The association of using same operating room (OR) personnel to OR times for microvascular decompression (MVD) surgery

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Background: Trigeminal neuralgia is a chronic neuropathic pain condition that affects the 5th cranial nerve (trigeminal nerve). The classic symptoms associated are intense, irregular, sudden burning or shock-like facial pain that lasts anywhere from a few seconds to as long as two minutes per episode. Treatment options range from medical management to more invasive surgical intervention.

Microvascular decompression (MVD), which takes on average 2-3 hours, seems to offer a favorable prognosis. It is therefore imperative to maximize efficiency of OR operation as it is an essential component of hospital functionality. Quality improvement measures have become increasingly important over the last few years. Various strategies have been implemented including multidisciplinary awareness training and improved scheduling techniques. However, there is a lack of longitudinal studies analyzing the association of the same OR personnel for the same case over a period of time.

Objective: The objective of this study was to determine if the implementation of using the same OR personnel (nurse, surgical technician, neurosurgeon, & anesthesiologist) for every MVD case will lead to a decrease in pre-incision times and ultimately total OR time.

Methods: The study design was a retrospective study using consecutive patients from Larkin Community Hospital database. The patient data used in this study was selected using the following criteria: 1) Patient diagnosed with trigeminal neuralgia. 2) Patient undergoing microvascular decompression surgery between January 1, 2012 and December 31, 2016. The main outcomes of the study were pre-incision times, length of surgery times, and total OR times.

Results: A total of 47 consecutive patients were used in this study; 40 were female and seven were male. There was a statistical significance in the reduction of pre-incision times (PIT) from 42 minutes in 2012 to 33 minutes in 2016 (p <0.0001) (Figure 1). The length of surgery (LOS) ultimately decreased from 94 minutes in 2012 to 84 minutes in 2016 but was not statistically significant (p > 0.05) (Table 1). The total OR time of 137 minutes in 2012 significantly decreased (P < 0.05) to 120 minutes in 2016 was statistically significant (Figure 2). All patients except one, who developed a complication, were admitted for 23 hour observation and were discharged home the next day.

Conclusion: The results of this study suggest that there is an association between using the same team for MVD and reduction of PIT and total OR time which can lead to a reduction in cost for the patient and hospital. Using the same team model allowed the members of the team to learn the strengths and weaknesses of each team member which over time led them to become more
efficient. This study shows another technique that can be implemented in hospitals to effectively maximize usage of the OR. This strategy could be useful for any type of surgery. Prospected studies with larger sample sizes and varying risks of surgery are warranted.

I have uploaded the abstract on a word document as well as it includes graphs & tables.