THE UNIVERSITY OF ARIZONA College of Nursing

SPHENOPALATINE GANGLION BLOCK FOR POST-DURAL PUNCTURE HEADACHES

Barbara Boemer BSN, RN, CCRN, TNCC, Nurse Anesthesiology Resident

Abstract

- The objective of this Quality Improvement (QI) initiative was to measure how education on both PDPH and SPGB could potentially affect the level of knowledge of SPGB for PDPH by providing an educational seminar and evaluate the seminar's effectiveness on increasing education of suggested intervention.

Purpose

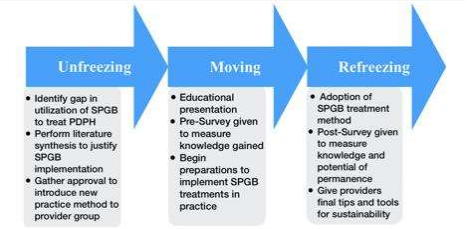
- The purpose of this quality improvement (QI) project was to measure how education could potentially affect the level of knowledge and utilization of Sphenopalatine Ganglion Blocks (SPGBs) as a treatment for Post Dural Puncture Headaches (PDPHs) in practice. The intended goal is to provide a simple, educational presentation in which provider participants will be educated on PDPHs, their cause, and the benefits of utilizing SPGB as a treatment.

Background/Significance

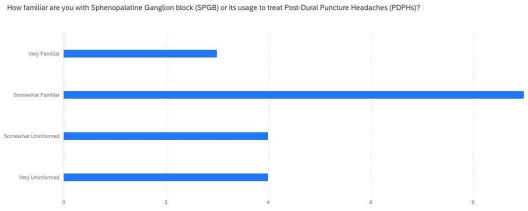
- A post-dural puncture headache can occur when the dura is punctured when performing an epidural injection or the placement of an epidural catheter. The puncture of the dura causes a leak of cerebrospinal fluid (CSF), which then leads to a decrease in CSF pressure causing the symptoms of a post-dural puncture headache (Tubben et al., 2022).
- Typical onset of PDPHs is 24 to 48 hours after a procedure and with no intervention can last anywhere from 7 to 10 days (Tubben et al., 2022).
- An epidural blood patch is a procedure that uses a small volume of autologous blood that is injected into the patient's epidural space to stop the leak of CSF fluid (Tubben et al., 2022).
- Although effective, this procedure is quite invasive and can cause severe side effects such as subdural hematoma, infection, meningitis, delayed radicular pain, or even another PDPH (Puthenveettil et al., 2018, p. 972).
- A sphenopalatine ganglion block is a simple procedure that can be performed bedside when a patient is in a supine position with their neck extended and a long applicator with a cotton swab is soaked with 2%-4% lidocaine or viscous lidocaine and is then inserted parallel to the floor of the nose until there is resistance (Nair & Rayani, 2017, p. 95).
- Greater Anesthesia Solutions (GAS) is an anesthesia management group that has continued to provide anesthesia services throughout Arizona and is continuously gaining trusted partners throughout the region (Greater Anesthesia Solutions, 2021).
- A voiced potential need to increase the preparedness of anesthesia providers to adapt their treatment methods to include more modern alternatives as GAS expands (K. Elliot, personal communication, January 2024).

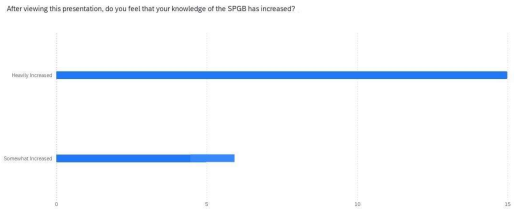
Methods

- ***QI Project Design & Intervention:*** The QI project included a comprehensive review of background knowledge on the utilization of SPGBs in practice, a substantive literature review, and a 5 question post-pre survey that was utilized to measure the effectiveness of the presentation.
- ***Model of Implementation:*** Plan Do Study Act (PDSA) Cycle is a quality improvement model designed to guide a test of change to determine if the change is an improvement (IHI, n.d.).
- ***Participant Involvement:*** Participants included CRNA's, and MD's who are GAS employees. Participants were recruited by a convenience sample that was comprised strictly through voluntary participation. 21 participants were later identified to participate in the intervention.



Results



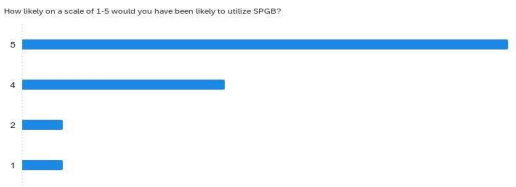


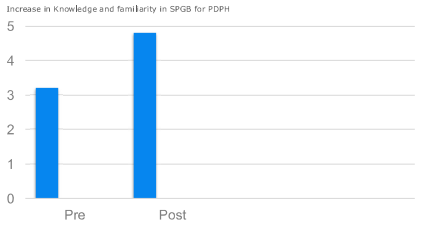
Discussion

- This DNP project found that the educational presentation on SPGBs increased the participants' knowledge and likelihood of implementation of the technique to treat symptoms of PDPHs.
- Before the presentation, most of the participants were only somewhat familiar with SPGB for PDPH, with only 15% of participants being very familiar with its usage.
- After the presentation, 75% of participants reported a significant increase in their level of knowledge, along with 100% of participants indicating that they would be more likely to utilize the SPGB technique in clinical practice.
- These results outline the value of continued education that introduces innovative treatments in clinical practice.

Conclusion

- Educating healthcare providers on the use of Sphenopalatine Ganglion Blocks (SPGBs) to alleviate symptoms of Post Dural Puncture Headaches (PDPHs) through an educational presentation is an effective way to increase provider knowledge and education on a more modern technique as evidenced by the data collected for this project.
- To increase sustainability, the education content that is provided in the presentation must be continuously reviewed and updated to ensure that the most current information is being given as suggested by the PDSA cycle that was utilized for this project. Further dissemination may include the utilization of the PowerPoint presentation at the local site to enhance provider education and comprehension of data and key findings.





Author Contact Information

Barbara Boemer
boemer@arizona.edu