

Impact of Body Mass Index on Outcomes of Single-Incision Laparoscopic Appendectomy in Children

Cristen N. Litz, Sandra M. Farach, Paul D. Danielson, Nicole M. Chandler

Division of Pediatric Surgery, Johns Hopkins All Children's Hospital, St. Petersburg FL

Introduction

Obesity has been shown to be associated with an increased risk of intraoperative and postoperative complications. Recently, single-incision laparoscopic appendectomy (SILA) has emerged as a less invasive alternative to conventional laparoscopy and has been reported to be safe in appendicitis. However, little is known about the clinical implications of obesity on outcomes following SILA in children.

Objectives

The purpose of this study was to assess the impact of body habitus on outcomes following SILA in children.

Methods

A retrospective review of all patients with appendicitis who underwent SILA from July 2012-April 2015 was performed. Body mass index (BMI) was calculated and the BMI percentile was obtained according to the Center for Disease Control (CDC) guidelines for gender and age. Standard definitions for overweight (BMI 85-94%) and obese (BMI >95%) were used. Demographics and outcome data were compared among normal BMI, overweight and obese groups.

Results

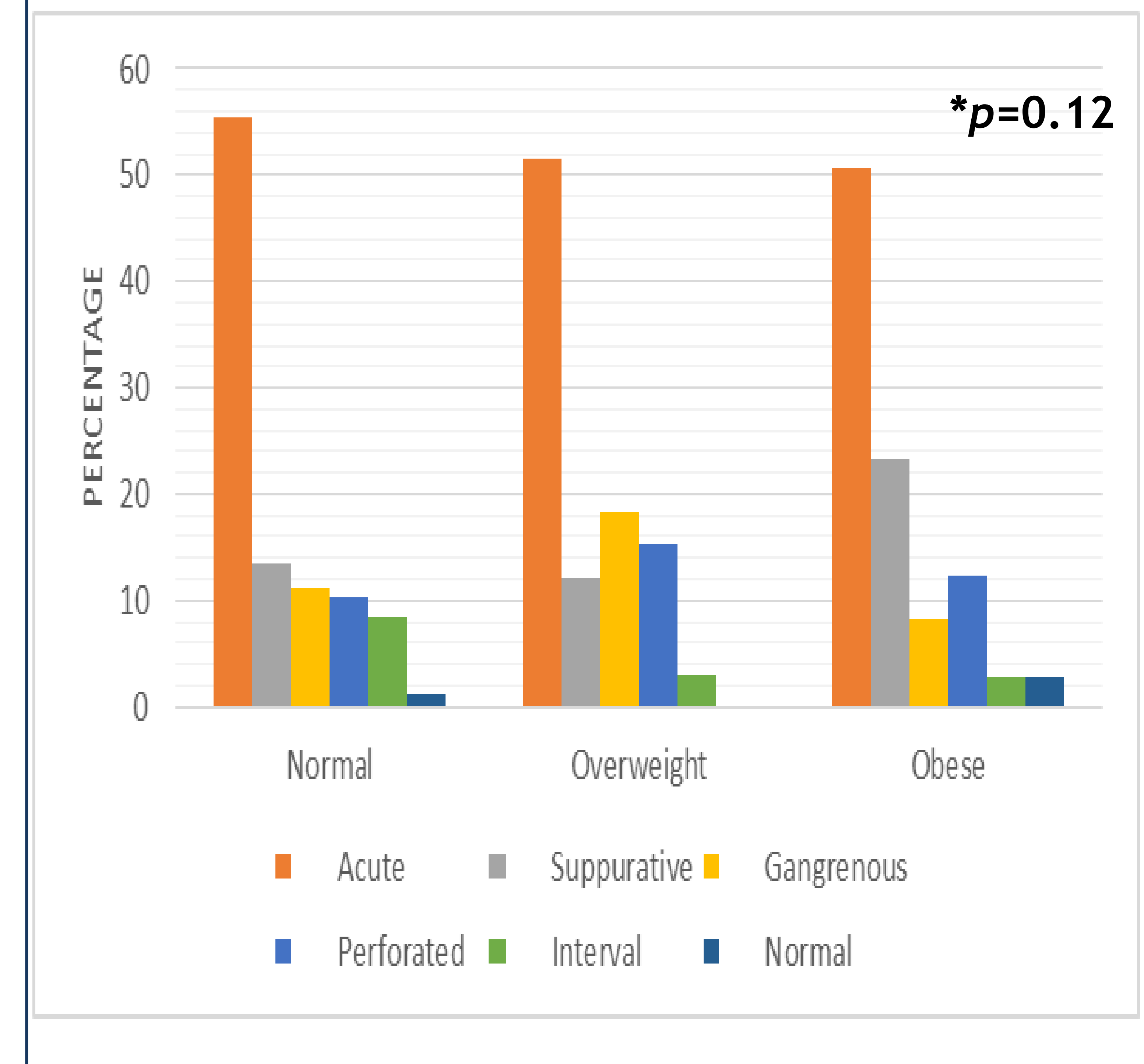
Figure 1. Demographic and clinical data

	Normal BMI	Overweight	Obese	P-value
Patients, n (%)	274 (66.3)	66 (16)	73 (17.7)	NA
Age (y)	11.6 ± 3.8	11.9 ± 3.2	10.8 ± 3.5	0.20
BMI percentile	43.4 ± 26.1	90.3 ± 3.1	97.4 ± 1.4	NA
Time to diagnosis (min)	128 ± 176	120 ± 94	118 ± 92	0.87
WBC	14.8 ± 5.2	15.4 ± 5.0	15.7 ± 5.5	0.30

Figure 2. Outcome data

	Normal BMI	Overweight	Obese	P-value
OR time (min)	27 ± 9	27 ± 10	28 ± 9	0.51
LOS (d)	1.0 ± 1.7	1.5 ± 4.2	1.1 ± 2.3	0.21
SSI, n (%)	19 (6.9)	8 (12.1)	6 (8.2)	0.38
➤ Superficial SSI, n (%)	8 (2.9)	5 (7.6)	5 (6.8)	0.13
➤ Organ space SSI, n (%)	11 (4)	3 (4.5)	1 (1.4)	0.51
ED visits, n (%)	23 (8.4)	7 (10.6)	8 (11)	0.73
Readmissions, n (%)	13 (4.7)	3 (4.5)	3 (4.1)	0.97

Figure 3. Intraoperative classification



Conclusion

Obesity does not significantly impact outcomes following single-incision laparoscopic appendectomy. SILA can be performed in overweight and obese children without increased rates of perforation, longer operative times, longer length of stay or an increased complication rate. SILA should continue to be offered to overweight and obese children.