Practical Observations

ON

"SUPPORTING THE PERINÆUM."

BY

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2. *The Effects of the Procedure "Supporting the Perinæum" on the Perinæum itself.* In order that we may deal with this part of the subject in a fitting manner, it is necessary to give a little consideration to the mechanism of the process by which the perinæum is distended, and provision made for the passage of the head of the child through the vaginal outlet; in other words, to study the *behaviour of the perinæum during normal labour.*

The effect of the pressure of the head of the child is, that the perinæal structures are spread out, the area of the perinæum increased to a very remarkable extent; so that, when the head is just about to emerge, and the vaginal outlet is stretched to the utmost, the surface offered by the perinæum exceeds by many square inches the area presented when the parts are at rest. The increase in size takes place from side to side quite as much as from before backwards. Now, in reflecting carefully on the matter, it will at once be seen that the distension required is chiefly at the vaginal outlet itself, and in a circular direction. My meaning will be rendered more intelligible by reference to the accompanying drawing.

Fig. 2.

P represents the section of the perinæum when at rest, and before labour has commenced. When labour has so far advanced that the head begins to press on the perinæum, and to enlarge the inferior outlet, the result will be that the point P will travel backwards towards the point A; but, inasmuch as the stretching and distension which takes place, by driving the borders of the outlet forwards, lengthens the perinæum also in the direction from before backwards, the result of the two operations will be that the point P will travel, not directly backwards towards A, but more nearly downwards and forwards; that is

to say, in the direction from P towards B. The modern practice is to push the soft parts forwards, and thus, it is said, "relax them"; and it appears to be considered by recent authorities that an advantage is thus gained—that the soft parts *are* relaxed by the pressure and "support" thus applied. But what advantage can be gained by pushing the fourchette forwards in the direction of the line A B, which is the practice recommended? It is evidently impossible to procure more space at C B than at C A; the farther the point P travels forwards, the greater must be the distension in the direction of the line A B. Now, if the dilatibility of the perinæum is expended in this latter direction, it is so much lost without purpose. Pressing the fourchette forwards certainly *delays* the emergence of the head through the ostium vaginae; the mistake has been in supposing that anything is gained by this as regards *facility* in the delivery. On the other hand, it is unquestionable that delay obtained in this manner is attended with the great disadvantage now enunciated—that, by pushing the soft parts forwards, the substance of the perinæum is expended, so to speak, in a useless manner. Sooner or later, the vaginal outlet must be sufficiently dilated to allow the head to pass. Whether the head is allowed to pass at the point C A or at the point C B, the size of the aperture required for its passage is the same.

What would be thought of an individual who, desirous of enlarging the aperture of a bag, set about the accomplishment of his purpose by endeavouring to lengthen the bag itself? The practice of pressing the soft parts of the perinæum forwards is nothing more nor less than the application of this principle. In the case of the bag, such a procedure would be only useless; in the case of the perinæum, it is worse than useless. It is by circular dilatation of the vaginal outlet that the delivery is finally accomplished. The only effect of pushing the soft parts forward is to divert the elastic properties of the perinæal structures from their natural to an unnatural and useless end. True it is that, in a natural labour, the soft parts *are* pushed forwards; that the fourchette advances in the direction of the line A B (Fig. 2); but it does not follow that dilatation in this direction is mechanically useful. It is a positive disadvantage that it should occur to any considerable extent.

How it came to be imagined that pressing the fourchette forwards was an advantage, it is not easy to explain; and the very fact that so many recent writers appear to agree in considering it an advantage shows how little the matter has been really studied by them. Curiously enough, Hamilton, the first teacher who systematically "supported" the perinæum, did not fall into this error. The hand should be applied, says Hamilton, "as the head advances, to regulate its progress by pressing the perinæum as it were backwards, in a direction towards the coccyx." (Leishman, *op. cit.*) Hamilton thus conceived that, in order to save the perinæum from laceration, we ought to press the perinæum *backwards*. With a similar object, the modern authorities say "press it *forwards*". There can be no doubt that, in regard to the economical distribution of the soft parts, Hamilton's plan is more in accordance with the mechanical requirements of the case, as I have indeed just shown. Dr. Leishman gives us a quotation from Roederer, from which it appears

that Röderer's practice was to press the perinæum "towards the sacrum"; as I find in the original, "Sub quovis ingruente dolore digitis his perinæum versus os sacrum premit." (*El. Art. Obst.*, § 311.) It is thus evident that neither Röderer nor Hamilton supposed it an advantage to press the perinæum forwards. Thus the argument for supporting the perinæum, "that the soft parts are relaxed by pressing them forwards", turns out to have no foundation.

Thus far, the object I have had in view has been to show, from an appeal to the facts of the case, the mechanism of the process—in fact, what the effects of the operation "supporting the perinæum" really are. It has been shown that, in the main, the reasoning on which it is, or has been, supposed that the operation is good as regards its conservative action on the perinæum, is inadmissible; that effects have been supposed to result from it which have no substantial existence; and that, in certain cases, the real effects of the operation are precisely opposite to those which are attributed to it.

I have preferred, in endeavouring to analyse the effect of the operation, to meet its defenders on their own ground, and have considered its supposed advantages in the order in which they have presented themselves; and for this reason the method of treating the subject may have appeared somewhat irregular, and wanting in order of arrangement.

The manner in which the dilatation of the perinæal structures takes place, its direction and nature, have been alluded to; and the errors of prevailing notions regarding the same have been pointed out. But the *agency* of the dilatation in question—the force by means of which the perinæal surface, previously so small, is so increased and extended as to allow the head of the child to pass—have not been considered; nor whether the plan of "supporting the perinæum" is calculated to modify, assist, or interfere with this important process.

In "making its sweep", as it is termed, over the

Fig. 3.

perinæum, the portion of the head encircled by the ostium vaginae progressively increases in circumference; the perinæum has, on every successive pain,

to encounter and deal with a section of the head becoming larger and larger. Thus, whereas at the commencement of dilatation the diameter presented to the perinæum is roughly represented in Fig. 3 by the line A B, as the head advances the diameter presented to and stretching the perinæum is represented by the line A C; and, before the head can be delivered, the ostium vaginae has to be dilated to an extent represented by the lines A D and A E. The real effect is here a little exaggerated, owing to the circumstance that the point A is not a fixed point, this part of the occipital region also advancing, although very slowly, beneath the pubic arch. The head is thus brought into contact with the perinæum in such a manner as to produce dilatation of its structures in all directions. Just as every portion of the superficies of a hollow India-rubber ball is acted upon and contributes its quota to the distension produced on forcibly blowing air into it, so is every portion of the perinæal surface stretched and made to contribute to the extension of surface necessary.

The process by which complete dilatation is arrived at, and which, like many others in the animal economy, is calculated in every way to excite our admiration, is generally a very gradual one, especially in a first labour. The head descends, driven downwards by the uterine contractions; and the attendant receives an intimation that the perinæum is about to undergo dilatation, in the fact that the perinæum is slightly bulged downwards during the acme of the uterine contraction. When the "pain" has gone off, the perinæal tumour has entirely vanished also. The next pain propels the perinæum downwards a little more; but the difference between the effect of two successive pains is so slight that it is hardly perceptible. To this process of alternate stretching and repose the perinæal structures are subjected for a period varying according to the peculiarities of the case—perhaps also according to the treatment pursued by the attendant; and at last the vaginal outlet is distended so as to allow the head to pass. The extreme distension of the perinæum never, normally, lasts for more than a very brief period; and, even up to the very last, alternates with a state of almost complete repose. The attendant watches anxiously, thinking each pain will be the last; but no, at the moment when the head threatens to escape the pain suddenly ceases, the head retires, leaving the perinæum apparently undistended, and the repose may be so complete that the patient actually often falls asleep. The very next pain may propel the head through the outlet.

Such is the normal process, which appears to be one of alternate attack and retreat, the attack not being more vigorous than the retreat is decided. The construction of the perinæum is such that this peculiar method of dilating its structures is the best and the most efficacious. It appears to be owing to the elasticity of these structures that the head is driven backwards into the pelvis when the uterine action ceases; and without doubt this is nature's provision for safety.

Now, what takes place when the perinæum is "supported" persistently and forcibly, and in such a way as recommended by certain authorities? If the uterus be acting feebly, such support may render the attempts on the part of nature to dilate the perinæal structures futile, or may so impede the action of these efforts as to postpone the delivery for a con-

siderable time. In the case of a "rigid perinæum", as it is called, what we require is that it should be distended. How is this to be accomplished, if the means nature has provided to this end are rendered nugatory? How can the structures be properly stretched, if every uterine contraction is opposed by the operator's hand forcibly placed against the perinæum? If the uterine pains be violent, they will, in spite of the operator, drive the head downwards; if they are weak, the labour will be rendered tedious by the interference of the "support". The majority of authorities do not recommend the "support" to be carried to such a degree as to interfere materially with the distensive action of the head on the perinæal structures; and, so far as this part of the question is concerned, the slight support they recommend probably does very little harm or good.

When the "support" is in degree such that the formation of the perinæal tumour is actually interfered with, the labour is not merely rendered tedious. The support assiduously rendered has, we will suppose, prevented any great distension of the perinæum, and at the last, consequently, when the head emerges, it is distended to this extent for *the first time*; whereas, in the absence of assistance, the same degree of dilatation—practically the same, at least—would have been produced three, four, or more times, in as many pains, before the final expulsion of the head.

Dr. Leishman, who believes that support of the perinæum is one of the causes of its laceration, takes a line of argument somewhat analogous to the one just stated. "The pressure of the hand being chiefly directed against the posterior and middle portions of the perinæum, not only subjects a part already on the stretch to an injurious amount of pressure, but prevents the lateral portions of the perinæum from bearing their due share of the tension. Labour advances, and the time has arrived when the head must complete the curve of Carus and pass under the pubic arch. The whole perinæum is now on the stretch, but the lateral portions having been prevented from undergoing that beautifully graduated dilatation which nature alone effects, do not yield sufficiently" (*loc. cit.* p. 417).

From this appeal to the mechanism of the process of distension of the perinæum and of the vaginal outlet, it must be concluded that the systematic application of pressure may have the effect of interfering with the necessary dilatation of the soft parts, so to interfere with the dilatation must be to imperil the safety of the perinæum.

In the next place, I propose to look at the question from another point of view, and to consider the *causes of laceration of the perinæum during labour*.

[To be continued.]

FUNCTIONS OF THE SPLEEN. Professor Maggiorani, of Rome, considers that he has discovered the uses of the spleen: 1. The formation of fat during the fermentation of sugar, and its conversion into glycerine and fatty acid; 2. A modification in the blood of rabbits deprived of their spleens during six months. The chief modification consists in a diminished intensity of colour, and relative poverty in iron. Hence the spleen presides over the metamorphosis of organic matter, and accumulates iron for the making of hematine.

Illustrations

OF

HOSPITAL PRACTICE:

METROPOLITAN AND PROVINCIAL.

METROPOLITAN FREE HOSPITAL.

LARGE CARBUNCULAR BOIL FOLLOWED BY PLEURISY
AND BY PYEMIC ABSCESSSES: RECOVERY.

Under the care of JONATHAN HUTCHINSON, Esq.

WILLIAM D., aged 23, a cabinet-maker of temperate habits and usually in fair health, was admitted into the Metropolitan Free Hospital, on December 26th. The disease for which he applied was a large carbuncular boil on the nape of the neck. The cellular tissue of the neck was extensively indurated, and in a brawny condition. The boil had commenced ten days ago, and it had been preceded by giddiness, lassitude, and constipation. On several previous occasions during the last two years he had had a few small boils. The discharge from the boil, which was already open, was of thick greenish pus, not at all like the "chalk and water" discharge from carbuncle. The acid nitrate having been freely applied to the ulcerated part, the man was ordered to take fifteen grains of chlorate of potash three times a day, and an alterative aperient at night.

On December 27th, the swelling about the neck was so much extended that the trachea was compressed. All the parts except in the median line in front were hard and brawny. His breathing was with a loud laryngeal rhonchus. At 10 p.m. his condition was one of extreme urgency. The dyspnoea was so great that tracheotomy was contemplated. During the day he had repeatedly been delirious; and he now appeared stupid and heavy. The swelling of the neck was such that he could not open his mouth, but by examination with the finger it was ascertained that the left side of the pharynx was much swollen. His pulse was sharp and bounding and very rapid. Respiration 96 in a minute. The induration of the parts about the back of the neck was extreme, and Mr. Hutchinson accordingly made free incisions across it. To prevent bleeding, lint dipped in turpentine was immediately afterwards placed in the tracks of the incisions. After waiting about an hour his breathing became somewhat relieved, and it was determined to defer the operation of tracheotomy for the present. The instruments were, however, kept in readiness at his bedside, in case any sudden relapse should take place. He was ordered to take half a drachm of turpentine with mucilage every four hours. On the following morning (28th) he was somewhat better; his breathing being much less frequent. During the day he managed to swallow small quantities of food. He was quite himself when awake, but passed off into wandering delirium when he fell asleep. He continued to have a succession of slight shivering fits, the first of which had occurred on the 26th. At three o'clock in the afternoon he began to complain of severe pain in his left side; and an hour or two afterwards a loud friction-sound was audible over the whole outer side of the chest. He had acute pain on pressure between the ribs. There was no dullness on percussion. He had continued the turpentine regularly, and had now taken six half-drachm doses without any inconvenience. The induration about the neck was decidedly diminishing, and the surface of the carbuncle was cleaning. A large blister was ordered to be applied