

# Creating a Low-Cost Model for Pyeloplasty

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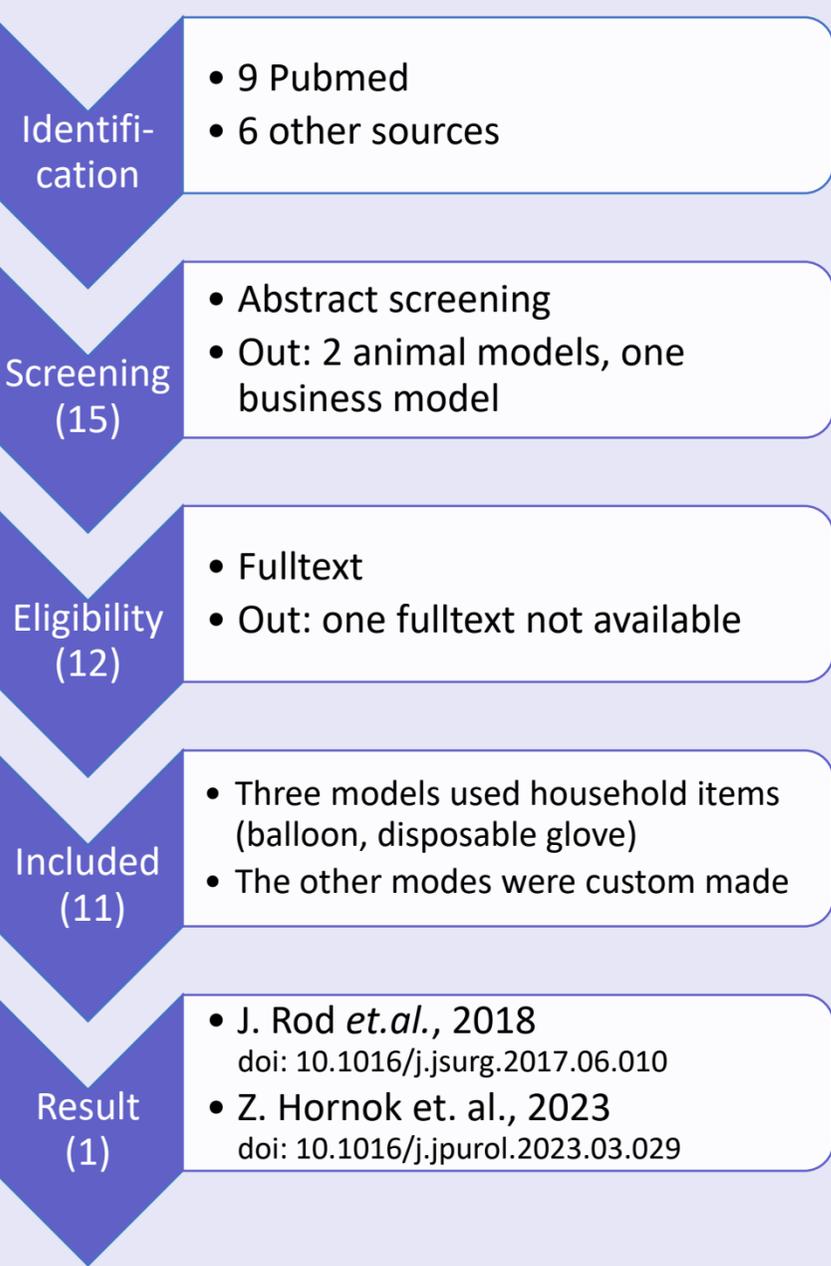
## Aim of the study

Pyeloplasty is a standard, moderately complex procedure in pediatric urology, involving both open and laparoscopic techniques. Low patient numbers require alternative methods to acquire necessary skills. Training models are a potential solution, but many hospitals and surgeons have limited budgets for purchasing these models. This study aims to identify and build a suitable model that can be created at low cost with minimal technical effort.

## Materials

A PubMed search was performed with the terms “low-cost,” “simulation,” and “pyeloplasty.” Articles with animal models were excluded. These articles were reviewed for materials and manufacturing processes used in pyeloplasty simulation models. Based on these results, a new model was developed that would require no special equipment, be highly reproducible, incur minimal costs, and have no specific hygiene requirements.

## Results



## Our development



Industrial modeling clay easily shaped at 60°C

retains its form at room temperature

Two balloons, a clothespin for fixation



Costs of the model are about 2.5€.

Time for production:

- Kidney modeling: five minutes per piece
- Balloon fixation: 5-10 minutes

## Further development and use of models



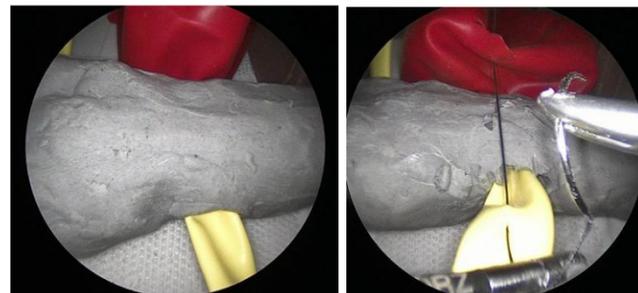
From kidney to bladder:  
Student training course

- Pyeloplasty
- Lich-Gregoir
- Ureteral reimplantation

Evaluation:

- Models are suitable for training of general surgical skills

From kidney to pancreas anulare  
(laparoscopic training course)



**Conclusion:** Low-Cost Models are a valuable source for training of surgical skills. Departments with limited technical and financial resources can create these models, providing valuable training opportunities for their students and staff.