Treatment of Moderate Hallux Valgus by Percutaneous, Extra articular Reverse-L Chevron (P.E.R.C) osteotomy

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DISCLOSURE

NO CONFLICT TO DISCLOSE

Treatment of moderate hallux valgus by Percutaneous, Extra articular Reverse-L Chevron (P.E.R.C) Osteotomy

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Our disclosures are in the Final AOFAS Mobile App
We have no potential conflicts with this presentation
CHEVRON OSTEOTOMY IS:

- Distal osteotomy
- DMMA well revised
- IMA well revised until 20°

60° V uniplanar chevron osteotomy
(Austin 1981)

90° L osteotomy
- Multiplanar
- Fixed
+/- Lateral release
+/- Akin ostotomy

RELIABLE

CONSTANTLY EVOLVING
MATERIALS & METHODS

IMA < 20°  Index plus or plus-minus
HVA < 40°  ROM > 80° and congruent joint

Preoperative: range of motion (ROM), forefoot type, AOFAS score, metatarsus index, HVA, IMA, DMMA, DM2A, IPA

Postoperative: follow-up at 4 and 12 months, then every year, patient satisfaction, gestures done, complications.

Data analysis: Student test and Mann Withney Wilcoxon test
Percutaneous portal based on anatomic study
Then dorsal cut is performed
P.E.R.C OSTEOTOMY
plantar cut, plantar direction and then directed proximally
PATIENTS

- 38 patients / 45 cases
- 48 years (17-69)
- 35 womens / 3 mens

RESULTS

- Mean Follow up: 59.1 (45.9 – 75.2) months
- 97% satisfied / very satisfied

Mean

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tbody>
<tr>
<td>HVA</td>
<td>26.2</td>
<td>4.9</td>
</tr>
<tr>
<td>IMA</td>
<td>11.8°</td>
<td>2.7°</td>
</tr>
<tr>
<td>DMMA</td>
<td>12.1°</td>
<td>4.2°</td>
</tr>
<tr>
<td>DM2A</td>
<td>1.4°</td>
<td>4.1°</td>
</tr>
<tr>
<td>IPA</td>
<td>12.0°</td>
<td>3.1°</td>
</tr>
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</table>

45 P.E.R.C osteotomies

37 Akin osteotomies with 20 fixed

22 Lateral release

COMPLICATIONS

- Four secondary screw removals performed in the first year experience
- One had delayed skin healing
- One painful residual exostosis
- One fixation failure

97% satisfied / very satisfied
DISCUSSION

97% patients very satisfied
- Correction of deformity
- Smalls incisions
- Good post operative pain relief

COMPLICATIONS
- Learning curve linked with percutaneous bone fixation

Significant improvements in the HVA, IMA, PASA, TASA, IPA
- Metatarsus varus correction (lateral translation)
- DMMA correction (chevron multiplanar dorsal cut)

AOFAS score significant improvement

Significant improvement of MTP ROM
- No bunionectomy and bone debris
- Extra articular chevron: more proximal
- Percutaneous approach
Results of this patient series is comparable with other open or percutaneous series.

P.E.R.C OSTEOTOMY CORRECTS:

As well as open procedures (HVA, IMA, DMMA)

Better IMA than Isham Reverdin

As well IMA than Hohmann

But with small incisions

And better ROM

Without external K-wire

Each osteotomy has specific complications

<table>
<thead>
<tr>
<th>SCARF</th>
<th>OPEN CHEVRON</th>
<th>ISHAM REVERDIN</th>
<th>HOHMANN</th>
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<tbody>
<tr>
<td>Troughing</td>
<td>Head necrosis</td>
<td>Stiffness</td>
<td>Recurrence</td>
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<tr>
<td></td>
<td></td>
<td>Arthritis</td>
<td>Superficial wound infection</td>
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CONCLUSION

- P.E.R.C osteotomy is innovative, reliable and safe
- Percutaneous surgery is only a tool. Approved chevron osteotomy may be use
- Provides good correction and good ROM