



# Outcome of Primary Obesity Surgery Endolumenal Procedure as Obesity Treatment in Private Practice Setting: an Intervention Study

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This prospective study was done for 1 year, aimed to evaluate perioperative, postoperative, and weight outcomes of the POSE procedure among patients referred to a private hospital (ElKatib Hospital) for obesity treatment between December 2016 and November 2017.

All six participants who considered undergoing the POSE procedure were generally patients with a body mass index (BMI) in World Health Organization (WHO) class I or II [1] obesity with or without comorbid conditions or in WHO class III obesity but be unwilling to subject for surgical procedure. Patients were needed to be older than 20 years and demonstrate an ability and willingness to comply with the follow-up program and understand their role in treatment.

The baseline and the follow-up examinations included an assessment of weight and height, measured by calibrated scales and wall-mounted stadiometers, respectively. Patients

wore indoor clothing and no shoes during weighing. Ideal body weight (IBW) was calculated as  $IBW (kg) = [(height (m))^2 \times 25 \text{ kg/m}^2]$  [2] and excess weight (EW) was calculated as  $EW (kg) = \text{absolute weight (AW) (kg)} - IBW (kg)$ . BMI was calculated as  $[\text{weight (kg)} / (\text{height (m)})^2]$ .

Safety endpoints analyzed were minor and major complications. Operative time and hospital stay duration were recorded. Postoperative follow-up outcomes after 6, 9, and 12 months expressed as mean change from baseline in AW and BMI. In addition, percent excess BMI loss (%EBMIL), %TBWL, and %EWL were calculated.

Weight loss was calculated with four different metrics [3]:

1. BMI reduction =  $(\text{baseline AW} - \text{last weight}) / (\text{body height})$  [4]
2. %EBMIL =  $100\% \times \text{BMI reduction} / (\text{baseline BMI} - 25)$
3. %TBWL =  $100\% \times \text{BMI reduction} / \text{baseline BMI}$
4. %EWL =  $100\% \times (\text{baseline AW} - \text{last weight}) / (\text{baseline AW} - IBW)$

In this study, six patients (100% females) underwent the POSE procedure. One hundred percent completed the 1-year follow-up. The mean patients age and height were  $42 \pm 11.43$  year and  $161.1 \pm 6.46$  m respectively. Mean preoperative weight was  $92.16 \pm 9.38$  kg and mean baseline BMI was  $35.49 \pm 3.361$  kg/m<sup>2</sup>. The average EW was  $27.12 \pm 8.14$  kg and patients divided equally between class I and class II obesity (Table 1).

There was no mortality. Minor postoperative complications included sore throat (100%), stomach pain (66.67%), nausea (33.33%), and vomiting (16.67%) resolved with treatment by discharge.

## Weight Outcomes

Baseline weight was significantly reduced at 6, 9, and 12 months after POSE procedure with *p* value (0.022, 0.032,

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**Table 1** Baseline patient characteristics

Characteristics	Value	Mean ± SD	N = 6	95% (CIs)
Age (years)	42 ± 11.34			(32.93 → 51.07)
Height (m)	161.1 ± 6.46			(155.93 → 166.27)
AW (kg)	92.166 ± 9.38			(84.66 → 99.67)
IBW (kg)	65.04 ± 5.20			(60.88 → 69.20)
EW (kg)	27.12 ± 8.14			(20.61 → 33.63)
BMI (kg/m <sup>2</sup> )	35.49 ± 3.361			(32.80 → 38.18)
BMI class	<i>N</i>	(%)		
Class I (30.0–<35%)	3	50%		–
Class II (≥35.0–<40%)	3	50%		–
Class III (≥40.0%)	0	0%		–

**Table 2** Changes in AW and BMI after 6, 9, and 12 months

Parameters	Baseline	Mean ± SD	N = 6	Month number	Mean ± SD	N = 6	Paired <i>t</i> test	<i>p</i> values
6 months								
AW (kg)	92.16 ± 9.38			84 ± 10.21			3.272	0.022
BMI (kg/m <sup>2</sup> )	35.49 ± 3.361			32.34 ± 3.661			3.37	0.020
9 months								
AW (kg)	92.16 ± 9.38			84.83 ± 11.68			2.950	0.032
BMI (kg/m <sup>2</sup> )	35.49 ± 3.361			32.63 ± 3.36			3.080	0.027
12 months								
AW (kg)	92.16 ± 9.38			83.50 ± 12.437			3.281	0.02
BMI (kg/m <sup>2</sup> )	35.49 ± 3.361			32.15 ± 4.65			3.243	0.023

**Table 3** Comparison between weight parameters at 6, 9, and 12 months

Parameters	6 months	Mean ± SD	N = 6	9 months	Mean ± SD	N = 6	12 months	Mean ± SD	N = 6	Friedman test for repeated measures	<i>p</i> values
%EBMIL	33.62 ± 24.39			34.36 ± 23.83			45.11 ± 33.15			1.083	0.582
%TBWL	9.23 ± 5.79			9.17 ± 4.92			11.59 ± 6.48			1.083	0.582
%EWL	33.6 ± 24.41			34.35 ± 23.86			44.91 ± 32.81			1.064	0.561

and 0.02) and also in BMI with *p* value (0.020, 0.027, and 0.023) respectively (Table 2). Also, patients had a mean %EBMIL of 33.62 ± 24.39 at 6 months, 34.36 ± 23.83 at 9 months, and 45.11 ± 33.15 at 1 year with no statistically significance difference. Regarding mean of %TBWL and %EWL at 6, 9, and 12 months, patients had (9.23 ± 5.79, 9.17 ± 4.92, 11.59 ± 6.48) and (33.6 ± 24.41, 34.35 ± 23.86, 44.91 ± 32.81) respectively with no statistically significance difference (Table 3).

A limitation of this study was that it was conducted on a small number of patients without a control group.

In conclusion, a 1 year follow-up POSE was considered as an effective, safe, and well-tolerated procedure for obesity treatment.

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Tarek Kaddah: Conception and design and acquisition of data.

Nahla Zaitoun: Analysis and interpretation of the data; drafting of the article and final approval of the article.

**Compliance with Ethical Standards**

**Conflict of Interest** Mohamed Abeid has no conflict of interest. Karl A. Miller is the Chief Medical Officer for Johnson and Johnson Middle East and received a study grant for the MILEPOST Study from USGI medical. Tarek Kaddah has no conflict of interest. Nahla Zaitoun has no conflict of interest.

**Statement of Informed Consent** Informed consent was obtained from all individual participants included in the study.

**Statement of Human Rights** The study has been approved by the ministry of health and the hospital ethics committee and has been performed in accordance with the ethical standards.

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