

COMPARITIVE STUDY BETWEEN LASER HEMORRHOIDOPLASTY, LIGASURE™ HEMORRHOIDECTOMY AND DIATHERMY HEMORRHOIDECTOMY IN TREATMENT OF GRADE III AND IV HEMORRHOIDS

Walid Galal El Shazly, Mohamed Mazloun Zakria, Ahmed Mohamed Moaz, Mohammad Ashour Khadr
Department of General Surgery, Faculty of Medicine, Alexandria University

INTRODUCTION

Through the past decades, various surgical methods have been introduced as new modalities for the management of grade III and IV hemorrhoidal disease HD, to provide an effective and less invasive operation in comparison with conventional hemorrhoidectomy which is the gold standard surgical treatment.

AIM OF THE WORK

The aim of this study was to compare Laser hemorrhoidoplasty versus LigaSure™ hemorrhoidectomy versus diathermy hemorrhoidectomy in treatment of grade III and IV HD as regarding post operative pain using Visual Analogue Scale pain scoring (VAS), bleeding, operative time, and time to return to work.

PATIENTS AND METHODS

This study was conducted at Alexandria Main University Hospital. 45 patients with grade III and IV HD were enrolled in our study, 15 patients treated with diathermy hemorrhoidectomy DH (group A), 15 patients with LigaSure™ hemorrhoidectomy LH (group B), and 15 patients with Laser hemorrhoidoplasty LHP (group C). Assessment of postoperative pain, intra and postoperative bleeding, operative time, and time to return to work were recorded for one month and analyzed.

RESULTS

Table 1: Comparison between the three studied groups according to post-operative pain according to VAS

VAS	Group A (n = 15)	Group B (n = 15)	Group C (n = 15)	P
Day 0				
Min. – Max.	6.0 – 10.0	5.0 – 8.0	5.0 – 8.0	0.001*
Median (IQR)	8.0 (7.0 – 9.0)	6.0 (6.0 – 7.0)	7.0 (6.0 – 7.0)	
Sig. bet. grps.	p ₁ <0.001*, p ₂ =0.003*, p ₃ =0.478			
Day 3				
Min. – Max.	5.0 – 7.0	2.0 – 6.0	2.0 – 5.0	<0.001*
Median (IQR)	5.0 (5.0 – 7.0)	3.0 (3.0 – 4.0)	4.0 (3.0 – 4.0)	
Sig. bet. grps.	p ₁ <0.001*, p ₂ <0.001*, p ₃ =0.949			
1 week				
Min. – Max.	2.0 – 5.0	0.0 – 3.0	0.0 – 3.0	<0.001*
Median (IQR)	3.0 (3.0 – 4.0)	1.0 (1.0 – 2.0)	1.0 (0.0 – 2.0)	
Sig. bet. grps.	p ₁ <0.001*, p ₂ <0.001*, p ₃ =0.580			
2 week				
Min. – Max.	0.0 – 2.0	0.0 – 1.0	0.0 – 2.0	<0.001*
Median (IQR)	2.0 (0.50 – 2.0)	0.0 (0.0 – 1.0)	0.0 (0.0 – 0.0)	
Sig. bet. grps.	p ₁ <0.001*, p ₂ =0.003*, p ₃ =0.337			
4 week				
Min. – Max.	0.0 – 2.0	0.0 – 0.0	0.0 – 0.0	0.043*
Median (IQR)	0.0 (0.0 – 0.0)	0.0 (0.0 – 0.0)	0.0 (0.0 – 0.0)	
Sig. bet. grps.	p ₁ =0.030*, p ₂ =0.030*, p ₃ =1.000			

p: p value for comparing between the three studied groups
p1: p value for comparing between **Group A** and **Group B**
p2: p value for comparing between **Group A** and **Group C**
p3: p value for comparing between **Group B** and **Group C**
*: Statistically significant at p ≤ 0.05

Table 2: Comparison between the three studied groups according to intraoperative time, intra and postoperative bleeding and return to work

	Group A (n = 15)	Group B (n = 15)	Group C (n = 15)	P
Intraoperative time (min.)				
Min. – Max.	20.0 – 30.0	11.0 – 18.0	8.0 – 12.0	<0.001*
Mean ± SD.	26.0 ± 2.70	14.33 ± 2.13	10.27 ± 1.44	
Sig. bet. grps.	p ₁ <0.001*,p ₂ <0.001*,p ₃ <0.001*			
Intraoperative bleeding (ml)				
Min. – Max.	36.0 – 60.0	12.0 – 24.0	3.0 – 6.0	<0.001*
Median (IQR)	48.0 (36.0 – 48.0)	18.0 (12.0 – 18.0)	6.0 (3.0 – 6.0)	
Sig. bet. grps.	p ₁ =0.002*,p ₂ <0.001*,p ₃ =0.002*			
Post-operative bleeding	0 (0.0%)	0 (0.0%)	0 (0.0%)	–
Return to work (days)				
Min. – Max.	8.0 – 15.0	6.0 – 10.0	4.0 – 8.0	<0.001*
Mean ± SD.	10.60 ± 2.16	7.47 ± 1.19	5.87 ± 1.13	
Sig. bet. grps.	p ₁ <0.001*,p ₂ <0.001*,p ₃ =0.021*			

CONCLUSION

Laser hemorrhoidoplasty and LigaSure™ hemorrhoidectomy are safe operative techniques for treatment of grade III and IV hemorrhoidal disease and associated with significantly less postoperative pain in comparison with DH, and also associated with less operative time, intraoperative blood loss, and time taken to return to work with the superiority for Laser hemorrhoidoplasty.