ABSTRACT

- **Introduction:** Ostium secundum atrial septal defect (ASD) is a common congenital heart defect [1]. Surgical repair of ASD results in an average length of stay of 3.4 days, compared to 1.0 days for percutaneous devices [2]. The purpose of this study was to assess how our institution’s multimodal approach to anesthesia has been able to reduce the length of stay for surgical patients.

- **Methods:** This was a retrospectively reviewed single-institution case series for patients who underwent surgical repair of ASD using a right axillary approach between 2013-2016. The patients received IV fentanyl on induction, neuraxial astramorph shortly after induction, and maintained on remifentanil infusion during surgery. Dexmedetomidine infusion was started prior to extubation and continued postoperatively. The patients also received acetaminophen PO and ketorolac IV postoperatively. Patients were discharged home on acetaminophen, acetaminophen-codeine, or acetaminophen-oxydodone.

- **Results:** 25 patients underwent surgical ASD repair at our center in this study. The patients ranged in age from 10 months to 15 years. All patients were extubated in the operating room (average time to extubation was 14.6 minutes after completion of surgery). Nineteen patients (76%) were discharged home on postoperative day one. The average length of stay was 1.4 days. One patient returned to the emergency department for chest pain, and was discharged home.

- **Conclusion:** A multimodal anesthetic approach, combined with the axillary surgical technique for ASD repair resulted in a significantly reduced length of stay. Further study is needed to see if this anesthetic technique is effective with other surgical approaches to ASD repair. Our institution is currently evaluating whether this approach can be utilized to make surgical ASD repair a same-day procedure.

BACKGROUND

- Ostium secundum atrial septal defect (ASD) is a common congenital heart defect [1].
- Surgical repair of ASD results in an average length of stay of 3.4 days, compared to 1.0 days for percutaneous devices [2].
- The purpose of this study was to assess how our institution’s multimodal approach to anesthesia has been able to reduce the length of stay for surgical patients.

METHODS

- This was a retrospectively reviewed single-institution case series for patients who underwent surgical repair of ASD using a right axillary approach between 2013-2016.
- The patients received IV fentanyl on induction.
- Neuraxial astramorph was administered shortly after induction. Patients received either a caudal or spinal with no local anesthetic.
- A remifentanil infusion was maintained during surgery. Patients were started at 0.1mcg/kg/min and decreased to 0.01mcg/kg/min when on cardiopulmonary bypass.
- Dexmedetomidine infusion was started prior to extubation and continued postoperatively.
- The patients also received acetaminophen PO and ketorolac IV postoperatively.
- Patients were discharged home on acetaminophen, acetaminophen-codeine, or acetaminophen-oxydodone.

RESULTS

- 25 patients underwent surgical ASD repair at our center in this study. The patients ranged in age from 10 months to 15 years.
- All patients were extubated in the operating room (average time to extubation was 14.6 minutes after completion of surgery).
- Nineteen patients (76%) were discharged home on postoperative day one.
- The average length of stay was 1.4 days.
- One patient returned to the emergency department for chest pain, and was discharged home.

CONCLUSION

- Surgical repair of ASD results in an average length of stay of 3.4 days, compared to 1.0 days for percutaneous devices [2]. The average length of stay at our institution for surgical repair was 1.4 days.
- Surgical repair of ostium secundum ASD is feasible as an outpatient procedure using this technique.
- Further study is needed to see if this anesthetic technique will work for other surgical approaches to ostium secundum ASD repair. We would also like to evaluate this technique to fast track other pediatric open heart operations.

REFERENCES