Reviewer's report

Title: Operative Management of Cryptorchidism: Guidelines and Reality - a 10-Year Observational Analysis of 3587 Cases

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Reviewer: adam hittelman

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The authors have presented an interesting retrospective cross-section study assessing compliance with guidelines for management of cryptorchidism, as well as the pediatrician’s perspectives on this management. They conclude that compliance to the guidelines needs to be improved, though secondary ascent of the testicles may reflect some of the delays in surgical management.

Discretionary revisions--The authors have appropriately pointed out that only 5% of patients (2010-2012) undergo orchiopexy in accordance with guidelines. However, this number increases to 10% when managed at hospitals with pediatric surgery departments. It is also interesting to note the shift (at hospital with pediatric surgery departments) from 6% to 10% with the change in guidelines, while surgery under 2 y.o. remains relatively constant (29% vs 31%). This argues that there was at least some implementation of the guidelines. One could argue that there was not a significant change in surgeries for patients >2 y.o. is because a high percentage of the older children represent ascending testicles, rather than primary undescended testicles.

Discretionary revisions--The authors have focused on the response that 45% of pediatricians believe that timing of orchiopexy is in accordance with guidelines. However, they do not note that 54% think that orchiopexies are performed too late and none of the pediatricians felt it was performed too early. 85% of respondents felt that orchiopexy should be performed in 1st year of life, demonstrating their knowledge of the guidelines. The authors only highlight the 15% that recommend initiating treatment after the first year of life.

Minor essential revision--The authors should clarify what “conservative treatment” approach means. They note that 82% favor conservative treatment over surgical procedure (17%), but do not define what it means. Also, in which figure is this date demonstrated?

Discretionary revisions--The authors have nicely addressed the complexity in differentiating between primary undescended and ascended testicles. However, testicular ascent typically happens at an older age, as reflected by the author’s reference to the cremasteric reflex, age 5-8. For this reason, I would have expected more of a bimodal distribution, whereas orchiopexy rates were relatively high in 2-4 age range, 43% overall. This tends to suggest that these are undescended testicles that were being referred late, though this would contradict
the survey responses from the pediatricians.

Discretionary revisions--Although this may be outside of the scope of this paper, the authors have not questioned the pediatric surgeons/urologists adherence to the guidelines. This could be addressed with a survey to these practices. It is unclear how long it takes to get access to a surgical specialist. It would be interesting to know at what age pediatricians refer non-palpable gonads (abdominal testicle vs. inutero torsion) as these would not get confused with the ascending testicles and represents a more “pure” group. Delayed referral would either represent a decision to refer at later age or were not recognized on earlier physical exam.

Major Compulsory--The authors have made some statements that need to be corrected. Laparoscopic surgery is not the surgical treatment of choice for majority of inguinal undescended testicles (line 72). Success rates are not 95% for laparoscopic orchiopexy (line 73), 80% for 1stage, 70% two-stage. The authors are correct that there is an increase in risk of malignancy in primary undescended testicles, as well as the contralateral descended testicle, though the risk is much higher in the Ipsilateral undescended testicle compared with contralateral descended testicle.

Minor Essential--There are several spelling errors in the paper (malignant 174, table 1- hyperactive, 239- processus vaginalis?, etc.). Also, the percentages they quote in the text 45% (line 197) is 46% in the figure and 72% (line 204) is 73% in the figure. While these are not significant differences, it is a little confusing when you are trying to follow the text with the figures.

Overall, the authors have presented an interesting study assessing compliance rates with surgical guidelines, as well as referring pediatrician perspectives. They nicely acknowledge the complexity of differentiating primary undescended and ascended testicles and the impact that this may have on timing of surgical intervention.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

N/A