Minidestructive devise for the treatment of metatarsodactyly (congenital short metatarsal)

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My disclosure is in the Final AOFAS Mobile App.
I have no potential conflicts with this presentation.
Introduction

Metatarsodactyly is a foot deformity. Due to short metatarsal the toe appears prominent on the dorsum of the foot. Causing pain on shoe wear and transfer metatarsalgia in addition to cosmetic considerations. Gradual lengthening of the involved metatarsal is used in the treatment of this disorder.
Methods

- Retrospective presentation of the use of minidestructive device in the treatment of metatarsodactylie. The treatment was introduced in Hamad Hospital in 2011. Procedure: the pins of a mini lengthening device were inserted then osteotomy (using drill holes and osteotome) of the proximal third of the metatarsal was performed. After 1 week the distraction starts. It is performed by the patient to achieve desired length at a rate of $\frac{1}{2}$ mm per day. Callus formation is observed. For extension contracture of the involved toe lengthening of the extensor tendon with soft tissue release and K-wire fixation is used.
Case study:
a 22 year old female with bilateral Metatarsodactyly more severe in right side causing right foot pain with walking and shoe wear
Procedure:
The pins of a mini lengthening device were inserted. Osteotomy of the proximal third of the 4th metatarsal was then performed using osteotome through pre-drilled holes.
After 1 week the distraction started done by the patient ½ mm per day.
Gradual lengthening took about 6 week to achieve 22 mm lengthening with good callus formation. During the lengthening, extension contracture of the 4th toe occurred and the patient had lengthening of the extensor tendon with soft tissue release and K-wire fixation.
The mini external fixator was kept 5 months for the lengthening and the bone healing then it was removed in the clinic.
Now the patient is happy with the result, walking full WB with no pain and wearing any type of shoes.
RESULT:
Satisfactory correction with minimal complications could be achieved with this method. The treatment requires the use of the mini external fixator for several months. Gradual distraction and regular outpatient follow up. Wire fixation was used to counteract toe extension tendency.
Conclusion:

- Good lengthening could be achieved with this method with minimal complications.
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