CAN NECK CIRCUMFERENCE BE AN EFFECTIVE PREDICTOR OF URINARY INCONTINENCE IN A BARIATRIC POPULATION?

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Introduction

With a continued increase in the prevalence of extreme obesity, and the increase in life expectancy, OBGYNs are seeing an increase in the number of patients with urinary incontinence. Neck circumference is a good measure of truncal obesity. This maybe a better predictor of incontinence because truncal obesity is more likely to increase intra-abdominal pressure, when compared to appendicular obesity.

Objective

To compare the BMI and neck circumference of continent and incontinent obese women.

We hypothesize, that incontinent obese women will have higher BMIs and larger neck circumferences compared to continent obese women.

Methods

This is a retrospective case-control study derived from a sample of 234 female patients, all of whom had an initial visit to the Bariatric Clinic at the local medical center between the dates of March 2016 and October 2016 and were at least 18 years of age.

History and physicals were reviewed to determine the presence or absence of urinary incontinence.

Women were divided into two groups: those with urinary incontinence, and those without urinary incontinence.

From published data we estimated the average BMI and neck circumference in female bariatric patients along with the standard deviations. A 2.5kg/m2 difference in BMI and a 1.2cm difference in neck circumference were considered significant differences in this study. Our power analysis calculated we would need 100 cases and 100 controls to be able to identify these differences assuming an 80% power and 0.5 error.

The patient's initial neck circumference, height, weight, BMI, and age were obtained from the electronic medical record. Only those women with full data sets were included in the statistical analysis (n=230). The T-test and ANCOVA were used for statistical analysis

Results

No significant difference in neck circumference or BMI was observed between the cases and the controls using the student T-Test.

T TEST

	CONTROLS (n=128)		CASES (n=102)		
	mean	SD	mean	SD	P_{value}
Age	42.3	12.5	46.0	11.0	0.020
BMI	47.3	9.1	46.4	8.2	0.768
NC	40.2	3.7	40.3	3.9	0.791

When age was included as a confounding variable, using the ANCOVA statistical test, there was minimal change in p-values with no statistical difference in BMI or neck circumference between cases and controls noted.

ANCOVA

	P_{value}
BMI	0.726
NC	0.710

Conclusions

The association between age and incontinence was noted in this study as reported previously in the literature.

In the bariatric population, a larger neck circumference is not reliably associated with urinary incontinence and cannot be used as a predictor of urinary incontinence.

Additionally, urinary incontinence does not seem to be associated with a greater BMI in a bariatric population.