

3mm Vessel Sealer and 5mm Stapler in Thoracoscopic Surgery for Congenital Lung Malformation

A Summary of Clinical Experience

Introduction:

A recent study evaluated the outcomes of thoracoscopic resection of congenital lung malformations (CLM) in pediatric patients from January 2016 to July 2019.¹

Technological advances in laparoscopic instruments led to the development of a 3mm vessel sealer and 5mm stapler which address many of the limitations surgeons had for operating in infants. The introduction and use of these devices provide a step forward for the safety and feasibility of thoracoscopic surgery in infants.¹

“These instruments can facilitate the procedure and help reduce the length of surgery.”

— *Journal of Laparoendoscopic & Advanced Surgical Techniques*
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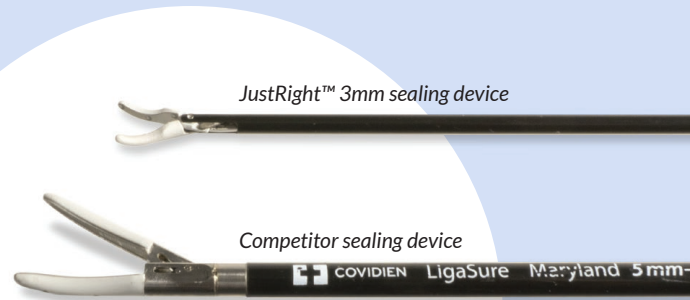
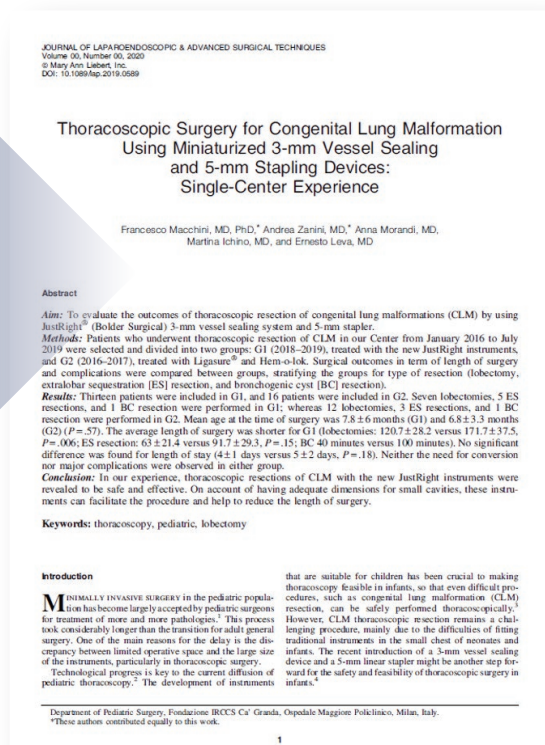
TIME SAVINGS
for lobectomies with
Bolder Surgical devices¹

Key Takeaways:

Mean operative times were significantly lower for the group treated with the JustRight™ 3mm vessel sealer and JustRight™ 5mm stapler versus 5mm Ligasure™ vessel sealer and Hem-o-lok®.¹

Authors believe the reduction in mean time is due to higher versatility of the Bolder Surgical instruments.

- **Dissecting** was easier and quicker.
- **Size** was appropriate for infant vessels and bronchi.
- Instrument occupies less of surgical field for improved **visualization**.



Material and Methods Summary:

Aim of the study was to retrospectively evaluate the experience of a single center using the Bolder Surgical devices for congenital lung malformations (CLM) resection in infants.

	Bolder Surgical Group 1	Alternate Group 2
Year of surgery	2018 - 2019	2016 - 2017
Devices used	JustRight™ 3mm vessel sealer and 5mm stapler	Ligasure™ and Hem-o-lok®
Types of resections	7 Lobectomies 5 Extralobar Sequestration 1 Bronchogenic Cyst	12 Lobectomies 3 Extralobar Sequestration 1 Bronchogenic Cyst
Total number of patients	13	16
Mean age at time of surgery (p=.57)	7.8 ± 6 months	6.8 ± 3.3 months
Surgical outcomes compared	Length of surgery, length of stay, conversion to open, major complications	

Results Summary:

	Group 1	Group 2	Mean Difference	p-value
Average length of surgery for: - Lobectomy* - Extralobar Sequestration - Bronchogenic Cyst	120.7 ± 28.2 minutes 63 ± 21.4 minutes 40 minutes	171.7 ± 37.5 minutes 91.7 ± 29.3 minutes 100 minutes	51 minutes 28.7 minutes 60 minutes	p = .006* p = .15 p = not reported
Length of stay	4 ± 1 days	5 ± 2 days	1	p = .18
Conversion to open	No	No	Not comparative	
Complications	None	None	Not comparative	

“The development of instruments that are suitable for children has been crucial to making thoracoscopy feasible in infants, so that even difficult procedures, such as CLM resection, can be safely performed thoracoscopically”



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References

1. Thoracoscopic Surgery for Congenital Lung Malformation Using Miniaturized 3-mm Vessel Sealing and 5-mm Stapling Devices: Single-Center Experience. Macchini F, Zanini A, Morandi A, Ichino M., and Leva E. Journal of Laparoendoscopic & Advanced Surgical Techniques. Vol 00, No. 00, 2020.

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