S-36

Effect of Sleeve Gastrectomy on Platelet Count and Mean Platelet Volume

Faruk Kutlutürk, Zeki Özsoy*

Department of Endocrinology and Metabolism, Gaziosmanpasa University, School of Medicine, Tokat, Turkey
*Department of General Surgery, Gaziosmanpasa University, School of Medicine, Tokat, Turkey

Abstract

Background: Obesity is a chronic metabolic disorder associated with cardiovascular disease, characterized by a chronic proinflammatory and prothrombotic state. Circulating platelets may differ in size and hemostatic potential. Larger platelets contain more granules and produce greater amounts of vasoactive and prothrombotic factors. This study aimed to investigate the effect of laparoscopic sleeve gastrectomy on platelet count and mean platelet volume in morbidly obese patients.

Methods: 143 females and 62 males comprising a total of 205 patients, who attended the monitoring visits starting in the period prior to the sleeve gastrectomy till the monitoring visit in the 6th month after the surgery, were included into the study. The routine physical examination findings, and laboratory parameters recorded preoperatively were compared with their counterparts obtained in the postoperative 6th month.

Results: Prior to the sleeve gastrectomy, the mean PLT count of the patients was 314.16±76.4 109/L; however a significant reduction was observed in the mean PLT count during the postoperative sixth month, which was calculated as 263.17±65.67 109/L ($p<0.001$). While the MPV levels were 10.12±0.88 fL, in the preoperative period, they were detected to singnificantly increased to 10.41±1.23 fL, ($p>0.001$). Platelet counts in women were significantly higher preoperatively and postoperatively than in males. The increase in MPV levels after sleeve gastrectomy was found both in females and in males.

Conclusions: The results of our study demonstrated that the levels of PLT decreased and MPV increased significantly after patients underwent sleeve gastrectomy and that the decrease was independent of changes in BMI.

Keywords: Sleeve gastrectomy, platelet, mean platelet volume

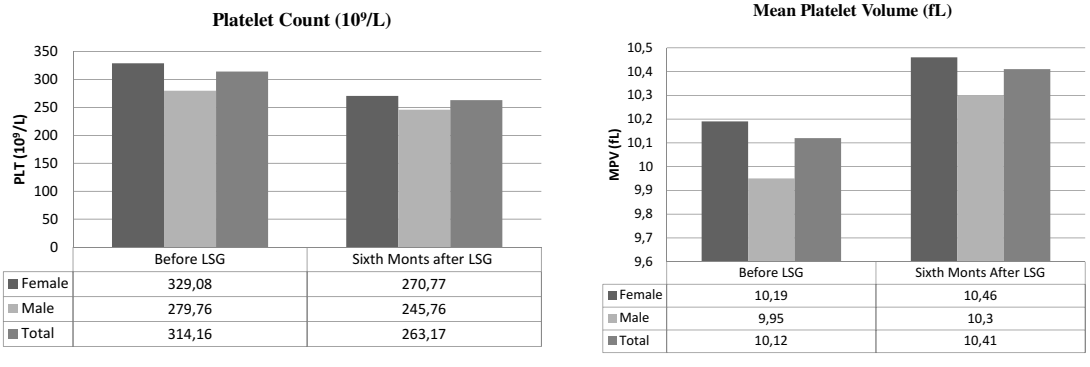

Figure: Effect of laparoscopic sleeve gastrectomy on platelet count and mean platelet volume.

DOI: 10.25179/tjem.20182202-S36

Table 1. Changes in metabolic parameters before and sixth months after LSG (N=205).

	Preoperative	Sixth Months After	P value
Weight, kg	125.84 ±21.56	85.03±16.37	P<0.001
BMI, kg/m^2	47.65±28.76	31.49±6.04	P<0.001
Hematolojic Parameters			
Platelet (10^9/L)	314.16±76.40	263.17± 65.67	P<0.001
MPV (fL)	10.12±0.88	10.41±1.23	P<0.001
Leucocytes (/mm^3)	9.44±2.40	7.47±2.03	P<0.001
Neutrophil (/mm^3)	6.13±1.98	4.03±1.32	P<0.001
Lymphocytes (/mm^3)	2.59±0.74	2.64±0.73	P=0.294
Hemoglobulin (gr/dl)	13.66±1.71	13.57±1.52	P=0.255
Metabolic and Hormonal Parameters			
TSH, µIU/mL	1.95±1.6	1.91±1.58	P=0.017
Free T4, ng/dL	1.86±9.27	1.28±0.30	P=0.358
Glucose. mg/dl	111.2±37.73	97.75±62.48	P=0.019
ALT, U/L	30.74±22.07	19.85±20.53	P<0.001
AST, U/L	22.83±10.88	20.18±17.94	P=0.109
Vitamin B12, pg/ml	438.34±566.69	295.67±250.31	P=0.026
Folic acid, ng/ml	20.66±100.56	6.31±2.99	P=0.129
Calcium, mg/dl	9.40±0.47	10.28±7.14	P<0.001
Iron, µg/dl	70.45±182.51	74.24±24.56	P=0.828
Ferritin, ng/ml	91.52±182.51	84.25±96.97	P=0.687
25-hydroxyvitamin D, ng/ml	29.41±14.6	24.44±16.55	P<0.001

p: Independent Samples t test. Mean±SD *:Wilcoxon test. Median[IQR].

Table 2. Correlation between BMI, PLT count, and MPV.

		Preoperative					Sixth months after LSG		
Preoperative		**BMI**	**PLT**	**MPV**	**Sixth months after**		**BMI**	**PLT**	**MPV**
BMI	r	1	.053	-.057	BMI	r	1	-.027	-.029
	p		.448	.419		p		.700	.680
PLT	r	1	-.337**		PLT	r		1	-.313**
	p			.000		p			.000
MPV	r			1	MPV	r			1
	p					p			

Pearson's correlation coefficients were used.