

THE IMPACT OF PLATELET RICH PLASMA (PRP) ON THE HEALING OF THE OPERATIVE CAVITY AFTER ENDOSCOPIC SINONASAL SURGERIES

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Introduction

The role of endoscopic sinus surgery (ESS) in chronic rhinosinusitis (CRS) refractory to medical treatment is well established in providing symptomatic relief and improvements in quality of life. Postoperative wound healing plays a critical role in producing a successful result after functional endoscopic sinus surgery (FESS). The degree of inflammation within the middle meatus is critical and can influence scar tissue formation and therefore synechiae, which tend to occur between the middle turbinate and lateral nasal wall. Despite advancements in technology and training, the formation of synechiae continues to remain one of the most common causes of surgical failure in FESS, with an incidence of up to 27%. Platelet rich plasma is widely used in various surgical fields, including head and neck surgery, otolaryngology, cardiovascular surgery, and maxillofacial surgery. Commonly used in a gel form which is formed by mixing PRP (derived from the centrifugation of autologus whole blood) with thrombin and calcium chloride.

Aim of the work

The present work aims are assessing the role of platelates rich plasma (PRP) on post-operative symptoms, endoscopic findings and histopathological sinus tissue wound healing after FESS at 4, 12 week post-operative.

Patients and Methods

This study was conducted at the Department of Otorhinolaryngology, University of Alexandria as a prospective study. This study will be carried out on 50 patients undergoing bilateral ESS for medical refractory chronic rhinosinusitis. Informed consent was taken from all cases in the study. Patients with bilateral chronic or recurrent rhinosinusitis that was refractory to medical management as defined by their clinical history, physical examination and radiographic findings. Approval of Ethics Committee in Faculty of Medicine; Alexandria University was taken before conduction of the study. Informed consent was obtained from all participating subjects prior to their inclusion. Pre-operative assessment This was done using the Visual Analog Scale (VAS) for nasal symptoms. Radiological assessment CT scan will be graded according to Lund-Mackay radiologic grading system (0–12 for each side). Postoperative assessment the patient symptoms of chronic rhinosinusitis was assessed at 4, 12 weeks postoperatively according to VAS.

Results

Table (1): Comparison between the two studied groups regarding secretions, mucosa and granulation tissue in post-operative evaluation at 1 month.

1 Month	Group I		Group II		X ²
	No	%	No	%	P value
Secretions					
No	19	38.0	45	90.0	29.340
Yes	31	62.0	5	10.0	0.001*
Secretions category					
Normal	19	38.0	45	90.0	31.68 0.001*
Thick clear	29	58.0	3	6.0	
Thick purulant	2	4.0	2	4.0	
Mucosa					
Normal	7	14.0	39	78.0	41.953 0.001*
Mild edema	42	84.0	10	20.0	
Severe edema	1	2.0	1	2.0	
Granulation tissue					
No	22	44.0	48	96.0	32.190
Yes	28	56.0	2	4.0	0.001*
Granulation tissue category					
Absent	21	42.0	48	96.0	34.040 0.001*
Islands	26	52.0	1	2.0	
Marked	2	4.0	1	2.0	

Table (2): Comparison between the two studied groups regarding secretions, mucosa and granulation tissue in post-operative evaluation at 3 month

3 Month	Group I		Group II		X ²
	No	%	No	%	P value
Secretions					
No	37	74.0	49	98.0	11.960
Yes	13	26.0	0	0.0	0.001*
Secretions category					
Normal	36	72.0	49	98.0	12.265 0.002*
Thick clear	13	26.0	0	0.0	
Thick purulant	0	0.0	0	0.0	
Mucosa					
Normal	33	66.0	47	94.0	11.335 0.003*
Mild edema	16	32.0	3	6.0	
Severe edema	1	2.0	0	0.0	
Granulation tissue					
No	26	52.0	47	94.0	22.37
Yes	24	48.0	3	6.0	0.001*
Granulation tissue category					
Absent	26	52.0	46	92.0	21.88 0.001*
Islands	24	48.0	3	6.0	
Marked	0	0.0	0	0.0	

Conclusion

Using PRP after sinus surgery is a simple, easy, and cheap procedure that decrease post ESS synechiae, crust, and edema. It also provided better quality of life in the early postoperative period by decreasing incidence of postoperative pain and increase healing rate.