

PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics

Manuscript NO: 61304

Title: Arthroereisis In Juvenile Flexible Flatfoot: Which Device We Should Implant?

Reviewer's code: 04389493

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Adjunct Professor, Doctor

Reviewer's Country/Territory: Reviewer_Country

Author's Country/Territory: Italy

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Reviewer chosen by: Ya-Juan Ma

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input type="checkbox"/> Anonymous <input checked="" type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

Dear Authors It was a pleasure to review this paper. The title reflects the main subject of the manuscript.

Q1) However, please change the sentence “Which Device We Should Implant?” into “Which Device Should We Implant?”.

A1) Thanks for your suggestion, title was modified following reviewers’ comments.

Q2) Abstract summarize and reflect the work described in the manuscript. In the background section the sentence “The AR are classified in Subtalar AR and extra-articular screw (CS).” Is not clear. Please correct and add the meaning for CS (Calcaneo Stop?).

A2) Thanks for your suggestion, requested modifies were performed.

Q3) In the methods section the term SESA should be explained (Subtalar extra-articular screw arthroereisis? (SESA))

A3) Thanks for your suggestion, both the terms are included in the research. For this reason, the abbreviation was not previously explained.

Q4) Abstract conclusions shows some weaknesses: “Both AR procedures improved clinical and radiological parameters.” is not relevant for the study purpose since the main question is “Which Device Should We Implant?”.

Q5) At the end of the abstract please change the sentence “than subtalar self-locking implants.” into “compared to other implants”: the terms “subtalar self-locking implants” was not described in the background abstract section.

A4 and A5) Thanks for your suggestion, abstract conclusion was partially re-written.

Q6) Key words reflect the focus of the manuscript. The manuscript adequately describe the background.

A6) Thanks for your positive comment.

Q7) In the introduction section please add “early fatigue” to the symptoms.

A7) A phrase was added in the text.

Q8) The sentence “Surgical treatment is indicated in over 10-years-old symptomatic

children” needs a reference. According to which authors?. In many papers surgical treatment is recommended for cases of symptomatic flatfoot after 8 years of age. Moreover, this is not consistent with the discussion section in which Authors state: “In juvenile FFFs the most common operation age period is 8 to 14 years old”.

A8) Thanks for your suggestion, requested modifies were performed.

Q9) When citing Alvarez impact blocking screw as “the first calcaneo-stop (CS) procedure description” always remember Buruturan JM (1979) El calcaneo-stop para el tratamiento del valgo de talon infantil. *Chirurgia del piede* 3: 319–322.

A9) Thanks for your suggestion, requested modifies were performed.

Q10) Please try to better organize the introduction section. You stated that the aim of the paper is to “report the comparison between Subtalar AR and CS procedures”. In which terms? Device materials? Indications? X-Rays measurements before and after surgery? Complications? Patients’ satisfaction? Clinical outcomes? Sport resumption? The result section and the discussion section should connect to the introduction describing some or all of these topics, better if divided into paragraphs.

A10) Thanks for your suggestion, requested modifies were performed.

Q11) Methods are described in adequate detail. However, consider to use this classification in the introduction section. “Two subtalar implant types were considered: impact blocking devices and self-locking implants [12]. Impact blocking devices constituted by a stem (fixed in the sinus tarsi vertically just anteriorly to the posterior subtalar surface) and a head, that interferes with the talar lateral process, limiting its internal rotation. Self-locking implants are inserted in the sinus tarsi along its main axis, supporting the talar neck, avoiding contact between talar lateral process and sinus tarsi floor and reducing talar adduction and plantar flexion.” The research objectives are achieved by the experiments used in this study.

A11) Thanks for your positive comment. The classification was included in the

introduction.

Q12) Please organize the result section as suggested in the introduction section comments.

Q13) Discussion: in order to highlighting the key points concisely, clearly and logically, please organize the discussion section as suggested in the introduction section comments, discussing all the topics useful to compare Subtalar AR and CS procedures.

A12 and A13) Thank for your suggestion. Results and Discussion was partially re-written according to your comment.

Q14) Tables are appropriately illustrative of the paper contents. The manuscript meets the requirements of biostatistics. The manuscript cites appropriately the latest, important and authoritative references in the introduction and discussion sections. Authors prepared the manuscript according to the appropriate research methods and reporting. The manuscript meet the requirements of ethics. In conclusion, the manuscript is well presented in style, language and grammar. The paper addresses an actual topic and provides an update on the evidence related to AR treatment in FFF patients, reporting the comparison between Subtalar AR and CS procedures. The conclusions appropriately summarize the data that this study provided. Only some improvements are needed in order to make it eligible for publication (minor revision).

A14) thanks for your positive comment

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Author's Country/Territory: Italy

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SPECIFIC COMMENTS TO AUTHORS

The manuscript aims to review the literature of the latest 5 years and report which device is preferable for surgical treatment of juvenile flexible flatfoot, comparing impact blocking devices and self-locking implants. The authors declared that they used the PRISMA guidelines. The authors concluded that, despite both implants improved clinical and radiological parameters, impact blocking devices showed a lower rate of complications compared to self-locking implants. Overall, the manuscript presents several weaknesses, and the conclusions are not supported by methodology or results. Therefore, I regret to say that it is not suitable for publication in the WJO, in the present form. I recommend major revisions.

Q1) TITLE: the type of study should be clarified. For example, "...a narrative review of the last five years' literature.." could be appropriate

A1) Thank for your suggestion, title was modified following reviewers comments.

Q2) INTRODUCTION: 1. References should be reported at the end of the sentence. 2. "...a loss of the medial arch and by an increase in the support base with valgus of the hindfoot..." should be: "...a loss of the medial arch, an increase of the heel valgus and of the plantar pressure..." 3. "...but pain could occur..." should be "...may occur..." 4. "...over 10-years-old symptomatic children..." should be "...symptomatic children over 10-years-old..." 5. "several authors [8,9]" should be "...some authors..." 6. "...in sinus tarsus. Nowadays, the theory was not supported by any findings..." should be "...in sinus tarsi, although this theory has not been yet supported by experimental evidence..." 7. "Aim of the study is to analyze the last 5 years available literature to provide an update on the evidence related to AR treatment in FFF patients and report the comparison between Subtalar AR and CS procedures." should be "...The aim of the study was to review the literature of the last five years regarding the surgical treatment of juvenile FFF with a focus on the AR procedures..."

A2) Requested modifies were performed

Q3) METHODS 1. The methods section should start with the description of the study protocol, focusing on one or more research questions that should be clearly stated (and consequently synthesized in the abstract).

A3) Study design section was added.

Q4) 2. The reasons why this systematic review was limited to the last five years should be clarified. Is this review an update of a previous one? If not, I suggest to not limit the research to the last five years.

A4) The research was limited to the last 5 years in order to avoid a selection bias. In fact in previous studies could be reported “old type” Arthroereisis results, which recorded higher complication rate and are no longer traded.

Q5) 3. The methods section should be organized in subheadings: a) search strategy; b) study selection and inclusion criteria; c) data extraction and quality assessment; d) evidence synthesis. 4. The search strategy should more clearly reported. For example, if you checked the reference list of the articles screened, you should specify it here.

A5) The methods section was re-organized as the reviewer suggested.

Q6) 5. The study selection and inclusion criteria should be more clearly stated. For example, did you consider other surgical treatment for juvenile FFF (osteotomies, soft tissue procedures...)? Did you consider only studies reporting subtalar AR/CS in children? Did you exclude studies on adults? Did you exclude systematic reviews? What does it mean “...those (studies) with poor scientific methodology...”? what were the criteria to exclude a study based on the scientific methodology? I suppose that the scientific methodology can be easily assessed by analyzing the risk of bias; therefore, I think that the studies cannot be excluded - but they must be rated - based on their scientific methodology.

A6) Thanks for your suggestion. Inclusion and exclusion criteria were explained clearer. Initially, abstracts, case reports, conference presentations, editorials were excluded for

their poor methodology.

Q7) 6. The data extraction and quality assessment must be more extensively reported. For the data extraction please report each data that you considered for your review (author, year of publication, type of study (prospective, retrospective, case series, case-control, RCT), sample size, age with ranges, type of surgery, additional procedures, type of implant (resorbable, non-resorbable), type of outcome measure (physician-based, patient-based, radiographic) complications....).

Q8) 7. Evidence synthesis: please specify what kind of evidence you considered for the study. If you considered only surgical complications (and not clinical and functional or radiographic outcomes) it should be stated in this section (and obviously discussed later in the discussion as a possible limitation of the present review).

A7 and A8) Thanks for your suggestion. Requested information were added in Evidence synthesis section. All the requested features are reported in results section and table 1.

Q9) Please specify how you assessed studies reporting more than one group of patients undergoing different treatments. Did you analyze them separately?

A9) Literature arthroereisis comparisons are limited. Moreover, in the few case-series included aimed in the to invested procedures comparison numerous controversial are present. For example, it is not clear if the procedures are performed by the same surgeon and the specific indication. In order to avoid selection bias the series were separately assessed.

Q10) Please specify if the synthesis was exclusively narrative and the reasons why a meta-analysis was not performed. If you do not provide clear statistical analysis you cannot draw any conclusion about the superiority of a treatment compared to another one.

A10) A clinical and radiological scores variations were recorded among the studies selection. Often more than one measurement was performed in order to evaluate different disease features. Moreover, no FFF specific score or x-ray lines were developed, and

randomized clinical trials are missing, as well as few are the case-control studies. In our opinion, the analysis of partial or not high-quality study data could be misleading.

Q11) RESULTS 1. The results should be arranged according to the methods:

Q12) 2. The results of the search strategy, including the PRISMA flowchart.

Q13) 3. a table with the data extraction.

Q14) 4. The results of the risk of bias assessment should be reported. Please include a panel or figure with the included studies rated against the Cochrane risk of bias tool.

A12-14) As requested, PRISMA flowchart, data extraction and risk bias assessment tables are reported at the bottom of the manuscript.

Q15) DISCUSSION 1. The discussion should be focused on the answers that you could give or not to the research questions, based on your analysis.

A15) Discussion was re-organized and partially re-written according to your comment.

Q16) 2. If you will be able to demonstrate the superiority of the impact blocking devices compared to self-locking implants you could discuss the possible reasons for this superiority.

A16) Unfortunately, no statistical analysis was performed due to high heterogeneity of the data. Literature findings are synthesized and reported as described by authors.

Q17) If you analyzed the difference between resorbable and non-resorbable implants as a part of the study, you should also include a specific research question in the methods section. Otherwise, you should admit that no evidence exists concerning the superiority of an implant versus another one.

A17) thanks for your comments. A specific section was added in results. The literature findings were reported and discussed in discussion.

Q18) 3. If you consider only the rate of surgical complications as an outcome measure, you should limit your discussion to this aspect, and remove any consideration concerning the indication for surgery, the clinical and functional outcomes, the return to sport.



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A18) Thank for your suggestion. Results and Discussion was partially re-written according to your comment in order to address reviewer concerns.

Q19) 4. You could discuss the main biases of the reported studies and the possible solutions.

A19) Studies limits and bias are discussed in table 1.

Q20) 5. You could discuss the results of previous systematic reviews on this topic, if any.

A20) Two systematic reviews and a meta-analysis findings were added and discussed.

Q21) 6. You should include a subheading with the possible weaknesses of your review and what you did to resolve them. For example, you could explain why you restricted the research to the last five years, since it could result in potential biases. You could explain why you choose to limit your investigation to the rate of complications, or why you did not perform any statistical analysis.

A section was included in the text.