoms.—In paraphimosis the glans penis is swollen and livid. If the patient is seen at once there may be no inflammation either of the prepuce or of the glans; but in most cases—in all eventually, if unrelieved—both are inflamed to a greater or less extent, the glans even becoming gangrenous from arrest of circulation. Behind the corona, most marked below, rises a tense, shining, edematous belt of the mucous layer of the prepuce, the connective tissue of which is filled with serum. Behind this there is a deep sulcus or furrow, most marked above, often the seat of superficial ulceration. Here lies the stricture; behind it there rises another edematous fold, usually smaller than the one in front.

If the stricture of the prepuce is tight enough to arrest the circulation, it may finally cause the destruction by gangrene of all tissues lying in front of it.

Treatment.—The first point to decide in a case of paraphimosis is in regard to strangulation. If this exist, delay is inadmissible; if not, temporizing expedients may be resorted to, to reduce inflammation before appealing to forcible reduction or operation. The test is simple. In strangulation the glans penis is turgid, swollen, blue-black, cold, devoid of sensibility, and perhaps already showing points of commencing gangrene. If there be no strangulation, the glans may be normal, or, if swollen, is red—at least not black—warm, and by compression the blood may be driven out of it; sensibility is also preserved. A paraphimosed glans penis may be inflamed, but still not strangulated.

Paraphimosis with Strangulation.—In these cases general anesthesia should always be administered. Often under the relaxation of anesthesia reduction is accomplished with comparative ease. First ice should be used locally to produce shrinkage, and a few small punctures may be made to let out serum from the ridge in front of the stricture if the swelling be excessive. The following are the best methods of reduction: Seize the penis behind the strictured prepuce in the fork of the index and middle fingers of both hands, one placed on each side. This gives more even pressure forward than when one hand only is used. Now make pressure with the thumbs on both sides, in such a direction as to compress the glans laterally, rather than from before backward, and at the same time pull the strictured portion of the prepuce forward, the idea

being to make the glans as small as possible by compression, and rather to pull the stricture over the glans than to push the glans through the stricture (Fig. 159).

In some cases it is preferable to encircle the penis with one hand, using the other for manipulation. Finally, Mercier's method may be tried. The surgeon stands on the patient's right, places the index and middle fingers of his right hand longitudinally along the lower surface of the penis, and the pulp of his thumb on the dorsum of the glans penis and the edematous ridge in front of the point of stricture. By firm pressure, crowding down the swollen mucous layer of the prepuce, he endeavours to insinuate the end of the thumb-nail under the stricture (Fig. 160). If he succeeds in this, grasping the penis and the two fingers of the right hand beneath in a circular manner with the left hand, he draws the strictured point up over the thumb-nail. Bardinet's[1] method—inserting the rounded end of a hair-pin under the stricture on each side, and with these making lateral pressure upon the glans while the prepuce is worked forward—is simple and often effective.

Fig. 159.

Fig. 160.—(Phillips.)

If a prolonged, careful attempt at reduction fails, the strictured point must be divided. To accomplish this subcutaneously, a tenotomy knife is introduced flatwise through an incision on the dorsum of the penis near its root, and slipped forward beneath the skin until its cutting edge is within the stricture. By simply turning the knife the stricture may then be nicked from within outward until all tension is relieved. Inflammatory consolidation of tissue may make it necessary to divide the stricture at several points. This subcutaneous incision presents the advantage over the usual open incision

[1] L'Union médicale, 1873, p. 900.

of being more easily insured against infection—a matter of no little moment in chancroidal cases.

After reduction, the treatment consists in position, rest, and cleanliness, and syringing the preputial cavity with a mild antiseptic solution. If any contagious ulcer has been the cause of paraphimosis, before commencing manipulation the surgeon should carefully examine his fingers for cracks or fissures. So much handling is required that infection is very likely to occur unless the epidermis of the hands is sound.

Paraphimosis without Strangulation.—If the case is recent, reduction must be effected or inflammation will surely set in and complicate the situation. Reduction may be accomplished as detailed above, or by subjecting the penis, prepuce, and glans together to strong continued pressure. Several narrow strips of adhesive plaster are applied longitudinally from the middle of the penis over the apex of the glans to the middle of the penis opposite the starting-point. The meatus urinarius is left uncovered. In this way the organ is surrounded and compressed by longitudinal strips. Over these, commencing just behind the orifice of the urethra, a narrow strip of plaster is wound spirally, using pretty firm pressure, until the penis is covered by its circular bandage up to the middle. The application is not painful. In twenty-four hours reduction may be accomplished. A thin rubber bandage is more simple in its application and more promptly effective.

In old or anemic patients having gonorrhea or an ulcer about the head of the penis, accompanied by lymphangitis, and where the prepuce is short, a large amount of serum may collect in the prepuce, roll it back, and render paraphimosis imminent. The best treatment here is a little rest, with elevation of the penis and application of a 4% solution of tannin, followed by free use of collodion as soon as the patient rises. Unlike the scrotum, the prepuce bears collodion well.

In the majority of cases, when complicating chancroid, herpetic, or other ulceration, paraphimosis is purely the result of inflammation and edema, and there is no strangulation. Here the main inflammatory condition must be treated, aided by position, pressure, puncture, evaporating and astringent lotions. These will usually be sufficient, but in severe cases a sharp watch should be kept for any evidences of commencing strangulation. Should it occur the point of stricture must straightway be relieved.