Reviewer's report

Title: Analysis of the association between paternity and reoperation for urethral obstruction in adult hypospadias patients who underwent two-stage repair in childhood

Version: 1  Date: 28 May 2019

Reviewer: Bruce Schlomer

Reviewer's report:

Introduction
1. I would add to 1st paragraph that long term consequences in patients with unrepaired hypospadias is unclear as well. The natural history of untreated hypospadias, especially mild cases, is unclear and could have a mostly benign course.
2. Did the authors have a hypothesis? Presumably, they hypothesized that those who had obstructive complications after 2 stage repair had lower paternity. This should be stated clearly.

Methods
1. I find it surprising that 2 stage repairs were performed for almost all hypospadias cases over 25 years. This would make these results not applicable to most institutions.
2. How was the glandular urethra created? Was this with a flap? A graft? This needs to be explained.
3. The authors compared the group who had surgery for obstruction to all other cases from their institution as well as to the general public. Is this comparison to general public data valid? Can the authors provide references on the method they used for this? Perhaps other studies have done similar comparisons using this dataset? Did the authors obtain a complete dataset from which they could perform log rank testing and survival curve analysis or did they just use the mean with SD to create a z-score? From what I can tell, the authors just put a mark on the failure curves for different ages.

Results
1. There was a very low response rate. Only around 10% of cases were included in analysis. This led to study group of 12 and control group of 78.
2. Why is paternity not in table 2 right below Marriage and compared by Fisher exact test?
3. In table 3, why was ejaculation problems compared with t-test. It should have been a chi-square or Fisher's exact test.
4. The authors create failure curves for timing of re-operation. This does not seem to be related to their hypothesis.
5. There were only 5 patients in study group that were married. Of these 5 patients, none had children. Apparently, this leads to a statistically significant finding when compared by log-rank test. However, with only 5 patients making the basis of the main findings of the study, I would not overstate the conclusions.
6. I think authors can conclude that overall intercourse, marriage, and marriage with paternity seemed similar to the general population. There is some suggestion that marriage and paternity may be lower in the obstructive group with paternity reaching statistical significance. However, very low numbers limit conclusions.

Discussion
1. I think authors can conclude that overall intercourse, marriage, and marriage with paternity seemed similar to the general population. There is some suggestion that marriage and paternity may be lower in the obstructive group with paternity reaching statistical significance when compared to non-obstructive group. However, very low numbers limit conclusions.
2. Since there were only 12 cases in the study group with only 5 being married, it is really difficult to make any significant conclusions. The authors need to emphasize the small numbers in the discussion and conclusions.
3. How is this study really different then their prior study that included 108 patients? I think this is the main limitation of this paper in that it essentially just uses data previously published. They found a similar finding with previous paper. Because this had similar findings using the same data set and patients, I question whether this study needed to be done.
4. Since a staged repair was done on distal and proximal type hypospadias, a re-operation for obstruction could be a sign of hypospadias severity.
5. Were any of the 12 study group patients wanting to have children? This is important information that is not provided.

Conclusions
1. They should not start the conclusion with "despite the limitations"
2. They can conclude that the group who had reoperation for obstruction seemed to have lower marriage rates than the general population and none of these patients had children which was significantly different than the control group and general population. However, given the low number of patients (12 in study group of which only 5 were married) and lack of information about desire for children it is difficult to state definitively the meaning of these findings.
3. I do not think this report could be used as a reference for other studies given the approach (staged for all patients) and limited number of patients.

Overall
1. Very small number of patients. These 90 patients were part of a previous report with 108 patients. Unclear if multiple publications should be made with same patients on same topic.

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I have been able to assess all of the statistics in this manuscript (please refer to checklist above)

There are statistical tests that I am unable to assess and recommend seeking additional advice (please specify which tests these are in the ‘Comments to Editor’ box)

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