

# HUMAN PAPILLOMA VIRUS: A POSSIBLE CULPRIT IN CHRONIC RHINOSINUSITIS WITH NASAL POLYPOSIS

*\*Seddik Abd El Salam Tawfik, \*Ahmed Ali Ibrahim, Remon Rafat Kalsa Bazak, \*\*Samar Nabil El Achy, \*Mostafa Nasr Abdel Tawab Atia*

*\*Department of Otorhinolaryngology,\*\* Department of Pathology, Faculty of Medicine, Alexandria University*

## Introduction

Chronic rhinosinusitis with nasal polyposis (CRSwNP) comprises heterogeneous clinical pictures and can be categorized into two types: eosinophilic type and non-eosinophilic one. The allergy role in the pathogenesis of CRSwNP is still debatable. T-cell-mediated immune reaction may play a significant role in eosinophilic CRSwNP. The count of eosinophils has been positively correlated with the count of mast cells and the remaining inflammatory cells as a whole. Human papillomavirus (HPV) was strongly accused in the development of inverted papilloma, but it has not been searched adequately as the culprit for the development of CRSwNP.

## Aim of the work

The present research aimed to detect HPV in patients with CRSwNP, find any relation between HPV and tissue eosinophilia.

## Patients and Methods

The study had been conducted on a total number of 90 patients. All patients are asked to withhold steroids and antihistamines four weeks before taking samples and excluded for mucociliary dysfunction or immunodeficiency. A computed tomography (CT) scan on nasal and paranasal sinuses had been dictated before taking sample for all patients. A blood sample for detection of blood eosinophilia was withdrawn from all patients with CRSwNP. PCR was done for HPV detection in both diseased and control groups. Histopathological examination for polypoidal specimens was done for tissue eosinophilic count and percentage among other inflammatory cells.

## Results

Table (1):Validity (AUC, sensitivity, specificity) for tissue eosinophilic average count over 10 HPF to discriminate Mild patients (n = 12) from Moderate + Severe patients (n = 31)

	AUC	p	95% C.I	Cut off	Sensitivity	Specificity	PPV	NPV
Tissue	0.676	0.076	0.486 –0.867	≤9	66.67	61.29	40.0	82.6

Table (2):Relation between Blood eosinophils count of total leukocytic count (1000) with Tissue eosinophilic average count over 10 HPF (n = 43)

	Blood eosinophils count of total leukocytic count (1000)						χ <sup>2</sup>	MC <sub>p</sub>
	Mild ( $<1.5$ ) (n = 12)		Moderate ( $\geq 1.5 - 5$ ) (n = 28)		Severe ( $>5$ ) (n = 3)			
	No.	%	No.	%	No.	%		
Tissue eosinophilic average count over 10 HPF								
Mild ( $\leq 9$ )	8	18.6	12	27.9	0	0.0	8.529*	0.040*
Moderate ( $>9 - 19$ )	3	7.0	14	32.6	1	2.3		
Severe ( $>19$ )	1	2.3	2	4.7	2	4.7		
% agreement	24/43 = 55.8%							

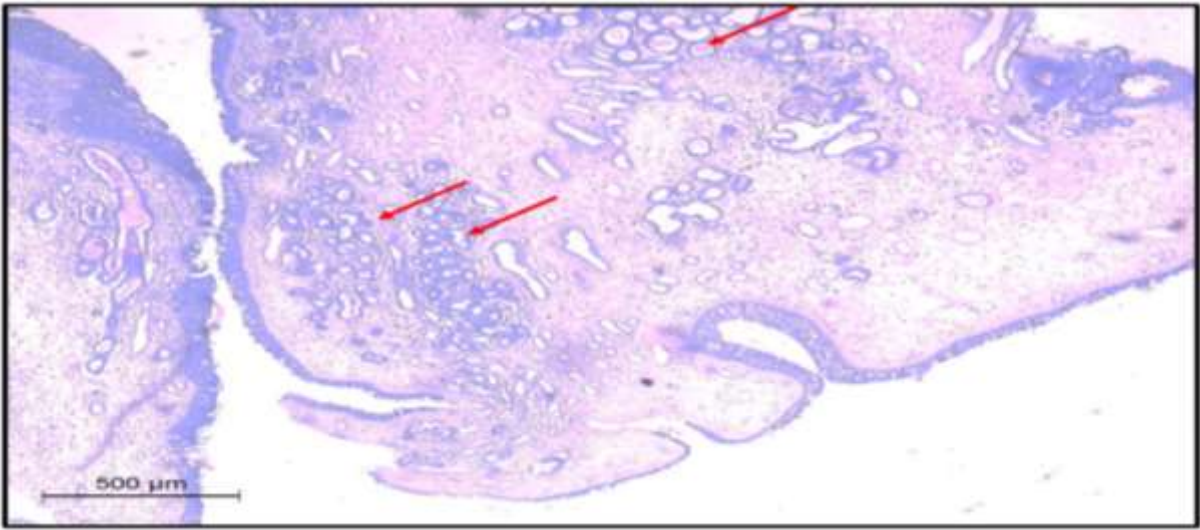


Figure (1): A photomicrograph showing a low power view of nasal polypi lined by pseudostratified columnar epithelium with moderate inflammatory infiltrates in an oedematous fibrous stroma, as well as mucus gland hyperplasia (arrows). (H&E Stain)

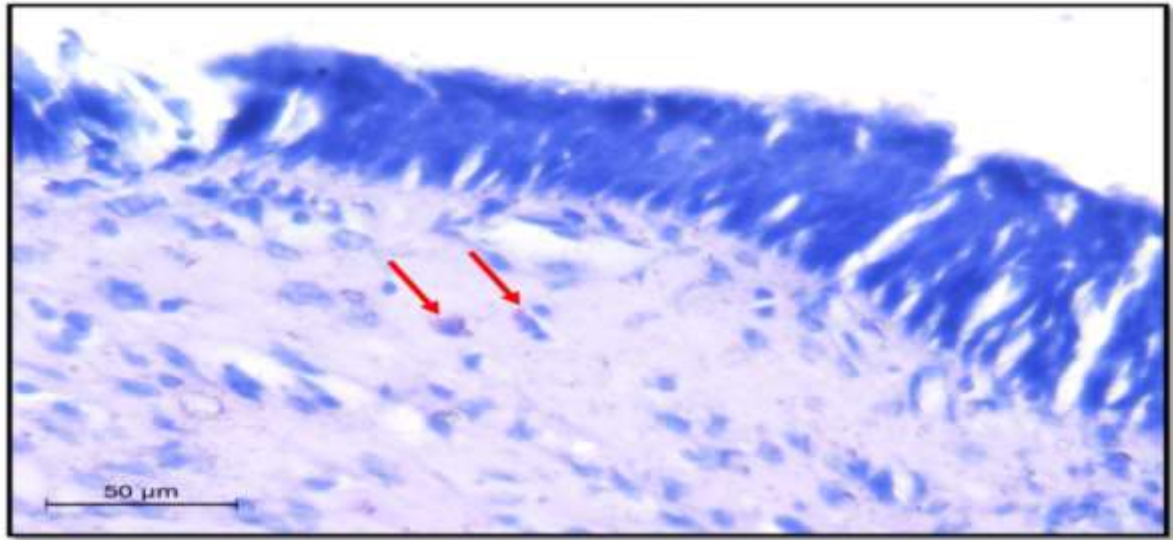


Figure (2): A photomicrograph showing a nasal polyp lined by pseudostratified columnar epithelium with few inflammatory infiltrates comprising eosinophils (magenta red in colour). Giemsa Stain

## Conclusion

PCR did not detect any of the 28 genotypes of HPV in neither polyps of patients with CRSwNP nor the nasal mucosa of normal controls, rendering the pathogenic role of HPV in CRSwNP unlikely. Total eosinophilic count within the polyps and their percentage relative to the other inflammatory cells showed a weak positive correlation with the blood eosinophilia. Single site sampling to study tissue eosinophilia is not accurate, as tissue eosinophils have a variable distribution in nasal polyps and within different parts of the each polyp.

## REFERENCES

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