BACKACHE IN WOMEN: ITS SIGNIFICANCE AND TREATMENT

BY

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In the words of Eden and Lockyer "backache is the commonest of all the ailments of which women in different health complain." Notwithstanding the great prevalence of this condition and the vast amount of discomfort and ill-health for which it is responsible, it is extraordinary how little attention has been paid to its pathology and treatment. Whether regarded as a sort of curse which befell Eve, and, like labour pain, a thing to be tolerated, or as a mere symptom of any gynaecological disorder, backache as a pathological phenomenon in itself seldom receives adequate consideration.

It would hardly be an exaggeration to say that the majority of women with retroverted uterus or other disorders of the genitalia who seek treatment principally on account of backache, are not treated for the backache in itself, but for the local pelvic condition associated with it. Nevertheless it has been shown,¹ and it is indeed a common experience, that in a large proportion of cases treatment for the local condition alone fails to relieve the backache. The explanation of this apparent anomaly lies in the fact that backache in the majority of cases, although associated with disorder of the female reproductive organs, is not necessarily a symptom of such disorder, but a symptom of structural and postural changes in the back itself. Moreover, not only does faulty posture account for most cases of backache, but it is probably the underlying cause of much genital pathology. A flattened lumbar arch with bent back gives rise, under certain conditions, not only to backache, but to congested and diseased states of the uterus and adnexa; this statement will be amplified later.

The term "backache" is here taken to denote the common form of ache experienced by some women over the sacro-iliac joints, by others over the lumbar-sacral articulation, and generally in the region of the lumbar-sacral arch; it does not refer to pain due to gross orthopaedic conditions, disease of the vertebrae, or pathological conditions of the viscera apart from the female reproductive organs. This postural backache is the direct result of faulty posture, characteristic in pregnancy with its increased lordosis; common after pregnancy in the non-robust mother, with a diminished lordosis, heavy pendulous breasts, and bent back (the nursing attitude); frequent in all women who have borne children, in frail anaemic girls, especially those whose work involves much sitting or stooping, in all—both men and women—who are confined to bed for lengthy periods.

Anatomical Commentary

The lumbar vertebrae are held in position mainly by the anterior and posterior common ligaments, the supraspinous and interspinous ligaments. These are kept either taut or relaxed according to the attitude of the spine, and are subject to strain. When this strain is constantly repeated or prolonged, aching results. The ligaments are reinforced by the sacrospinalis muscle, which extends from the sacrum to the cervical region. This muscle is a large muscular and tendinous mass, larger in the lumbar region than elsewhere, and it is by its aid that spinal movements take place and the trunk is held erect, the brunt of such action falling on the lumbar-sacral region. When this muscle is strained, therefore, or when it is not strong enough to carry out its normal or increased functions, aching results in the lumbar-sacral region.

Effects of Posture on the Pelvic Viscera

The anterior surface of the lumbar arch, traced from the promontory of the sacrum upwards, forms an inclined plane making an angle of about 30 degrees with the vertical.² Thus a shelf is formed which projects between the abdominal and pelvic cavities. As the pelvic cavity inclines posteriorly at an angle of about 90 degrees to the abdominal cavity, the projecting lumbar shelf protects the pelvic viscera from direct pressure of the abdominal contents.³ When posture is faulty, however, and when, in addition, the anterior abdominal muscles are lax and stretched, the shape of the abdominal and pelvic cavities is modified, the lumbar arch is flattened, the protecting influence of the lumbar shelf is removed, intra-abdominal and intrapelvic pressure is increased, and the functions of the viscera are thus impaired. The effect in the pelvis is to produce a congested state of its contents—a fact of the greatest significance in the etiology of disorders, such as subinvolution, congestive types of dysmenorrhoea, and retroversion. These pathological conditions most frequently commence during the puerperium and the first two or three months following. During this period the abdominal muscles as a result of pregnancy are stretched and weakened, the tone of the sacrospinalis muscle is likewise impaired, the ligaments of the sacrum and lumbar arch are softened and stretched, and posture is consequently faulty. The abdominal viscera press directly upon a heavy involuting uterus, tending to retard involution, and for obvious mechanical reasons forming a potent factor in the production of retroversion.

It will be seen, therefore, that the frequent association of backache with such conditions as retroversion, subinvolution, dysmenorrhoea, congestion of the pelvic organs,⁴ is probably due to the existence of a common etiological factor—namely, a weak back, loss of muscle tone, faulty posture. This might serve to explain why the treatment of retroversion and other gynaecological disorders seldom relieves backache unless the back itself is treated, even to the neglect of a local displacement.

Factors in the Production of Backache

Normally the curves and structures of the back are so arranged that the trunk is supported and movements performed with a minimum expenditure of energy. Any deviation from this ideal arrangement renders the mechanism of the back far less efficient, and a much greater tax is imposed on the muscles and ligaments of the spine. Such a condition occurs during pregnancy, when, with an enlarging tumour, and a gradually changing centre of gravity, the muscular and ligamentous structures of the back have to withstand increasing strain in order to maintain the erect posture. Further, where there is a weakness and loss of tone of the back muscles, such as is found after pregnancies, during debilitating illnesses, in frail young women, or during menstruation, especially if there is associated menorrhagia, the strain that the lumbar-sacral spine is normally able to cope with becomes too great for the weakened structures, the arch tends to become flattened, the muscles being too weak or fatigued to support it, ligaments become strained, and backache results.

Analogy between Lumbar and Plantar Arches

The lumbar arch is in many respects analogous to the plantar arch in the foot. In the condition of flat-foot aching is caused by strain on the ligamentous structures of the flattened and weakened arch. This ache can usually be relieved by mechanically supporting the sagging arch. Further, by means of suitable exercises and massage, the muscles that normally support the

arch are gradually strengthened until such time as the mechanical support can be dispensed with and the arch maintained by muscles and ligaments that have been rested and restored to function.

Treatment of Backache

In the treatment of backache the most essential factor is the provision of adequate support and rest. This problem is not as simple as it appears at first sight. The support must be adjusted to the exact degree demanded by the patient to afford relief and comfort. In other words, it must relax the strained spinal ligaments and the musculature. A support which is too strong or too weak will fail in its purpose. Rest in bed without an arch support is of little value, and, in fact, is often harmful, as the vast majority of beds sag, the patient lying in a saucer-shaped hollow, with shoulders and feet well above the level of the lumbar arch, which becomes dorsiflexed. An ordinary cushion is of little use, as it cannot be suitably adjusted. It is obvious that the degree of support will vary according to the patient's body weight, the type of arch, and the attitude of the body—that is, the angle it makes with the horizontal at the point where the sacrum impinges on the bed.

To fulfil these conditions a simple apparatus has been devised, which has given most gratifying results in practice. Briefly the device consists of a rubber bag large enough to cover the lumbar arch, to which is connected a piece of rubber tubing sufficiently long to be brought round to the front of the patient. To the free end of the tubing is attached a valve and bulb, similar to that used on a sphygmomanometer. The rubber cushion is easily inflated to the required degree, the valve being used as a control. By its aid the back can be maintained in a constant state of relaxation and freedom from strain; only in this way can aching be effectively remedied.

Generally speaking, faulty posture in bed produces not only much discomfort, backache, disturbed sleep, and avoidable suffering, but other more serious effects. The typical patient propped up in the Fowler or sitting position has his back bent and lumbar arch flattened, with the result that the diaphragm is cramped and its function impaired. Consequently the patient ceases to breathe deeply, the lower lobes of the lungs are not ventilated satisfactorily, and post-operative pulmonary complications are very probable sequels. Finally, in all ailments, whether of the thoracic, abdominal, or pelvic viscera, faulty posture by crowding the organs, producing congestion, and interfering with function, must hamper successful treatment.

Summary

1. Faulty posture is the main cause of backache.
2. It is suggested that it is also a predisposing cause of much disease of the female pelvic organs.
3. An adjustable pneumatic support, devised for the relief of backache, is described.

I am indebted to Dr. James Young, Edinburgh, who has kindly given me permission to state that he has used the cushion device in the Royal Infirmary and in private practice for the last six months and has found it of great value. I am also much indebted to Mr. Leonard Phillips for the facilities he has given me to use the cushion for patients under his care at the Hospital for Women, Soho Square.

A detailed report on the results of this method of treatment will be published. The cushion has been made for me by Messrs. P. B. Cow and Co., Ltd., 46, Cheapside, London, E.C.2.

REFERENCES

- ¹ Adams: *Amer. Journ. Obstet. and Gynecol.*, 1927, xiv, 742.
- ² Goldthwaite: Shattuck Lecture, 1915, *Boston Med. and Surg. Journ.*, clxxii, 881.
- ³ Ogilvie: *Recent Advances of Surgery*, 1929, 266.
- ⁴ Comyns Berkeley: *Practitioner*, 1911, lxxxvii, 477.

SEPTICAEMIA AND ENCEPHALITIS IN RELATION TO VACCINATION

BY

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In their article on septicaemia and encephalitis in relation to vaccination, published in the *British Medical Journal* of June 21st, 1930, Drs. Temple Grey and Whittaker draw the all-important conclusion that no condition can be fairly described as encephalitis pure and simple unless septicaemia has been excluded as a possible cause by appropriate bacteriological examinations; and, further, that all cases of severe illness occurring in the three weeks after vaccination should be under hospital treatment in order that the special examinations may be performed, and if death occurs the necropsy should include bacteriological and histological investigation of the other tissues as well as those of the central nervous system. These conclusions, and the need for eliminating all other morbid conditions before ascribing any clinical cerebral or encephalitic signs to primary vaccination in an adult, prompt me to record a case, very similar to the first one of those reported by these authors, which was under my care.

Clinical History of Case

A recruit, aged 18, was admitted to the Queen Alexandra Military Hospital on May 27th, 1930, with a history of being ill for four days with headache and dizziness, and some frequency of micturition and diplopia. There was also malaise and loss of appetite, but no nausea or vomiting. He had had influenza in 1929; he had never been abroad. He was vaccinated for the first time in his life on May 7th, 1930, with Government lymph, in two places on the left arm just below the deltoid. On admission his temperature was 104.6°, pulse 124. The vaccination sites showed healthy scabs, with no surrounding inflammation. There were some septic sores on the skin over both insteps, and another septic area, partially covered with an unhealthy scab and surrounded by an area of cellulitis, in the region of the left external malleolus. The toes of the left foot also appeared to be inflamed. The lungs showed no evidence of active disease, but there was some deficiency of air entry and some impairment of note at the left base. The heart did not appear enlarged; there was no thrill, but the first sound at the apex was roughened. Liver edge not felt; spleen not palpable. The patient's mind was clear. The diplopia of which he had complained at the onset was no longer present; there was no squint, and the pupils reacted normally. Abdominal reflexes were absent, knee-jerks sluggish and difficult to obtain, right ankle-jerk absent, left plantar response "flexor," right doubtful. Sphincters controlled. There was slight but obvious ptosis of the eyelids, more marked on the right side.

On May 28th the temperature was 104.4°, pulse 120. Lumbar puncture showed the cerebro-spinal fluid to be under no increase of pressure; the fluid was clear and found to be sterile on culture. Lymphocytes present 6 per c.mm.; no increase of globulin or sugar. The Wassermann reaction proved negative. Blood culture produced a growth of *Staphylococcus albus*. Total leucocytes 14,000; polymorpho-nuclears 84 per cent., small lymphocytes 8 per cent., large lymphocytes 4 per cent., hyalines 3 per cent., eosinophils 1 per cent. Red blood cells 5,600,000; haemoglobin 80 per cent.

On May 29th the temperature was 104°, pulse 132. The right ptosis was more distinct, and there were now signs of meningeal involvement as shown by neck rigidity, irritability, and hypersensitiveness. There were epistaxis and twitching of the right eyelids, the limbs were much more rigid, plantar reflexes "flexor," abdominal, cremasteric, and epigastric reflexes absent. Arm-jerks were not obtained, except a feeble response in left triceps; knee-jerks absent, right ankle-jerk absent, left brisk. No diplopia, pupils normal. Sphincters controlled. Lumbar puncture proved the cerebro-spinal fluid to be clear and under no pressure.