



Letter to the Editor

Commentary on “Treatment of complex foot deformities with hexapod external fixator in growing children and young adult patients”


We were most interested to read about Riganti et al.'s [1] use of a hexapod external fixator (the TL-HEX™ HEF, Orthofix, Lewisville, TX, USA) in complex foot deformities. Indeed, we have been performing surgery for complex foot deformities in children (and especially clubfoot) for the last few years. The main challenge is to obtain plantigrade pain-free gait and avoid the creation of a short foot due to multiple wedge resection, osteotomy, and arthrodesis. We have long sought a simple, effective technique that minimizes the complications associated with open surgical correction (i.e. wound healing problems, neurovascular injuries, and incomplete correction). In the last few decades, the Ilizarov circular external fixator has become popular for the correction of major foot deformities through progressive distraction; this has been inspired by successive cast corrections and tissue expansion techniques used in plastic surgery. Based on the principle of distraction osteogenesis, the Taylor Spatial Frame and the HEF have been used to progressively correct limb deformities.

We recently used a HEF in four cases of complex clubfoot.

Although we have not yet performed supramalleolar osteotomy, we implemented open Achilles tendon Z-lengthening and V-osteotomy at the midfoot (in 3 cases) and also at the calcaneus (in the fourth case).

In all cases, we found that two of the three rings started to touch each other during the correction period. To avoid this problem, it may be preferable to add an additional (4th) distal ring and modify the reference ring. Furthermore, we enabled gait by adding a walking support to the foot rings.

With the exception of the contact between the rings, we observed no major complications. One year later, gait was plantigrade and pain-free in all cases. Since then, we have notably improved our HEF technique by training on cadavers to fix rings

and add them in the correct position. We consider that the HEF is one of the best options for correcting complex foot deformities in children. The fixator enables simultaneous corrections in several planes, all of which can be planned with the associated software. We congratulate Riganti et al. on finding an effective, safe means of foot correction, and recommend this technique.

Conflict of interest

None declared.

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References

- [1] Riganti S, Coppa V, Nasto LA, Di Stadio M, Calevo MG, Gigante AP, et al. Treatment of complex foot deformities with hexapod external fixator in growing children and young adult patients. *Foot Ankle Surg* 2018; doi:<http://dx.doi.org/10.1016/j.fas.2018.07.001> pii: S1268-7731(18)30276-5.

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