

# HPV and H&N Cancer

**What Your Pathologist should tell  
you**

# Introduction

- HPV is seen in a subset of H&N cancer
- Oropharynx-Tonsil and BOT
- Seen in younger patients without traditional risk factors
- HPV DNA found in tumors

# What is HPV

- Small DNA virus which can affect the mucosal lining of of genital tract, anus and oropharynx
- One in 49 people infected each year
- Classified into low and high risk
- 75% of sexually active men and women affected at some point in their life.

# What is HPV (cont.)

- Most people do not develop symptoms
- 90% of people clear virus within two years
- 10% maintain low viral copies indefinitely
- Weakened immune system allows virus to replicate
- These people are at highest risk for HPV cancer

# New HPV Infections

- Women 26%, men 3.8%
- Men clear HPV-16 more slowly
- HPV-16 accounts for over 90% of oropharyngeal cancers
- 6.8% of men and 3.6% of women have persistent disease

# Epidemiology

- 25% of H&N cancer is HPV related
- 80% of oropharyngeal cancers are HPV related
- Incidence of oropharyngeal cancer as a total of all H&N cancer is increasing 2% per year
- By 2025 HPV related cancers will outnumber non-HPV cancer.

# Differences

- Localized to tonsil and BOT
- Higher socioeconomic status
- 10 years younger
- Decreased association with alcohol and tobacco abuse

# Differences(cont)

- 5 year survival rate for HPV cancer is 82%
- 5 year survival rate for non-HPV cancer is 57%
- Primarily treated with chemo-radiation
- De-escalating treatment being studied



# Why are the tonsil and BOT vulnerable

- Tonsil is basically an enlarged lymph node which serves as the first line of defense to foreign material
- Tonsillar tissue has deep crypts and greater surface area
- Cancer begins in crypts and is difficult to diagnose early
- Lymph node most common presentation

# Saliva-based HPV Test

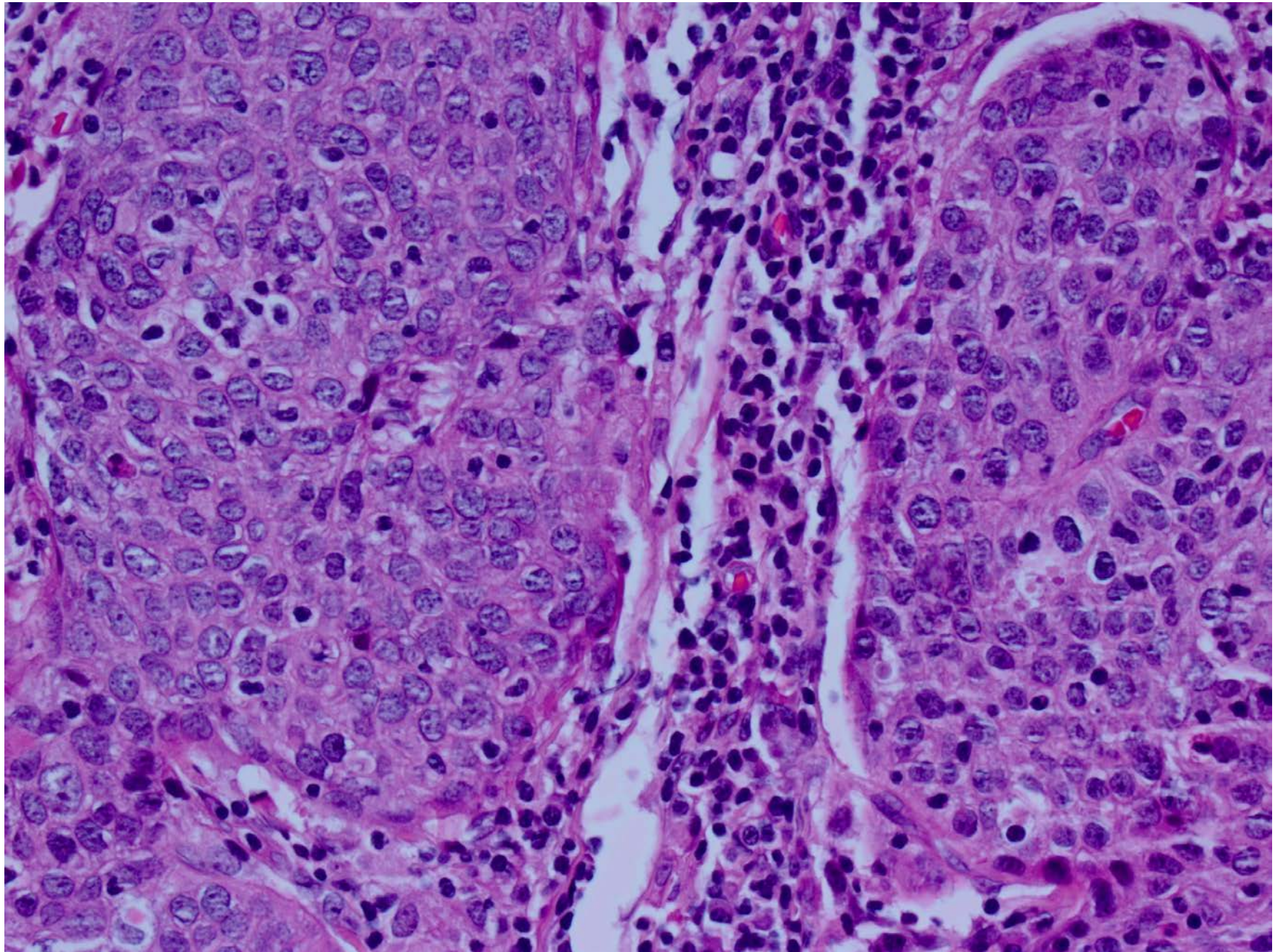
- Will your patient develop cancer if it is positive?
- What should I do for my patient if they are positive?
- Should I do this test and what does it mean?

# Saliva-based HPV Test(cont.)

- HPV DNA must become integrated into the host cell to become oncogenic
- Integration occurs at a fairly low frequency
- No evidence that serial testing and persistence of virus increases cancer risk
- Relevance is unclear
- How would you follow patients
- Is this “a test looking for a disease”







# P16

- Surrogate marker for high-risk HPV
- Technically simple and widely available
- P16 overexpression(greater than 70%) strongly correlates with HPV infection
- Easy to read and interpret. Strong nuclear and cytoplasmic staining

# In-situ Hybridization

- Specific for low and high risk HPV
- Depending on test, may not identify all HPV types.
- Technically more difficult and not widely available. May have to be sent to reference lab
- May be more difficult to read



