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THE PROBLEM OF THE RELAPSED CLUB FOOT

Club foot in infants is one of the conditions described by Hippocrates, and he was clearly familiar with the basic principles revived by Kite thirty years ago; but the problem of the relapsed club foot has been tackled only comparatively recently. W. J. Little in 1839 described his success with tenotomies and careful splinting, and it was only in the second half of the nineteenth century that a "complete and permanent cure" was found by William Adams with a mutilating operation involving arthrodesis of the major joints in the foot. It soon became apparent that the results of such drastic surgery were disappointing and that further relapse could occur. Since then a solution has been sought by many different surgeons but the multiplicity of operations is an indication that the problem has not been solved. Each operation has had success—partial or complete—claimed for it, but the visitor to orthopaedic centres still finds many differing views, and their out-patient departments provide ample evidence that we are a long way from finding a satisfactory cure for all club feet.

The difficulties that face any worker in this field are great, among them the uncertain etiology and the doubt as to the site of the primary deformity, a difficulty which is increased by the fact that secondary changes are well established by the time the child is born. If it is assumed that the primary deformity is in the midtarsal joint the complexity of the secondary deformities raises further problems, and these may involve most of the structures below the knee; so although the name talipes concentrates attention upon the foot, account has to be taken of abnormalities well above that level. Add to this the variations in the severity of the deformity and in the response of the individual foot to treatment, and the surgeon may be faced with a problem that defeats his skill, persistence and ingenuity.

In the relapsed club foot the two stages of securing correction first and then maintaining it are sometimes confused, but they should be clearly distinguished, at least in the surgeon's mind. No correction can be considered complete until there is full passive correction, and no foot can be considered secure from relapse until the child has a plantigrade foot and until muscle balance has been restored.

The two papers in this number of the *Journal* show a different approach to the problem. Singer postulates full passive correction before any tendon transplant is undertaken, and there is no doubt that he is right on this point; but the difficulty arises when, as is sometimes the case, this is found to be impossible of achievement. Tendon transfer as an isolated operation has only a limited application. By experience Singer has found the disadvantages of using tibialis anterior to restore muscle balance, and his results with tibialis posterior are encouraging. If the tendon transfer were performed at the same time as a soft-tissue correction it might well increase the scope of the operation.

Dillwyn Evans assumes that the primary displacement occurs in the midtarsal joint, a complex series of secondary and adaptive changes resulting in the familiar club foot deformity, and he bases his treatment upon that hypothesis. He stresses the importance of dividing the tight structures at the inner side of the foot and of reducing the subluxated head of the talus into its socket, but he has found that this is inadequate until the relative over-lengthening of the outer column of the foot has been corrected and stability restored by arthrodesis of the

calcaneo-cuboid joint. Sufficient bone must be resected to permit lateral rotation of the navicular bone, so bringing the first metatarsal bone into line with the talus. He claims that by this means the other deformities can be controlled, and that the relative lengths of the medial and lateral columns of the foot are partly responsible for the valgus and varus inclinations of the heel. His statement that an equino-varus deformity can be produced by lengthening of the calcaneum is also of interest.

This operation deserves careful consideration. It is not just one more attempt to deal with the relapsed club foot. It is based upon a hypothesis that is widely, if not universally, held; it has the merit of correcting the deformity without doing extensive damage and of leaving the child with a plantigrade, well balanced foot. If it can be shown that the operation is effective without a tendon transfer, it will represent a great advance in the surgery of this difficult field.

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