

Introduction

- With its cost savings and improved efficiency, wide awake local anesthesia surgery is growing in popularity
- Without formal anesthesia, an anesthesia provider is unnecessary, and a registered nurse is sufficient to monitor the patient intra-operatively
- However, there are no formal guidelines that provide requirements for a minimal number of nurses to be present during a local procedure
- In our experience, some centers provide only a circulating nurse and a scrub technician/nurse for wide awake procedures (2 nurses), while other centers provide an additional patient monitoring nurse along with the circulating nurse and scrub technician/nurse (3 nurses)
- The aim of this study was to evaluate perioperative complication rates of wide-awake local anesthesia hand surgeries performed at surgery centers that utilized different numbers of operating room (OR) nurses
- We hypothesized that there would be no difference in patient complications between surgery centers that used 2 vs 3 operating room nurses

Materials and Methods

- Retrospective review of wide-awake local anesthesia hand procedures over a 30-month consecutive period at four surgical centers
- Two surgery centers utilized 2 OR nurses
- Two surgery centers utilized 3 OR nurses
- Power analysis: 714 procedures required per group to achieve a power of .8 and an alpha of .05
- Complications reported included: intraoperative case abortion due to critical change in patient vitals, intraoperative medication delivery, intraoperative IV placement for medication delivery, intraoperative conversion to sedation, intraoperative medical complications, and postoperative transfer to the emergency department or a hospital

Table 1. Responsibilities of the circulating nurse versus the dedicated patient monitoring nurse.

2 Nurse Operating Room	3 Nurse Operating Room	
Circulating Nurse	Patient Monitoring Nurse	Circulating Nurse
<ul style="list-style-type: none"> • Verification of H&P/Consents • Transporting patient from Pre-operative holding area to the operating room • Positioning patient • Prepping patient • Time-out procedure • Intra-operative monitoring (BP/pulse ox) • Communicating with patient • Surgical documentation • Circulating (retrieving/opening supplies) • Transferring patient from OR to PACU • Giving report to PACU • Room turn-over between cases 	<ul style="list-style-type: none"> • Intra-operative monitoring (BP/pulse ox) • Communicating with patient 	<ul style="list-style-type: none"> • Verification of H&P/Consents • Transporting patient from Pre-operative holding area to the operating room • Positioning patient • Prepping patient • Time-out procedure • Surgical documentation • Circulating (retrieving/opening supplies) • Transferring patient from OR to PACU • Giving report to PACU • Room turn-over between cases

Results

- 1,771 wide awake local anesthesia surgical patients were identified at the four separate surgery centers
- 925 patients had surgery at a facility that used 2 OR nurses
- 846 patients had surgery at a facility that used 3 OR nurses
- Procedures between groups similar, with the majority being soft tissue procedures
- The three-nurse group had a significantly higher average BMI ($p<.001$), had significantly more former/current smokers ($p=.008$), and had significantly more patients with hypertension ($p=.004$) and diabetes ($p=.015$) (Table 2)
- Zero perioperative complications were recorded in either group (Table 3)

Table 2. Patient Demographics and Medical History.

	2 Nurse (N=925)	3 Nurse (N=846)	P Value
Age (SD)	60 (15)	61 (15)	.380
BMI (SD)	28.9 (6.1)	30.1 (6.0)	<.001
Gender			.263
Male (%)	451 (48.8)	390 (46.1)	
Female (%)	474 (51.2)	456 (53.9)	
HTN (%)	339 (36.6)	356 (42.1)	.004
CKD (%)	17 (1.8)	25 (3.0)	.131
Diabetes (%)	129 (13.9)	154 (18.2)	.015
Vascular Disease (%)	19 (2.1)	19 (2.2)	.732
Bleeding Disease (%)	26 (2.8)	24 (2.8)	.901
Tobacco Use			.008
Former Smoker (%)	184 (19.9)	168 (19.9)	
Current Smoker (%)	86 (9.3)	105 (12.4)	

Legend: SD=Standard Deviation, BMI=Body Mass Index, HTN=Hypertension, CKD=Chronic Kidney Disease

Table 3. Intraoperative and postoperative complications.

	2 Nurse (N=925)	3 Nurse (N=846)
Intraoperative		
Case Aborted Due to Vital Signs	0	0
Medication Delivery	0	0
IV Placement for Medication Delivery	0	0
Conversion to Sedation	0	0
Medical Complications (i.e., MI, etc.)	0	0
Postoperative		
Transfer to ED or Hospital	0	0

Legend: MI=Myocardial Infarction, ED=Emergency Department

Conclusion

- There was no difference in peri-operative complications when utilizing 2 versus 3 intraoperative nurses during wide awake local anesthesia hand surgeries
- While having a nurse solely to monitor the patient may seem judicious, it does not seem to objectively impact patient safety
- Limiting the nursing personnel for wide awake local anesthesia hand surgeries could be an efficient way to cut procedural costs without compromising patient safety