Posters

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Short and Long Term Outcomes of Using Cryoablation for Post-operative Pain Control in Patients After Pectus Excavatum Repair

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Introduction

- Although pain control in the immediate postoperative period after minimally invasive pectus excavatum repair has been well studied, there is sparse data to evaluate short and long-term pain control after discharge, as well as symptoms associated with postoperative discomfort.
- We report the findings of a three-year prospective observational study to elucidate long-term symptoms and complications of patients who underwent minimally invasive pectus excavatum repair with intercostal cryoablation with specific attention to postoperative short and long-term pain control associated with the cryoablation technique.

Methods

- Surveys were administered to patients who had bar placement for pectus excavatum with intercostal cryoablation from 2017-2020 regarding pain scores, pain medication usage, and limitations to activity beginning on the day of surgery, on the day of discharge, and two-week and three-month follow-up.
- A retrospective chart review was performed to identify demographic information, the number of emergency department visits, phone calls to the outpatient surgery office, and the requirement for refills of narcotic pain medication.

Results

	2-week survey (n = 65)	3-month survey (n = 32)
Do you currently have any pain?		
Yes	36 (55%)	13 (41%)
No	29 (45%)	19 (59%)
Pain score[#]	3 [2, 4]	3 [1, 4]
Duration of narcotic pain medication[#]	7 days [4, 8]	
Are you still using pain medication?		
Yes	31 (48%)	8 (25%)
No	34 (52%)	24 (75%)
Do you have any numbness/tingling?		
Numbness/tingling	14 (22%)	15 (47%)
No additional issues	51 (78%)	17 (53%)
Interval readmission	6 3 – Pneumothorax 3 – Pain	2 1 – Bar infection 1 – Pneumonia
Calls to outpatient surgery clinic	76 39 – Pain **3 additional narcotic prescriptions* 21 – Constipation 11 – Nausea/vomiting 5 – Fever	65 *All patients reported intermittent pain and/or popping sensation; no additional pain prescriptions were required

- Median [IQR]

Table 1: Patient surveys at two-week and three-month follow-up

- N = 110 patients
- Discharge Survey (n = 48) – 44% response
  - Sharp pain and pressure on the first postoperative night were the most described pain characteristics, most frequently in the middle of the chest.
- Parent Questionnaire
  - Most parents reported their child's pain "as expected" or "better than expected" during the postoperative hospital stay and perceived the patient as "a little sick, weak," with improvement after POD 0.
  - Responses followed a trend of increased pain and perception of poor recovery beginning POD 2, with consistent improvement by POD 4.
- Follow-up Surveys (Table 1)
  - 55% of patients reported tolerable residual pain at two weeks and 41% at three months
  - 25% required intermittent pain medication at three months
- There were three readmissions for inadequate pain control; two on POD 2 and one on POD 5.
- 110 calls to the surgery clinic by three-month follow-up, most commonly for persistent pain and frequent popping sensation with movement.

Conclusion

- Although cryoablation is an excellent pain control modality, these data suggest that patients underreport functional symptoms and experience more frequent discomfort and alteration of daily living activities than providers perceive.

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