



Prediction model for serious complications after primary laparoscopic pyeloplasty in children: is it a useful tool?

Sonia Pérez-Bertólez¹^, Verónica Alonso-Arroyo²^, Isabel Casal-Beloy¹^

¹Pediatric Urology Unit, Department of Pediatric Surgery, Hospital Sant Joan de Déu, University of Barcelona, Barcelona, Spain; ²Department of Pediatric Surgery, Hospital Universitario de Burgos, Barcelona, Spain

Correspondence to: Sonia Pérez-Bertólez. Pediatric Urology Unit, Department of Pediatric Surgery, Hospital Sant Joan de Déu, University of Barcelona, Barcelona, Spain. Email: spbertolez@yahoo.es.

Comment on: Li J, Li Z, He Y, *et al.* Development of the prediction model for negative outcomes after primary laparoscopic pyeloplasty in children: a retrospective study of 535 patients. *Transl Androl Urol* 2022;11:1680-90.

Keywords: Ureteropelvic junction obstruction (UPJO); laparoscopic pyeloplasty (LP); negative outcomes; prognostic nomogram model

Submitted Feb 06, 2023. Accepted for publication Mar 21, 2023. Published online Mar 27, 2023.

doi: 10.21037/tau-23-72

View this article at: <https://dx.doi.org/10.21037/tau-23-72>

Since the first description of laparoscopic pyeloplasty (LP) in children (1), this approach has been widely used in the treatment of pediatric ureteropelvic junction obstruction (UPJO), and it has been confirmed as a feasible and efficient technique, even in infants under ≤ 10 kg (2) or younger than 2 years of age (3-5). Despite of this, the data about safety of LP in these patients, is still limited. There have only been a few relevant studies that have put forward a simple description and have reported a broad complication rate of 6.7–37.5% (4,6-11). Nevertheless, no prior publications with a large series have focused on the analysis of complications of primary LP and the impact factors in order to create a prediction model for negative outcomes.

We have read with great interest the contribution done by Li *et al.*, in their study: “*Development of the prediction model for negative outcomes after primary laparoscopic pyeloplasty in children: a retrospective study of 535 patients*” (12).

The paperwork of our colleagues is relevant because it is one of the first studies that develop a prediction model to quantify the probability of negative outcomes after LP. In addition, their work presents a large number of cases, which gives great validity to its results. Then, this prediction model could lead clinicians to offer a more individualized treatment approach, minimizing the likelihood of adverse

events after laparoscopic correction of UPJO. Nevertheless, we would like to add some considerations to their paper.

First, the authors conclude that the low weight, the increased preoperative pelvic diameter, and the difficulty of inserting double-J (DJ) stents, are risk factors for an unfavorable evolution after LP. On the other hand, authors affirm that externalized pyeloureteral stent was more prone to serious postoperative complications than DJ drainage. But authors do not compare both catheters under the same conditions. They only insert the external catheter if the DJ does not progress adequately to the bladder. So, it is possible that this group of patients have an associated ureterovesical stenosis or an iatrogenic injury at that level during the attempted placement of the DJ stent, which obviously worsens the prognosis.

The Hospital Sant Joan de Déu experience is the opposite: higher pelvis diameter and the use of external stents were protective risk factors while older (and heavier) patients had higher risk of complications (13). So, which are the real risk factors for complications after primary LP in children? Is it possible to find global risk factors?

Li *et al.* described three limitations of their model: firstly, it is single center study that can lead to potential selection bias hardly avoidable. Secondly, seven surgeons

^ ORCID: Sonia Pérez-Bertólez, 0000-0002-3312-0952; Verónica Alonso-Arroyo, 0000-0001-6270-698X; Isabel Casal-Beloy, 0000-0003-1762-8382.

performed operations separately, so bias was unavoidable because these physicians had slightly different preferences and approaches to some details during the surgery. Thirdly, it was a retrospective study (12). It is a bit contradictory to consider these limitations or weaknesses of the study: on the one hand being a single center, but on the other hand having multiple surgeons. What is the intention of the authors? Getting a tool for one surgeon or a small group of surgeons in a single environment? Or creating a tool that can be useful to any surgeon in the world in his own center? Is it possible to achieve the latter? We need larger series and multicentric randomized prospective studies to find this answer.

It would be very interesting to know the real risk factors. Thus, the pediatric urologist could improve his surgical strategy (adapted to the characteristics of the patient) and the success of the results. However, we consider relevant to include other possible risk factors in the univariate and multivariate model described by Li *et al.* (12). Those factors could have also distorted the general results of this work. For example, the preoperative obstruction presentation or other intraoperative problems.

In conclusion, we congratulate the authors for this risk factors study of LP. This work demonstrates that this technique is a safe and effective procedure in children, with a low rate of complications. An improved global prediction model could help clinicians make individualized assessments of cases and give them more specific support. At this time, the attention should be focused on assessing whether the application of this kind of tools in the future modifies the prognosis of patients.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Translational Andrology and Urology*. The article did not undergo external peer review.

Conflicts of Interest: The authors have completed the ICMJE uniform disclosure form (available at <https://tau.amegroups.com/article/view/10.21037/tau-23-72/coif>). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Cite this article as: Pérez-Bertólez S, Alonso-Arroyo V, Casal-Beloy I. Prediction model for serious complications after primary laparoscopic pyeloplasty in children: is it a useful tool? *Transl Androl Urol* 2023;12(4):530-532. doi: 10.21037/tau-23-72