

## Peer Review File

Article Information: <https://dx.doi.org/10.21037/tau-22-741>

### Reviewer A

The authors present a narrative review of historical considerations of the penile implant - and further discuss emerging strategies in transgender patients.

1. The authors should discuss some the diminishing role of the two piece ambicor implant especially given alternative (e.g. submuscular) reservoir placement. (The authors should consider discussing counterincisions for reservoirs as well may minimize need for the ambicor)

**Reply 1:** Thank you for your comment. We have added some lines to discuss the diminishing role of Ambicor

**Changes in text:** Lines 316-323

2. In the pump section, it is unclear to me that the authors have discussed the release of the Coloplast Titan Touch pump (in comparison to the Genesis pump) - this seems to be an omission in the tables as well that needs to be rectified. A picture of this pump should probably be included

**Reply 2:** Thank you; we have added some details and an image

**Changes in text:** Lines, 402-403; 455-463, New figure 4, figures 4-6 shifted to 5-7

3. Pump mechanical difficulties such as frozen pump that have been described for both companies should be briefly reviewed - given the area of active work to help ameliorate.

**Reply 3:** Thank you for your comment. We have added some information comparing the two pumps with regard to mechanical failure

**Changes in text:** Lines 455-465

### Reviewer B

I understand the authors attempt to provide an all-encompassing review on all aspects of penile implants, but there are too many topics (section 2 complications and 3 phalloplasty) which are not covered in enough depth sufficiently. Appears as if including phalloplasty is the reason to

make this a "novel" review compared to prior review on penile implants. I see this review better fit if separated into 3 separate manuscripts, each being a more in-depth educational piece.

#### Specific Recommendations

Line 186 subcoronal is not the only method for malleable placement

**Reply:** Thank you. We have made an adjustment.

**Changes in text:** Lines 234-235

Line 190 can also discuss use of malleable for buried penis and condom catheter use

**Reply:** Thank you, we have included a few sentences on this.

**Changes in text:** Lines 250-253

Line 240 although 2 piece may be easier to pump, need to consider that it may be harder to deflate due to need to bend the penile shaft

**Reply:** Thank you. We have included this information in the section, "Surgical Considerations and Post-operative results for Two-Piece Implants"

**Changes in text:** Lines 310-313

Line 308 RTE used in small penises? is this a historical statement?

**Reply:** We have removed the statement "The use of RTEs is called for only in smaller to medium size penises (less than 18 cm)"

Line 310 not aware of needing to "screw on" or twist the Titan RTE

**Reply:** Thank you for catching this. We have removed the statement, "Titan cylinders have screw-on RTEs available in sizes from 1-3 cm." We also changed "which snap or screw in place" to "which snap in place"

**Changes in text:** Lines 365-366

Line 341 need to fix your citation formatting throughout

**Reply:** Thank you, we have adjusted the citation and other citations as well.

**Changes to text:** Line 443

Line 351 not all will use rifampin/gentamycin, try to be more open in your discussion

**Reply:** Thank you. We have adjusted the wording

**Changes in text:** Lines 427-428

Line 367 might as well introduce the new BS Oden pump

**Reply:** Thank you for your comment. We were unable to locate this type of pump “Oden Pump” from Boston Scientific. Could you provide us with some more details so we may add the requested information?

Line 369 better to include both the classic and one-touch pumps, many people still use the classic due to suspected increased durability and less mechanical malfunction, can also discuss the difference between the two pumps

**Reply:** Thank you. We have included some information regarding this comparison.

**Changes in text:** Lines 456-458

Line 375 if you're going to discuss lock out valves then need to include in the pump section that BS lockout valve is in the pump rather than the reservoir

**Reply:** Thank you. We have added a line to mention this.

**Changes in text:** Lines 475-476

#### General Recommendations

Line 421 manuscript now jumps to a few specific surgical indications, i see this better fit as a separate manuscript where you can go into further detail of the numerous issues that can occur

**Reply:** Thank you. We address this in the next comment.

Line 505 manuscript now jumps to phalloplasty! this should really be a separate manuscript, the audience will be completely different, readers want a review article to be focused and will seek out a good review on penile implants and a separate good review on penile implants for phalloplasty, i do not think combining phalloplasty into this article is as comprehensive as it could be

**Reply:** Thank you for this critique. We have removed the section on phalloplasty and transgender patients. The title of the manuscript has also been changed. However, we have decided to elaborate on the surgical considerations in this manuscript per another reviewer's request.

**Reply:** Title (line 2), Introduction, Methods, and Findings adjusted throughout to remove phalloplasty and transgender.

Figure 1 infla10 is not included, nor zephyr

**Reply:** Thank you. We have included this information.

**Changes to text:** Changes made to Figure 1

## Reviewer C

The authors provide a very nice and comprehensive review of penile implants for both cis and transgender patients. It is well written and very thorough. It provides a nice addition of the literature.

Minor Comments:

Introduction:

-The first two sentences discussing the small cartilage and rib cartilage implants need references

**Reply:** Thank you. We have added citations for both sentences

**Changes to text:** Lines 70-71

-I believe the first two paragraphs should be flipped, the second paragraph is more of an introduction into the topic while the second paragraph sets up why the article is being written which is usually the culmination of the introduction section

**Reply:** Thank you. We have changed the orders of the two paragraphs

**Changes in text:** Introduction – Paragraphs 1 and 2; Line 80, Line 94

-the last sentence of the introduction belongs in the methods

**Reply:** Thank you for your comment. We referenced the document entitled “18c\_narrative review” provided by TAU which recommended placing this statement at the end of the Introduction. However, if it is preferred that this statement be relocated to the methods, we can make the requested change.

-Figure 1 and Table 1 are both very nice tables but should be referenced in the results section.

It is unusual and distracting to see them referenced in the introduction

**Reply:** Thank you. We have relocated these to the “Findings” section

**Changes in text:** Lines 124-127

Findings/Results:

-consider adding a heading of Findings or Results before the subheader of Malleable penile prosthesis to allow the reader to understand the transition from methods better

**Reply:** Thank you, we have created this heading

**Changes in text:** Line 124

-I believe numerous sentences need references that currently do not have a reference

-second sentence beginning on line 104

**Reply:** Thank you. We have added a citation

**Changes in text:** Line 132

-several sentences in the paragraph from 144-151

**Reply:** Thank you, we have added citations

**Changes in text:** Lines 202, 208, 216

-paragraph ending on line 161 on Rigicon data should be cited or stated is was provided from manufacturer without a peer review publication

**Reply:** Thank you. This was an unpublished .pdf document from Rigicon that is not available publicly online. We have noted this in the manuscript.

**Changes in text:** Lines 220-221

-sentence from 182-184

**Reply:** Thank you. We have added a citation

**Changes in text:** Line 245-247

-sentence ending on line 199

**Reply:** Thank you. We have added a citation.

**Changes in text:** Line 273

-sentence on line 214

**Reply:** Thank you. We have added a citation

**Changes in text:** Line 290

-sentence starting on line 222

**Reply:** Thank you. We have added a citation

**Changes in text:** Line 299

-second sentence on line 265

**Reply:** Thank you, we have added references.

**Changes in text:** Lines 348-349

-line 266-268

**Reply:** Thank you, we have added a reference

**Changes in text:** Line 348-351

-consider re-reviewing the entire manuscript to ensure all statements which are not common knowledge or an original thought have a reference

**Reply:** Thank you. We have re-reviewed the manuscript and have applied references throughout.

-Sentence referencing implant salvage on line 140-141 should be edited. Mulcahy described the initial attempts at salvage but salvage with malleable became popular later to decrease scrotal complications seen. It also needs a reference. Can either make the sentence more generalized such as malleable prosthesis are also commonly used in salvage procedures (numerous studies could be cited) or delve into the history of salvage more and why MIST became a popular option. I think the latter is probably beyond the scope of this article and is mentioned somewhat in more detail later in the article.

**Reply:** Thank you, we have added a reference

**Changes in text:** Line 145

-Line 162 and 162 the abbreviation IPP is used but I believe penile prosthesis is more appropriate as the authors are not describing inflatable devices here

**Reply:** Thank you, we have replaced the word “IPP” with “penile prosthesis”

**Changes in text:** Line 223

- line 186-malleable devices can also be placed through a penoscrotal or infrapubic incision, not just subcoronal which may actually be a less common approach

**Reply:** Thank you, we have made this change.

**Changes in text:** Line 249-250

-Sentence on 256-257-please elaborate how 2 piece IPP is a convenient option for management of urinary symptoms in spinal cord patients

**Reply:** Thank you. Upon further review of data, we found that 2 piece IPP's were associated with greater risk for mechanical failure, despite data showing they may decrease risk for erosion. Hence, we decided to remove this sentence from the updated manuscript.

--it would be a nice addition to elaborate on the studies discussing different antibiotic coatings which are referenced in line 350-351

**Reply:** Thank you. We have added a few lines regarding this.

**Changes in text: Lines 442-449**

-sentence beginning on line 431-consider changing smaller to narrow or ‘down-sized’ cylinders

**Reply:** Thank you. We have made the request change

**Changes in text: Line 542**

-line 554-AMC is a typo and should be AMS

**Reply:** Thank you. We have removed the section on transgender patients at the request of another reviewer as they believed the review was too broad with regard to topics.

**Reviewer D**

This is an excellent review by Patel et al.

In this review article, they very nicely narrate the advances in penile implants starting with malleable devices, two piece, and then finally three-piece prostheses. The authors discuss the novel aspect of penile prosthesis insertion in phalloplasty patients transitioning from female to male patients.

This review is exhaustive and very nicely written.

At the current time, I have no further suggestions or recommendations.

**Reviewer E**

Thank you to the authors for this interesting narrative review on IPP technology and results. Overall it is well written but would benefit from more in-depth critical analysis of available literature. I recommend overall that authors focus on discussing and re-iterating the most important design improvements in IPP in the discussion of historical advancements. In the discussion of complications and patient satisfaction rates, I recommend that authors focus on discussing and re-iterating any potentially modifiable factors that could reduce complication rates and improve patient satisfaction. Refocusing this review article in this way would allow readers to obtain more practical information that could potentially be utilized in clinical/surgical decision-making.

**Major Revisions**

1) I recommend that the authors discuss whether literature has found any predictive factors in infection rates, erosion rates, and mechanical dysfunction in malleable prostheses and IPPs (this

should be integrated into the corresponding sections discussing complication rates).

2) I recommend the authors discuss any literature that discusses predictive factors/contributors to patient satisfaction rates for both malleable prostheses and IPPs (this should be added to the corresponding sections discussing patient satisfaction rates).

**Reply (to 1 and 2):** Thank you for your useful feedback. We have decided to create a separate section that specifically examines the predictive factors as well as differences between IPPs and malleable prostheses. We figured it would be suitable to have a short section comparing the two (because of studies in literature often examining the differences of both) rather than discussing them separately.

**Changes in text:** Lines 625-654

3) for the discussion of loss of penile length in lines 448-459, please evaluate the available evidence to suggest the most effective penile lengthening strategies (based on available evidence). This review would benefit from more in depth analysis and critical overview of literature rather than pure summarization.

**Reply:** Thank you. Some details were added.

**Changes in text:** Lines 572-581

### **Minor Revisions**

1) please cite lines 71-73 in the introduction

**Reply:** Thank you. We have made the requested change.

**Changes in text:** Lines 81-82

2) I recommend including a figure (photos etc) that illustrates the differences between different types of prostheses discussed in the review

**Reply:** Thank you for your feedback.

**Changes in text:** We have added a new table (Table 6).

3) semi-rigid malleable prostheses may also be implanted through a penoscrotal approach. Please indicate this in lines 186-188.

**Reply:** Thank you. We have made the requested change

**Changes in text:** Lines 249-250

4) please discuss in further depth the Mulcahy salvage protocol (lines 190-194) including the role of washout and later/temporary modifications of the Mulcahy salvage protocol.

**Reply:** Thank you for your feedback. We have added some details.

**Changes in text:** Lines 255-259.



5) please cite the referenced studies in lines 196-199. Please review the entire manuscript to make sure everything is cited accordingly.

**Reply:** Thank you. We have made the requested changes and reviewed the manuscript.

**Changes in text:** Lines 270-275)

6) Please cite the description of the development of the Ambicor prosthesis in lines 222-226.

**Reply:** Thank you, we have added a reference.

**Changes in text:** Line 299