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DOES NEUROMUSCULAR BLOCKADE AFFECT THE ASSESSMENT OF PELVIC ORGAN PROLAPSE?

Hypothesis / aims of study

1) To determine if general anaesthesia with neuromuscular blockade alters the POPQ exam. 2) To determine if preoperative patient characteristic affect the intra-operative exam.

Study design, materials and methods

We conducted a multicenter prospective observational study at 4 sites in the south eastern United States. Beginning February 2009 participation was offered to all English speaking women scheduled to undergo pelvic surgery. Those with ICS stage IV prolapse on office exam or with a pseudocholinesterase deficiency were excluded.

In the office setting, we performed a POPQ exam [1] with the head of the bed elevated 45^{o} and an assessment of pelvic floor muscle tone [2]. Demographic data [1] and preoperative pelvic floor dysfunction symptoms were recorded.

The POPQ exam was repeated under anaesthesia (OR) using gentle traction on the vagina or cervix, by an Allis clamp, to achieve maximal descent. POPQ points were recorded to the nearest 0.5cm.

We compared both ICS stages and individual POPQ points using a paired sample t-test. POPQ points grouped by positive and negative values were compared using chi-squared. Kappa statistic was used as a measure of agreement between office and OR exams. All tests were two-sided with alpha < 0.05. Statistics calculations were performed by the biostatistics department using SPSS version 17.

Results

96 patients were analyzed .The mean age was 59.5yo (12.7 sd) with mean BMI of 28.4kg/M^2 (5.5 sd); 88.5% of our subjects were white. The median vaginal parity was 2 (range 0-8). Preoperatively 4.4%, 44% and 52% were ICS stage I, II and III respectively. The majority of subjects underwent surgery for pelvic floor dysfunction. 83%, 17%, 27% and 69%, experience symptoms of bulge, splinting with voiding, splinting with defecation or urinary incontinence respectively. Sixteen percent were asymptomatic. The ICS stages (overall and broken down by compartment) were systematically greater in the OR than in the office ($p < 0.0005$). Comparison of the mean values for individual POPQ points demonstrated larger means in the OR compared to office exam for all points except TVL (*p*-value < 0.0005).

Table 1: Results

	OR mean (sd)	Office mean (sd)	OR – Office (sd)	95% CI	2 tailed p*
Aa	0.73 (1.2)	0.03 (1.65)	0.70 (1.30)	0.44 - 0.97	<0.0005
Ba	1.95 (2.06)	1.02 (2.31)	0.93 (1.31)	0.67 - 1.19	<0.0005
C	-0.37 (3.10)	-3.88 (4.11)	3.45 (2.23)	2.98 - 3.92	<0.0005
D	-3.26 (1.84)	-6.85 (2.01)	3.59 (2.24)	2.87 - 4.30	<0.0005
Ap	0.98 (1.29)	-0.72 (1.59)	1.70 (1.37)	1.42 - 1.98	<0.0005
Bp	1.52 (2.01)	-0.33 (2.09)	1.85 (1.71)	1.50 - 2.20	<0.0005
TVL	7.04 (5.66)	7.48 (4.79)	-0.45 (2.54)	-0.96 - 0.07	0.087

*Paired t test

When the POPQ points were re-grouped into “proximal to” and “at/past the hymen” there remained a statistically significant difference.

Interpretation of Results

POPQ exam under anaesthesia is both statistically and clinically different than exam in the office. Although the percent of asymptomatic subjects was low, these patients also had more prolapse in the OR compared to the office. This raises the possibility that asymptomatic prolapse encountered in the OR may not need surgical correction. Long term follow up of those asymptomatic patients is needed for a definitive answer.

Concluding message

Pelvic surgical plan should not be changed based solely on the exam under anaesthesia.

References

1. Bump RC, Mattisson A, Bo K, et al. The standardization of terminology of female pelvic organ prolapse and pelvic floor dysfunction. Am J Obstet Gynecol. 1996;175:10-7
2. Isherwood PJ, Rane A. Comparative assessment of pelvic floor strength using a perineometer and digital examination. BJOG. 2000;107(8):1007-11

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Specify Name of Ethics Committee	**University Medical Center Institiutional Review Board (IRB), Greenville, NC, USA** **Medical University of South Carolina IRB Charelston, SC, USA** **Beaufort Memorial Hospital IRB Beaufort, SC, USA** **Carilion Clinic-Virgina Tech Medical Center IRB Ronoake, VA USA**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**