

ORTHOPÆDIC SURGERY.*

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The term "Orthopædie" was first used in 1740 by a Frenchman named Andry who believed that deformities of the bones were not inevitable nor incurable. As a young tree can be induced to grow straight, if bound to suitable props, so, he said, could the young and still uncalcified bones of children under like treatment. Soon after this time the first tenotomy of the tendo Achillis was performed in England by Belfrage for the cure of club foot, and the operation was later perfected and made safe by Strohmeier of Munich.

The inspiration for the foundation of the Royal National Orthopædic Hospital came to a London physician, Dr. W. J. Little, who had, himself, a club foot. He went to Strohmeier for treatment and afterwards founded the hospital and showed a keen interest in its work throughout his long life. His son, Dr. Muirhead Little, also worked for the hospital for a very long time, so that between them, father and son established a record of just short of one hundred years' connection with the hospital.

The commonest cause of bone and joint disease is tuberculosis. The infection may be due to impure milk, but more often the child contracts the disease from its parents in infancy. Infected milk is much less common than it used to be, and there is no reason why milk should not be rendered safe by the process of Pasteurisation. A picture of tubercle bacilli was thrown on the screen, and was followed by a series of X-ray slides illustrating the appearance of a tuberculous lesion of the lumbar region of the spine. In the first picture the only evidence of disease was the slight narrowing of the space between the vertebræ due to the destruction of the intervertebral cartilage, but the subsequent slides showed increased blurring of the outlines indicating advancing necrosis. In the fifth slide there appeared the first signs of improvement under treatment, and the outlines of the vertebræ became clearer again. The cure of such a case takes from eighteen months to two years. In the olden days the result of spinal tuberculosis was the hunchback deformity which we associate with the figure of Punch; now with complete rest, good food, exposure to sunlight and fresh air the patient has every chance of recovery if the disease has not been allowed to progress too far. When the lesion has healed the weakened spine may be strengthened with a bone graft taken from the tibia or some other long bone. The graft is often about six inches long. The spine is, of course, rigid in the area where the graft is placed, but this does not matter, as usually there is very little, if any, mobility after the disease is cured. This operation is very rarely done to anybody over 50 years, and should not be performed on a child under the age of 12 years. When the graft operation has been performed the patient is put into a plaster bed. The method of making these was described and was of great interest. A full account can be found in *The Lancet*, January 2nd, 1937, p. 18, but the main points of the technique may be outlined here. The patient is placed upon a table lying on his back or face according to whether an anterior or posterior shell is required. A thin smear of vaseline is spread over the skin. The Plaster-of-Paris, 10 lb. to 12 pints of water at 120° F., is mixed in a basin to an even consistency and must be constantly stirred. Ten or twelve doubled sheets of plaster muslin, cut to the patient's measurements, are dipped in succession into the bath, then stripped of their superfluous cream and handed to the surgeon and two assistants who open them out,

remove the creases and let them fall over the patient. As each sheet is laid on it is moulded to the patient. Speed is essential as the warm plaster sets very rapidly. When all the sheets are applied the shell is lifted from the patient and an area for nursing purposes is cut out also, if necessary, for ventilation or relief of pressure. When dry the plaster is mounted on wooden supports and a lining is fitted of linen sheeting over thin blanket. The advantage of this method of making a plaster bed is that it is very rapid and the shell is light and durable. As the bed fits the patient perfectly it is very comfortable, and some of the patients even ask to take them home when they leave hospital. Plaster beds are used for adult patients with tuberculosis of the spine, cases of paraplegia, whether due to anterior poliomyelitis or spinal abscess, and some cases of fracture of the spine besides many other uses. The anterior shells are often used in the later treatment of tuberculous spines in children, also in the post-operative treatment of laminectomy cases.

The next slide showed a picture of a little girl with tuberculosis of the hip joint. The limb on the affected side was adducted and flexed at both hip and knee joints. Traction is required to restore the muscles to their normal function and, as a rule, the weight and pulley method is preferred to immobilisation in a Jones' splint, as the former method allows a certain amount of movement and, therefore, when the patient is allowed up the limb is not so weak as it would have been if completely immobilised. When the joint is cured the hip may be strengthened with a bone graft placed across the joint. As ankylosis of the joint has usually taken place the bone graft cannot cause further loss of mobility. To illustrate the fact that grafts are living structures a slide was shown of a graft which had been broken accidentally, but which was healing like any other bone by the process of callus formation.

One of the factors which used to be responsible for much ill health in children was the unsuitable and manifold clothing put upon them. A picture was shown of the horrible uniform of a cripples' home before the modern enlightened treatment came into existence. A child in the Royal National Orthopædic Hospital during the summer is now dressed only in sun knickers and his splint or spinal support if he has them. The power of sunlight was described and the therapeutic value of fresh air, which is equally important, especially where tuberculosis is concerned. Even dressings are done in the open air in the summer. If the patients require it they are treated with ultra-violet radiation during the winter. Cod liver oil and malt is given to each patient daily, except sometimes in the heat of the summer.

After tuberculosis, infantile paralysis probably accounts for the greatest number of orthopædic cases. It is, of course, much less common than of old. A picture was shown of a boy being taught to walk. It is first necessary to correct the malposition of the affected limb or limbs and afterwards to restore the function of the muscles by means of massage and remedial exercises.

Club foot, which is often a congenital deformity, was described. The treatment is by means of suitable splinting and manipulation if the child is very young, and this usually results in perfect cure. Should this have been neglected, however, an open operation becomes necessary and the results are not always so good.

Rickets, a disease which should never occur, is responsible for bending and deformity of the bones of the children particularly the bones of the legs. A picture was shown of a case too severe to be cured by splinting. Osteoclasia was necessary and the limb was then put up in plaster in the corrected position.

Septic infection of the bones, such as osteomyelitis when it has passed the acute stage, accounts for a certain number

* A lecture delivered to the Administration Class of the British College of Nurses when visiting the Royal National Orthopædic Hospital, Stanmore, on March 9th.

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