

THE PREVENTIVE TREATMENT OF PELVIC FLOOR
LACERATIONS.¹

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Introduction.—Pelvic floor injuries comprise ruptures of the fourchette, posterior vulval commissure, perineum, lower third of the anterior, posterior and lateral vaginal walls; and rectovaginal septum. The tissues involved may include the integument from the anal orifice to the posterior vulval commissure, the mucous membrane of the vulva, vagina, rectum; the cellular tissue; and the sphincter ani and levator ani muscles.

Preservation of the structures of the pelvic floor during the passage of the fetal head and shoulders has been placed by some authorities as second in importance only to preservation of the lives of the mother and child.

From this standpoint it is possible to discuss the entire mechanism and conduct of labor, with the one aim in mind of favoring

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the pelvic floor under all circumstances when the more weighty conditions do not assert themselves. This has actually been done by Krantz¹ in a lengthy monograph.

The most important part of the management of the second stage of labor is the prevention of pelvic floor lacerations, lacerations of the fourchette in primiparæ; and superficial tears about the vulval orifice in both primiparæ and multiparæ often occur, are often unavoidable, and usually readily heal with simple asepsis. Deep lacerations are, I believe, avoidable in normal, ordinary cases of labor. The great importance of avoiding rupture of the pelvic floor cannot be overestimated. It is well known that a large proportion of gynecological cases owe their condition directly or indirectly to rupture of the pelvic floor muscles during labor.

All of us are familiar with the published statistics of the Obstetric Clinic at Halle. Here we are told that the results of ten years' observation with every known method of perineal protection were lacerations extending beyond the commissure in 21.1 per cent. of primiparæ and 4.7 per cent. in multiparæ.

The factors which tend directly or indirectly to produce pelvic floor lacerations are numerous, but for convenience we can arrange them in three major classes. (1) Anomalies of the expulsive forces; (2) anomalies of the vaginal and pelvic floor tissues; (3) faulty presentations and positions of the fetus and faulty mechanism of labor.

These three major causes can be more concisely stated as follows:—

(1) Too rapid expulsion of the fetus, so that tearing instead of stretching results; (2) relative disproportion in size between the presenting part and the parturient outlet; (3) a faulty mechanism of labor, whereby larger circumferences of the head and shoulders than necessary passes through the parturient outlet.

1. *Preliminary Digital Stretching of the Parturient Outlet.*—From an extended clinical experience extending over a number of years, I can speak most enthusiastically of the preliminary digital stretching of the vulval outlet in primiparæ, and especially in elderly primiparæ, as a prophylactic measure in perineal protection. Of course the method has been in use for years, but I would urge its more extended use in those cases in which the parturient outlet and the lower third of the vagina are small and rigid. I have obtained surprisingly good results by passing two fingers, palmar surfaces down, into the parturient outlet, and making inter-

¹Krantz: "Die Ætiologie d. geb. Dammverletzung." Wiesbaden, 1900.

mittent backward and lateral massage-like pressure. The motion is a sort of eccentric massage.

I am accustomed to use two fingers of one rather than of both hands for the purpose.

The assistance of ether or chloroform is most valuable. Fifteen or twenty minutes of this firm outward and backward rotary massage-like stretching will usually sufficiently enlarge the most rigid parturient outlet.

I have demonstrated the method repeatedly to the Bellevue Hospital internes and physicians in consultation practice, upon



Fig. 1.
Fetal cadaver before cleidotomy.



Fig. 2.
Fetal cadaver after cleidotomy.

cases in which the birth of the fetus without entire loss of the pelvic floor at first appeared impossible.

In a particular instance, an elderly primipara, 39 years of age, the wife of a physician, I thus dilated an exceedingly rigid and small parturient outlet as a preliminary to a low forceps operation. The husband, who watched the procedure, was amazed at the result, as no laceration of any moment subsequently occurred.

I confess that there are certain kinds of pelvic floor rigidity that will resist this and every method of prophylaxis, and tearing instead of stretching will occur.

One patient in private practice I have delivered three times, yet

in spite of every precaution, exclusive of episiotomy, perineal laceration, to the so-called second degree has taken place in each confinement. Since I have more generally used this method of perineal dilation, I have seldom been compelled to resort to episiotomy, and that only in cases of emergency, where time was wanting to employ the stretching method.

2. *Episiotomy*.—I have nothing new to offer upon this subject. My belief is that the operation is one for the novice in obstetrics. The greater the clinical experience the more infrequently will the operation be required.

3. *Head Delivery*.—In respect to head delivery I have again nothing that is new to offer.

I endeavor *first*, to have the delivery of the head so slow, that stretching and not tearing of the parts result. Because the pelvic floor muscles are relaxed in the interval between the uterine contractions, head delivery is more safely accomplished at this moment, hence I secure delivery of the head during the interval.

4. *Cleidotomy*.—Cleidotomy or division of both clavicles in *dead* fetuses as a preliminary to delivery of the shoulders, has for its object the diminution of the bisacromial diameter. This simple operation, rarely mentioned in obstetric text-books, has never, I am sure, taken its proper place in obstetric surgery, as a valuable means of lessening maternal morbidity and mortality.

How often have we witnessed a difficult extraction of the shoulders in a generally contracted pelvis or outlet, after the perforation and extraction of the head?

I have seen twenty minutes consumed in the delivery of the shoulders. I have seen the head dragged from the body, by the excessive traction. I have had cases brought into my Bellevue Hospital service with the head delivered and the shoulders still within the pelvis. These last are usually midwife cases.

As a matter of routine in these cases I divide the clavicles, and it is amazing how the diminution of the bisacromial diameter thus produced, renders the subsequent extraction of the fetal shoulders a comparatively easy task, and quickly and completely changes the clinical picture for the better.

In my experience the operation readily reduces the bisacromial diameter from $4\frac{3}{4}$ inches (12.7 cm.) to 4 inches (7.5 cm.). (Figs. 1 and 2.)

For the operation I always use a pair of heavy straight or curved obstetric scissors of the Dubois type, two fingers of one

hand being used to guide the blunt points to the middle of each clavicle. It is usually necessary to strongly extend or flex laterally the fetal head so as to give room for the use of the scissors (Fig. 3).

5. *Shoulder Delivery.*—I firmly believe from years of careful clinical observation that the posterior shoulder is responsible for many instances of deep pelvic floor laceration. Further, that moderate ruptures caused by the passage of the head are often increased and rendered serious by the subsequent passage of the posterior shoulder.

Little importance is usually attached to the method of shoulder delivery, and it would appear that various methods are in vogue.



Fig. 3.—The operation of cleidotomy. Performed with long curved scissors. (From Edgar's "Obstetrics.")

Among five of the more recent textbooks upon obstetrics I find in one but eight lines devoted to the management of shoulder delivery, and in another ten.

One of these five authors advises the birth of the posterior shoulder first, the anterior being engaged behind the symphysis; the second the posterior shoulder first after the anterior has been brought under the symphysis; a third gives no specific directions whatever; and the fourth and fifth consider it immaterial which shoulder is first allowed to emerge from the outlet.

Observation will, I believe convince any one that considerable destruction of the perineum is often caused by the posterior shoulder.

The difference in the conformation of the head and shoulders readily explains the fact. The vertex is round and smooth with a

tapering extremity, and the alternate descent and retraction of the head in labor cause a gradual and uniform distention of the parturient outlet.

The bisacromial diameter measures much more than the dorso-sternal; again, the shoulders are irregular in shape as compared with head, having projections which stand out abruptly from the comparatively small and thin neck; further, the shoulders if left to spontaneous delivery are commonly delivered by a single uterine contraction.

Regarding the normal mechanism of shoulder delivery it is generally true that when the expulsion is purely spontaneous, the posterior shoulder is born first.



Fig. 4.—Shoulder delivery. First step. Directing the anterior shoulder well up behind the symphysis, thus securing the engagement of the cervico-acromial diameter.

Auvard found that in 29 cases the posterior shoulder came first in 16, and the anterior in 9 cases.

Leonet asserts that the anterior shoulder first disengages in 90 out of 100 cases, if the fetal head is not supported; that the posterior first emerges in 90 out of 100 cases if the head be supported.

I found that when the head was lightly supported, the posterior shoulder was born three times as often as the anterior in 69 primiparæ, and two and a half times as often in 68 multiparæ.

I further found from observations in 15 cases of spontaneous delivery in primiparæ, and 28 in multiparæ in both the dorsal and lateral postures, that posture of the woman does not appear to affect the mechanism of shoulder delivery.

I have been most successful with the following method of

shoulder delivery, and either the lateral or dorsal posture of the patient can be used at will. The method is not new. (1) The



Fig. 5.—Shoulder delivery. Second step. Delivery of the posterior shoulder.

delivery of the shoulders is delayed if possible until nearly complete rotation of the bisacromial diameter has taken place (Fig. 4). (2) The fetal head is taken in the hand and gently raised



Fig. 6.—Shoulder delivery. Third step. Delivery of the anterior shoulder by depressing the head, and, if necessary, by pressure upon the fundus.

or pushed, so as to bring the anterior shoulder well up behind the symphysis, thus giving the cervico-acromial diameter of the fetus at the outlet instead of the bisacromial (Fig. 5). (3) The pos-

terior shoulder is now allowed to pass out spontaneously, and whenever possible manual extraction should be avoided, as this increases the risk of perineal rupture. (4) During the detention of the anterior shoulder behind the symphysis the fetal hand of the opposite arm lying across the fetal chest will usually soon appear in the vulva (Fig. 6).

I have found that delivery may be safely assisted by slowly flexing this forearm and arm out through the vulva and thus delivering the posterior shoulder by slight traction on the posterior arm.

(5) Should the foregoing be impracticable, and delay in the expulsion of the posterior shoulder occur, I have found gentle traction upon the head, the fingers encircling the neck, to be preferable to traction with a finger in the axilla.

(6) Should there be delay in the delivery of the anterior shoulder, after expulsion of the posterior, it is best remedied by making traction directly downwards, with the hands placed on the sides of the head, taking care not to make too great pressure on the perineum. As a last resort traction may be made by a finger in the axilla.

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