Optimized Management of Positive Margins after Initial LEEP in HSIL Patients

Chun Gao[1], Junlong Liu[1], Nan Yu[1]

Department of Obstetrics and Gynecology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, Hubei, China

Abstract

Objective: Currently, the management of patients with (Loop electrosurgical excision procedure) HSIL who still have positive margins after LEEP surgery is not standardized. This study aims to develop an optimized management plan for patients with HSIL who still have positive margins after LEEP.

Methods: We conducted a retrospective review of 61 patients with positive surgical margins following LEEP surgery. We compared the incidence of residual disease or recurrence among these patients after selecting different treatment modalities. Additionally, we performed statistical analyses of the preoperative and postoperative examination results for these patients. Furthermore, we discussed the specific management strategies for patients with positive surgical margins following LEEP surgery.

Results: Among patients with positive surgical margins after LEEP surgery, there was no significant difference in the incidence of residual or recurrent lesions between those who underwent surgical treatment and those who opted for conservative treatment (P = 0.172). Among all patients with positive surgical margins after LEEP surgery, positive margins were associated with residual/recurrent disease (P = 0.039). In the conservative treatment group, human papillomavirus (HPV) infection (P = 0.002) and positive cervical cytology test (TCT) results (P = 0.02) were associated with residual/recurrent disease, and positive HPV testing after LEEP surgery was an independent risk factor for residual or recurrent disease (OR, 17.568; 95% CI, 1.551–199.001; P = 0.021).

Conclusion: Our research indicates that conservative treatment may be prioritized for patients with positive margins following LEEP surgery.

Keywords: HSIL, LEEP, Positive Margins, HPV Testing, Conservative treatment

Table 1 Factors Associated with Residual and Recurrent Disease.

Variable	Residual/Recurrent		χ^2	*p*-value
	no N = 49 (80%)	yes N=12 (20%)		
Age[a]			n.s	0.513
< 45	31(63.27%)	6(50%)		
≥45	18(36.73%)	6(50%)		
Pre-LEEP HPV test[b]				0.2
HPV16/HPV18	21 (42.86%)	8 (66.67%)		
Other types of HPV	28 (57.14%)	4 (33.33%)		
Pre-LEEP Cytology Results[b]				0.18
≤LSIL	29 (59.18%)	10 (83.33%)		
≥ASC-H	20 (40.82%)	2 (16.67%)		
Colposcopy impression[a]			n.s	>0.99
≤LSIL	23 (46.94%)	6 (50.00%)		
≥HSIL	26 (53.06%)	6 (50.00%)		
Cervical transformation zone[b]				0.58
Type1/2	4 (8.16%)	0 (0.00%)		
Type3	45 (91.84%)	12 (100.00%)		
Margin type[b]				0.039
Exocervical	10 (20.41%)	0 (0.00%)		
Lateral	25 (51.02%)	4 (33.33%)		
Endocervical	14 (28.57%)	8 (66.67%)		

a, *p*-value from the chi-square test
b, *p*-value from Fisher's exact test as the method used for analysis
n.s, not significant

Table 2 Risk Factor Analysis for Residual/Recurrent Disease in the Conservative Treatment Group.

Variable	Residual/Recurrent		*p*-value*
	No N = 33 (82.5%)	yes N = 7 (17.5%)	
Post-LEEP HPV test			0.002
Negative	27 (81.82%)	1 (14.29%)	
HPV16/HPV18	2 (6.06%)	3 (42.86%)	
Other types of HPV	4 (12.12%)	3 (42.86%)	
Post-LEEP Cytology Results			0.02
Negative	29 (87.88%)	3 (42.86%)	
≤LSIL	4 (12.12%)	3 (42.86%)	
≥ASCH	0 (0.00%)	1 (14.29%)	

Table 3 Univariate and Multivariable Logistic Regression Analysis of Residual/Recurrent Disease in the Conservative Treatment Group.

Variable	Univariate		Multivariate	
	OR (95%CI)	*P*	OR (95%CI)	*P*
Post-LEEP HPV test	0.037(0.004-0.367)	0.005	17.568(1.551-199.001)	0.021
Negative				
Positive				
Post-LEEP Cytology Results	9.667(1.557-60.011)	0.015	3.065(0.327-26.328)	0.307
Negative				
≥ASCUS