The bunionette the epidemiological and results from technical Ludloff study

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My disclosure is in the Final AOFAS Mobile App. I have no potential conflicts with this presentation.
The bunionette is a bone prominence of the lateral aspect of the fifth metatarsal head\textsuperscript{1,2,3} and literature describe a wide number of the techniques to treatment of bunionette\textsuperscript{4,5,6,7,8}, but it is much restricted about techniques for correction and realignment of the moderate and severe cases and the angle capacity of correction and the index of complications in shaft or proximal osteotomy in the fifth metatarsal\textsuperscript{4,9,10,11}.

**OBJECTIVE**

We was investigate the relationship between epidemiological, clinical and radiographic evaluation of bunionette with the results after treated by Ludloff technique\textsuperscript{4}
MATERIAL AND METHODS

- The study is retrospective series with clinical and radiographic evaluation of patients with bunionette.
- The sample consisted of 35 patients between 2008 and 2012, but only 19 patients (27 feet) included in the study, underwent correction by osteotomy Ludloff with more 2 years of follow-up.
- 11 (57.9%) unilateral and 8 (42.1%) bilateral, with slight predominance of the right side (55.5%).
- Gender, 18 (94.7%) patients were women and 1 (5.3%) man.
- The mean age was 45.5 years, ranging between 24 and 72 years.
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MATERIAL AND METHODS
Coughlin classification\(^3\) were type 3(59.2\%) (16 cases) and by type 4(40.7\%)(11 cases).

LUDLOFF TECHNIQUE
Ludloff osteotomy Steps: A-incision – head view; B- head resection; C- osteotomy line and first screw- proximal; D – second screw fixation; E / F - Perfil / AP x-ray with correction of the angle
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**RESULT**

- AOFAS score, the mean preoperatively was 53.45 (± 15.7) and points postoperatively was 81.80 (± 9.47) points, with statistical difference between the scores (p = 0.00002).

- The average diameter of the head of the 5th metatarsal was 12.99(± 1.46). This parameter had statistical difference (p = 0.0003)

- The intermetatarsal angle of 4 ° and 5 ° rays averaged 12.19 ° (± 1.3 °) preoperatively and 8.42° (± 1.83 °) postoperatively, with statistically significant difference(p = 0.00002).

- The angle metatarsal phalangeal-the 5th preoperative radius was 14.12°(± 6.56 °) of average and 6.67 °(± 4.91 °) postoperatively, with statistical difference(p = 0 , 0001).
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CASE

M.D.P., 48 y. Female, right side fig.1 preoperative a-clinical b-AP xray; fig 2 (a-b) POI; fig 3 (a-b) 3y 6months follow-up
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**DISCUSSION**

- The sex factor and the mean age of our patients was similar to the literature, but present bilateral surgery rate of 42.1% slightly above of the literature and the right side was affected in 55.5% but the assessed literature did not analyze this given, but it doesn’t have statistical significance in the result of the cases.

- The Coughlin classification, type 3 was most cases in this study, with 59.2% of cases, followed of the type 4, in 40.7%. We excluded cases on type 1 or 2 in our series, because the literature doesn’t suggest diaphysis osteotomy in these cases. It is agree with the literature, because we use the technique of Ludloff for axis correction in severe cases of the type 3 and 4 only.
DISCUSSION

✓ The AOFAS score showed a statistically significant improvement from preoperative to postoperative average of 27.35 points and patients report that they were satisfied with the result in 93.11% of cases\(^5,6,10,11\). It is very similar with results in the literature but the most series include cases type 1 and or 2 of the Coughlin classification\(^5,7,9,10,11\).

✓ The diameter of the head of the 5th metatarsal was measured only in one article\(^1\), they described the wide has relationship with position of the foot in x-ray where the average on preoperative was 12.8mm and postoperative 12.9mm, where the author did not do distal metatarsal head resection. These data are similar to our findings in the preoperative 12.99mm, but different in postoperative 11.13mm because we performed resection of the excrescence of the head, with a statistically significant difference.
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DISCUSSION

✓ The intermetatarsal angle between the 4th and 5th rays showed correction in average 3.77° of 12.19° preoperative angle to postoperative of 8.42°, all cases we did get correction into the normal angle second the literature\(^5,6,7,8,9\), but the literatura describe that pain is indifferent with the angle, but it has relationship with lateral head proeminence.

✓ the average of the metatarsal-phalanx angle preoperatively was of 14.12° with an average correction of 8.45° for postoperative 5.67° on average in this study. The correction was effective and statistically significant postoperatively\(^5,6,7,8,9,10,11\).

this shows that the correction of the angle of the mttfalanx joint of 5° has relationship with of Ludloff osteotomy\(^4\) through of realignment of the shafts of 5\(^{th}\) ray mainly with correction of the 4th and 5th angle, which was not described in the literature to severe cases type 3 or 4.
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CONCLUSION

The study presents that age, sex, side don’t have relationship with the results, but the correction of angle between the 4th and 5th metatarsal ray, metatarsalphalangeal width have relation with good results.

This study demonstrates that Ludloff technique is effective and an alternative for the treatment of bunionette of type 3 and 4, with correction of the radiographic parameters and clinical satisfaction in 93.11% of cases.
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Bibliography Reference