SUMMARY AND CONCLUSION

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Hippocrates (1927) was the first to advocate orthopaedic treatment of the idiopathic clubfoot by gentle manipulation and bandaging. According to ***Turco (1979)*** manipulative treatment leads to a 35% success rate, whereas surgery is the method of treatment in about 65% of idiopathic talipes equino varus feet (CTEV).

Regardless of early and adequate surgery, the failure rate remains as high as 20%. When facing complex congenital foot deformities, this rate of failure is even higher.

In the relapsed clubfoot and neglected cases, the recommended treatment will include repeated soft tissue procedures, osteotomies, bony resection, or arthrodesis. Although, a satisfactory and permanent correction can be achieved, the salvage procedures correct only one deformity at a time. They are preferably performed at skeletal maturity and often produce a short stiff foot. By progressive soft tissue stretching, the external fixator seems to avoid the above problems, allowing a simultaneous three dimentional correction at the same time without the need for bony resection or fusion.

Twenty patients of relapsed and neglected clubfoot treated by an assembled external fixator followed by serial corrective casting, above knee night splint, and medical boot. The average age at time of application of the fixator was 8.5 year, and the duration of follow up care varied from 9 to 30 months.

Dealing with the treatment of relapsed idiopathic clubfeet, many major problems resulting from previous surgeries; these include abundant scar tissue, a risk of neurovascular and skin compromise, and residual bone and joint deformation, all factors limiting the extent of the final correction. Moreover, in many patients, bone resection or fusion will be needed to improve the clinical appearance of the foot, leading to a stiff and shortened foot.

The basic advantage of this external fixator is the progressive stretching of the soft tissue and neurovascular structures, allowing significant correction with fewer risks of neurovascular or skin compromise. In younger patients, after foot correction, bone and cartilage remodeling can be expected, which helps to maintain a lasting correction.

This fixator has some advantages over conventional methods. It achieves three-dimensional correction in the skeletally immature patients. Moreover, if a residual deformity persists, it can allow a later arthrodesis in a better position without extensive bony resection. A plantar grade foot can be obtained but only a long-term follow up study will help to determine the optimal age for surgery, as well as the long-term functional results.

Also, the fixator has advantages over the ***Ilizarov***, as it is more simple, less expensive, and its application is so easy.

Using complete clinical evaluation and a separate radiographic measurement, according to ***Simons*** rating system ***(1985)***, satisfactory results were obtained in 70% and unsatisfactory result in 30% of patients.

Maintenance of the surgical correction by the fixator is achieved by serial plaster casts, above knee night splint, medical boot and a strict protocol of physical therapy.

From this study, we can conclude that; this external fixator represents an attractive alternative to invasive surgery for the replaced and neglected clubfoot as it is used as a distraction device, but generally without the use of osteotomies. The device offer an alternative to conventional surgery and has several significant advantage.

We are currently performing further biomechanical studies of the fixator assembly to produce an improved version. This method will need a future, careful and longer studies to answer certain questions before its universal application is recommended.