

inches in 3 cases. It follows that since the distance of the edge of the placenta from the rent is absolutely decisive as to the distance of the edge of the placenta from the os uteri, that the edge of the placenta rested on the os uteri in 22 cases, and was within one inch in 32 cases, and so on. This proves that the placenta has commonly a much lower seat than has hitherto been believed.

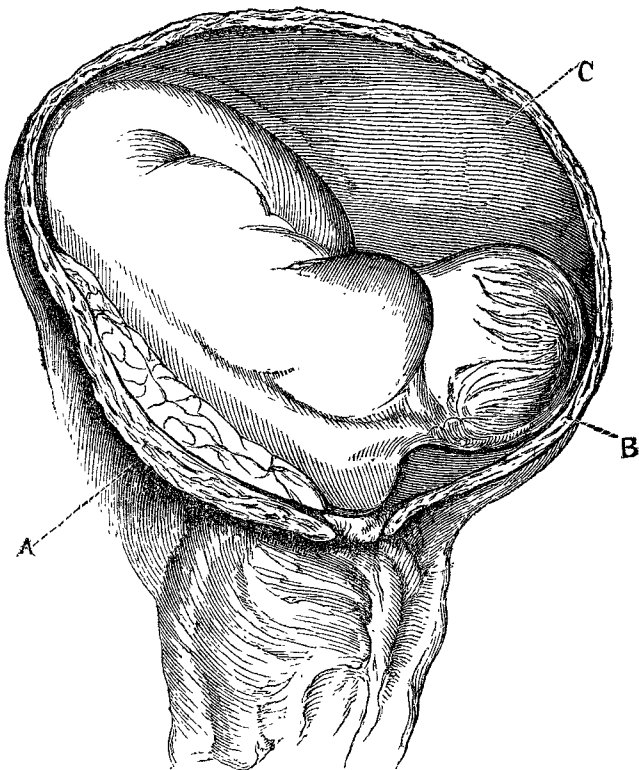
This frequent latero-cervical attachment of the placenta has other important bearings in obstetric practice. I must beg permission to digress for a moment to refer to them. It was pointed out by Levret that it was a frequent cause of laborious labour and of post-partum hæmorrhage. The attachment of the placenta to the lower segment of the uterus so modifies its thickness, vascularity, and capacity for contracting equally with the other portions of the uterus situated in the same zone, that the labour is rendered painful and lingering; and, when the child is born, the faulty position of the uterus, added to previous exhaustion, disposes to a renewal of hæmorrhage.

There is another fact of practical interest. The frequent complication of cross-presentation of the child with placenta prævia has often been observed. The explanation of Levret satisfactorily ranges the two facts in the relation of cause and effect.

In describing a case where the head was thrown on one side, and which he delivered by the forceps, he says:—"Il n'est pas difficile de décider que le placenta s'étant fortuitement attaché du côté droit près de l'orifice; il a dû empêcher la matrice de se dilater suffisamment de ce côté, conséquemment il l'a obligé à prendre une figure oblique. Mais ce qui a totalement déterminé cette mauvaise situation a été l'inflexibilité de l'orifice de cet organe en cet endroit, lequel j'ai reconnu dur et comme calleux, pendant que son côté opposé était totalement effacé. Il fallait donc, par ces raisons, que l'enfant, se présentant par la tête, elle s'engageât dans ce détroit suivant une ligne oblique à la rectitude du corps." And at page 125:—"La difficulté de l'enfantement ne vient pas seulement de l'obliquité de la matrice, mais encore de la difficulté que l'orifice a à se dilater dans le lieu prochain de l'attache du placenta, par la raison que la paroi de ce viscère est plus épaisse dans cet endroit."

The diagram (Fig. 5) I have constructed will serve to impress this fact.

FIG. 5.



- A. The rigid inclined plane formed by the placenta, and hypertrophied placental seat of uterus, throwing fetal head over to the side.
B. The thin yielding portion of uterus.
C. Thin yielding portion of uterus distended by hydrostatic pressure.

I believe these considerations present a rational explanation of a multitude of cases of præ-partum hæmorrhage, lingering labour, cross-births, and post-partum hæmorrhage, the cause of which has been altogether overlooked.

Having considered the varieties of seat of the placenta, we are naturally led to examine the relation of the several parts of the muscular structure of the uterus to the placenta in its different positions. The general disposition of the muscular fibres of the uterus may be taken to be pretty accurately determined. There is a general accordance amongst anatomists concerning the leading points. The dissections of the Hunters confirmed, correcting somewhat, the description of Ruysch, and these in their turn have been confirmed by the dissections of Sir Charles Bell, Professor Owen, and others. Preparations may be seen in most museums which exhibit clearly the disposition of the muscular fibres in the different regions. I must, however, recite to you the description of Sir Charles Bell, not only on account of its graphic beauty, but also because he has laid the anatomical foundation of those physiological views concerning prævia placenta to which I was led by clinical observation.

"It has been proved by the sections of the uterus made in different states of its contraction, that the order of the muscular fibres is calculated so as to close the vessels; that where Nature has provided for the attachment of the placenta, there the broken vessels are guarded by the provision of the surrounding muscular texture; but we know also that during this contraction of the superior part of the womb, the lower part dilates and relaxes. Now if the contraction of the womb be essential to the safety of the mother, what will be the effect of the attachment of the placenta to a part of the womb which must relax during the labour! Everyone knows the peculiar danger of *placenta prævia*, that each labour-pain as it returns increases the violence of the flooding instead of checking it.

"I have been led to conclude that *the placenta cannot be partially separated if it be attached in a regular circle to the fundus of the uterus*: it cannot be partially separated, and cannot be separated bodily until the uterus is permitted to have a great degree of contraction by the delivery of the child; the circular muscles of the fundus being agents in a double capacity, that is, both in expelling the child, and in constringing the uterine vessels; by the time that the child is expelled, the vessels of the fundus are greatly diminished in diameter. Further, the place and strength of these muscles being perfectly regular and uniform, their action must have the effect of equally drawing the surface of the uterus, which is in correspondence with the margin of the placenta; but no one part of it will be separated until the general restriction is nearly completed. This will not be the case when the margin of the placenta extends irregularly, or when the placenta is attached to the side of the uterus. After the delivery of the child in cases of flooding, it is not uncommon to find a portion of the placenta low down in the uterus, and separated, while the greater portion remains attached to the fundus. In examining the inner surface of the uterus by dissection, I have seen the part corresponding with the placenta irregular in its form, and extending towards the side and neck of the uterus. In such circumstances of the attachment of the placenta, the retraction on the lower part of the womb being to a greater extent than the fundus, will account for the too early separation of that margin of the placenta which stretches towards the orifice, and also for the hæmorrhage which is a consequence of this partial separation, but in progress of the labour, and after the discharge of the waters, the more powerful efforts of the uterus draw the muscular fibres more closely around the bloodvessels, and then the flooding ceases."

I am then entitled to rest the anatomical foundation of my views upon the authority of Sir Charles Bell.

ON UNNECESSARY ORTHOPÆDIC OPERATIONS.

By W. J. LITTLE, M.D.,

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(Continued from p. 134.)

On the Treatment of Imperfectly Cured, Relapsed, or Neglected Cases of Talipes Varus.

THIS subject is one of much importance to the credit of orthopædy, and especially of tenotomy, for the cases are numerous in which the fruits of this operation have been lost from different causes.*

* It may not be without interest to quote in this place some of my experiences of relapse, embracing many cases, treated by myself nearly twenty years ago. Thus, although the great majority of the cases appended to my

As a striking instance of the liability of congenital talipes varus to recur, I may relate one which has recently passed from my hands. I operated on the subject of it, a male infant brought from Australia, seventeen years ago. The tendons divided were the Achilles, the anterior tibial, and the posterior tibial. The last of these was divided, not subcutaneously, but by exposure of it. At two and a half years of age the child was returned to Australia "cured," with the usual directions to the friends and medical adviser as to perseverance in rubbing, working of feet, exercises in drilling as soon as capable of them, and right use of retentive apparatus. At six years of age he reappeared here, the foot entirely relapsed as regards the contraction, and aggravated as regards the form and relations of the bones and ligaments, caused by walking on the deformed member. I repeated the former division of tendons, this time all subcutaneously, the posterior tibial below the site of former operation, and severed likewise the plantar fascia. At eight years of age he again returned to Australia, walking perfectly well, only the foot was more atrophied than at his first dismissal from treatment. As if to illustrate the difficulty of parental and even professional management of such a case, at that period at the antipodes, he again visited me at the age of thirteen, the foot again quite distorted, evidently threatening to be regarded as an inveterate deformity. This time I was not inclined to waste the credit of tenotomy. I had, moreover, ascertained by experience how much may be done with a relapsed case without operation, and was desirous of convincing the friends that the relapse was due to neglect of the cautions I had given, and not to any deficiency in the method of treatment which had been adopted. I advised instrumental, manipulative, and physiological treatment, which was conducted under my directions, the boy being placed at school in the country, and not laid up or confined to the house a single day. The improvement was rapid; the patient has become an unusually tall man and a good cricketer; the gait, when he is not fatigued, is perfect; the only traces of the deformity consist of the ordinary want of beauty in the once varus foot, the elevated situation of the calf, and deficiency of muscular development.

The ordinary causes of similar relapses are—incompleteness of first "cure," through insufficient number of tendons having been divided, or insufficient elongation by instrumental or other treatment of the ligaments and muscles not reached by the operation; premature discontinuance of instrumental and attendant manipulation, as well as gymnastics, or studied exercises of the member.

A formidable pathological cause of return of deformity after treatment conducted with or without operation is, that whilst the recently-elongated muscles and tendons are, through more or less protracted duration of the deformity, inferiorly organized and grow less than unaffected parts, the bones and muscles upon the originally uncontracted side of the member, having been but slightly, or not at all, implicated in the original cause of the distortion, grow at a greater pace; and thus the mode of progress of the act of nutrition favours a disproportion between the length of some of the muscles and between one portion of the latter and the bones. This natural pathological tendency to relapse requires to be counteracted by the similar course necessary in any disease—viz., by the medical practitioner taking care not to regard a case as "cured" so long as a trace of contraction remains, and by sedulous use of some of the means used for the cure—in this case by active and passive exercises, sometimes by instrumental and retentive appliances.

Cases of this description are continually passing from one practitioner to another. I have been consulted in many instances in which the blame has often been unjustly thrown upon the operator. I know of such cases having been temptations to unnecessary tenotomy. I have long ceased to re-operate them; I find that they can generally be restored by due pains in mechanical management, by thoroughly explaining to the patient or parent the circumstances which have favoured

relapse, or have prevented full realization of the benefits obtainable from the subcutaneous tenotomy of Stromeyer, and by teaching them in what manner manipulations and physiological exercises of the part can best be conducted. In a few exceptional cases, in which a necessary section has been omitted, or no evidence exists of elongation of tendon by former operation, repetition of operation, or completion of it, may be necessary. I mention the fact of the late justly-celebrated Dieffenbach and Phillips having practised numerous repetitions of section of the tendo-Achillis in the same individual, for the purpose of assuring my readers that this is never necessary. Such a course proves that in the earlier stage of the history of tenotomy sufficient attention was not paid by those surgeons to other modes of cure. Even in the severest adult varus, cases requiring more than a year's treatment, I do not remember ever having re-operated more than twice or thrice on the same limb, and even this I now consider excessive.

Whenever retraction of the belly of the muscle is observed, and the tendinous part disproportionately long, although this may be tense and rigid, and the movements of the articulation imperfect, the surgeon may safely determine that the maintenance of deformity is due to shortened ligamentous, muscular, tendinous, and fascial structures, situated beyond the reach of the knife, or to abnormal form of articulating surfaces.

I believe that hundreds, nay, thousands of cases, exist of incompletely cured or relapsed varus, in which the surgeon needs only to direct efficient instrumental, manipulative, and physiological treatment to enable him to realize all the good which subcutaneous tenotomy is capable of affording. I form this opinion from the circumstance that I now have brought to me for consultation a larger number of such cases than of primitive infantile varus.

In the majority of instances, it will be found that the part has only partially relapsed, the heel and the inner margin of the foot being more or less elevated, a portion of the sole being applied to the ground. In the treatment, discontinuance of the use of the limb is rarely necessary; sometimes it is required during two or three weeks, until the principal part of the elevation of the inner margin of the foot is removed. The "bringing down of the heel," as it is termed, is much facilitated by exercise upon the limb whilst it is held in an everted position by a proper instrument. In such a case, the use of an apparatus which does not absolutely confine the ankle-joint is a matter of prime importance. The apparatus already described (page 134) becomes of singular efficacy. Its property of aiding to completely bend the rigid ankle is sometimes augmented by placing a wedge of cork or wood beneath the front of the foot, causing the patient especially to tread upon this part, and by the increase of leverage thus gained, to act more efficiently upon the resisting ligaments and muscles around the ankle and in the sole.

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ON THE THERAPEUTICAL USE OF ELECTRICITY BY INDUCTION.

BY T. ALTHAUS, M.D.

ELECTRICITY has been used a long time in the treatment of diseases, but its application was very seldom accompanied with success, whilst in many cases the effects produced were even injurious. On the one hand, one was not sufficiently acquainted with the physiological effects of the different kinds of electricity, static electricity, galvanism and electricity by induction,—which must be carefully distinguished; on the other hand, there was a certain want of method and regularity in its therapeutical use, as well as an incompleteness in the construction of the apparatus. Great results have been accomplished in this matter by the researches and discoveries of Dr. Duchenne, at Paris, according to whose experiments, many of which I have seen and repeated, electricity by induction seems to be the true medicinal electricity.

Static electricity has been employed, as the so-called electric bath, highly recommended by the Italian school, but having no real effect at all; as the common electricity of sparks, which only produces a slight irritation of the skin, but is not powerful enough to penetrate into the depth of the nerves and muscles; finally, in the shape of the Leyden jar, by which violent and

treatise on "Club-Foot and Analogous Distortions," 1839, have remained "cured," No. 2, for example, has required repetition of the operation, but is now an active cavalry officer. No. 12 has needed much attention. No. 16, in which recovery appeared perfect, as shown by the woodcut attached to that work, suffered relapse in one foot, and repetition of section of tendo-Achillis, with division of anterior and posterior tibial tendons. The subject of this case was subsequently affected with hemiplegia, one of the few instances I have witnessed of direct disease of nervous centres after congenital talipes. No. 18 partially relapsed, but recovered with the aid of manipulations and instrumental treatment, and is now a robust, active man. No. 23 subsequently occasioned much trouble, owing to the cicatrix of the slough, which had resulted from pressure against the cut-oid portion of the involuted sole. No. 32 is alluded to for the purpose of stating that, although treated without operation, the recovery has continued perfect, the subject being at present actively engaged as a student of medicine.