To add whether whether reconstructive foot/floor surgery (IFASs) and concurrent lengthening through a distal tibial corticotomy (DTC) using circular external fixator (CEF) after a successful treatment opion for patients with ankle length discrepancy (ALD) as a component of their overall deformity.

### Literature Review

- **Purpose**: To address whether whether reconstructive foot/floor surgery (IFASs) and concurrent lengthening through a distal tibial corticotomy (DTC) using circular external fixator (CEF) after a successful treatment opion for patients with ankle length discrepancy (ALD) as a component of their overall deformity.

### Methods

#### Table 2 - Retrospective Review of Clinical & Radiographic Data

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Clinical &amp; radiographic data</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical correction of foot/floor deformity using circular external fixator (CEF)</td>
<td>100% immediate post-operative range of motion</td>
<td>90% at time of follow-up</td>
</tr>
<tr>
<td>Internal fixation and Intramedullary nail fixation(plates and screws)</td>
<td>100% immediate post-operative range of motion</td>
<td>90% at time of follow-up</td>
</tr>
</tbody>
</table>

#### Table 1 - Variate Methods in Address (MM-19)

<table>
<thead>
<tr>
<th>Methods in Address</th>
<th>Patients</th>
<th>Pathological Treatment</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myerson et al. J Bone Joint Surg (Br). 2008</td>
<td>36</td>
<td>36 patients who had undergone ankle arthrodesis</td>
<td>30 patients who had undergone ankle arthrodesis</td>
</tr>
<tr>
<td>Schoenleber et al. Foot Ankle Int. 2010</td>
<td>25</td>
<td>25 patients who had undergone ankle arthrodesis</td>
<td>25 patients who had undergone ankle arthrodesis</td>
</tr>
<tr>
<td>Fragomen AT, Borst E, Schachter L, Lyman S, Rozbruch SR. Complex Ankle Arthrodesis Using the Ilizarov Method – Morbidity and Complications. 2010</td>
<td>30</td>
<td>30 patients who had undergone ankle arthrodesis</td>
<td>30 patients who had undergone ankle arthrodesis</td>
</tr>
<tr>
<td>Keating JF, Simpson AHR, Robinson CM. The Management of Fractures with Bone Loss. 2015</td>
<td>40</td>
<td>40 patients who had undergone ankle arthrodesis</td>
<td>40 patients who had undergone ankle arthrodesis</td>
</tr>
</tbody>
</table>

### Patients and Surgical Concept

#### Demographics

- **The mean patient age was 53.4 years**
- **There were 36 male and 14 female patients**, with an **average BMI of 28.14**
- **Two patients presented with a history of smoking**
- **There was a mean of 2.8 years from initial injury to presentation**

#### Results

- **The common cause of deformity was distal fracture (61%)**
- **The most common cause of deformity was distal fracture (61%)**
- **The second most common cause of deformity was a gunshot wound (40%)**

The concept of Ilizarov’s Tension–Relaxation concept illustrates a 3-5% increase in anterior translation during distraction osteogenesis (20). These biological principles support a potential benefit to fusion with concurrent lengthening through a distal tibial corticotomy when performing a successful lengthening or an acute correction for distal tibial deformity (Figure 1).

#### Procedures

- **Surgical coronal resection of foot/floor deformity using circular external fixator (CEF)**
- **Internal fixation and Intramedullary nail fixation(plates and screws)**

#### Discussion

- **The current study showed a 15% fusion rate**
- **The overall rate of success was 70%**
- **All of the surgery resulted in a mean follow-up of 16 months**
- **The current study was not performed on a large scale study**

We conclude that the ability to address the foot/floor surgery at the site of reconstruction using DTC is a successful treatment option comparable to other methods. In the literature, however, there is no consensus in the literature as to the technique. Further studies will be required to elucidate the most effective method for these challenging cases.

### References

- Schoenleber et al. Foot Ankle Int. 2010
- Fragomen AT, Borst E, Schachter L, Lyman S, Rozbruch SR. Complex Ankle Arthrodesis Using the Ilizarov Method – Morbidity and Complications. 2010
- Keating JF, Simpson AHR, Robinson CM. The Management of Fractures with Bone Loss. 2015