

5-2019

Outcomes Following Dynamic Compression Bracing for Pectus Carinatum

Charlene Dekonenko

Children's Mercy Hospital, cdekonenko@cmh.edu

Robert M. Dorman

Children's Mercy Hospital, rmdorman@cmh.edu

Amy L. Pierce

Children's Mercy Hospital, alpierce@cmh.edu

Beth A. Orrick

Children's Mercy Hospital, baorrick@cmh.edu

David Juang

Children's Mercy Hospital, djuang@cmh.edu

See next page for additional authors

Follow this and additional works at: <https://scholarlyexchange.childrensmercy.org/posters>

Part of the [Musculoskeletal System Commons](#), [Orthotics and Prosthetics Commons](#), [Pediatrics Commons](#), and the [Surgery Commons](#)

Recommended Citation

Dekonenko, Charlene; Dorman, Robert M.; Pierce, Amy L.; Orrick, Beth A.; Juang, David; Aguayo, Pablo; Fraser, Jason D.; Oyetunji, Tolulope A.; Snyder, Charles L.; St Peter, Shawn D.; and Holcomb, G W. III, "Outcomes Following Dynamic Compression Bracing for Pectus Carinatum" (2019). *Posters*. 117.

<https://scholarlyexchange.childrensmercy.org/posters/117>

Authors

Charlene Dekonenko, Robert M. Dorman, Amy L. Pierce, Beth A. Orrick, David Juang, Pablo Aguayo, Jason D. Fraser, Tolulope A. Oyetunji, Charles L. Snyder, Shawn D. St Peter, and G W. Holcomb III

Outcomes following Dynamic Compression Bracing for Pectus Carinatum

Charlene Dekonenko, MD; Robert M. Dorman, MD; Amy Pierce, APRN; Beth A. Orrick, APRN; David Juang, MD; Pablo Aguayo, MD; Jason D. Fraser, Tolulope A. Oyetunji, MD, MPH; Charles L. Snyder, MD; Shawn St. Peter, MD; George W. Holcomb III, MD, MBA

Children's Mercy Kansas City, Kansas City, MO

Background

Children with pectus carinatum (PC) are particularly vulnerable to the psychosocial effects of poor body image, even though they may not experience physical symptoms. Non-operative treatment with orthotic bracing is effective in PC correction.

We describe our experience with dynamic compression bracing (DCB) for PC patients and their satisfaction with bracing.



Methods

Prospective institutional data of patients undergoing DCB from July 2011- June 2018 were reviewed and analyzed for those who entered retainer mode after correction, defined by a correction pressure of < 1 psi. A telephone survey was conducted regarding their bracing experience and satisfaction with the outcome on a scale of 1-10.

Results

	Frequency or Median [IQR]
Male Gender	91%
Age (years)	14 [13,15]
Carinatum Height (cm)	2 [1.5,3]
PIC (psi)	3.7 [2.9,4.6]
Time to retainer (months)	5.5 [3,10]
Compliance	57%
Recurrence	40%

	Compliant	Non-compliant	p-value
PIC	3.7 [2.8,4.5]	3.8 [3.1,4.6]	0.52
Carinatum Height	2 [1.5,3]	2 [1.5,3]	0.58
Time to retainer	3.5 [2,6]	10 [6,13]	<0.01*

	Recurrence	No Recurrence	p-value
PIC	4 [3.2,4.6]	3.5 [2.8,4.4]	0.04*
Carinatum Height	2.5 [2,3]	2 [1.5,3]	0.58
Compliance	57%	43%	0.35

Frequency or Median [IQR] (n=76)

Time to survey (months)	13 [3,33]
Recurrence	24%
Limiting factors	
Discomfort	38%
Psychosocial	14%
Mechanical	1%
Motivating Factors	
Appearance	59%
Symptoms	21%
Mechanical	6.9%
Satisfaction score	9 [8,10]

Conclusion

DCB is effective in achieving early correction in compliant patients. Regardless of time to retainer and duration of treatment, patients reported high satisfaction with their outcome.

References

- de Beer SA, Blom YE, Lopez M, et al. Measured dynamic compression for pectus carinatum: A systematic review. *Semin Pediatr Surg.* 2018;27(3):175-182.
- Martinez-Ferro M, Fraire C, Bernard S. Dynamic compression system for the correction of pectus carinatum. *Semin Pediatr Surg.* 2008;17(3):194-200.
- Poola AS, Pierce AL, Orrick BA, et al. A single-center experience with dynamic compression bracing for children with pectus carinatum. *Eur J Pediatr Surg.* 2018;28(1):12-17.
- Thaker S, Anderson M, Fezio J, et al. Pectus carinatum: Factors that contribute to success and failure of nonoperative treatment. *Conn Med.* 2017;81(4):203-208.