# Human papilloma virus related disorders in head and neck

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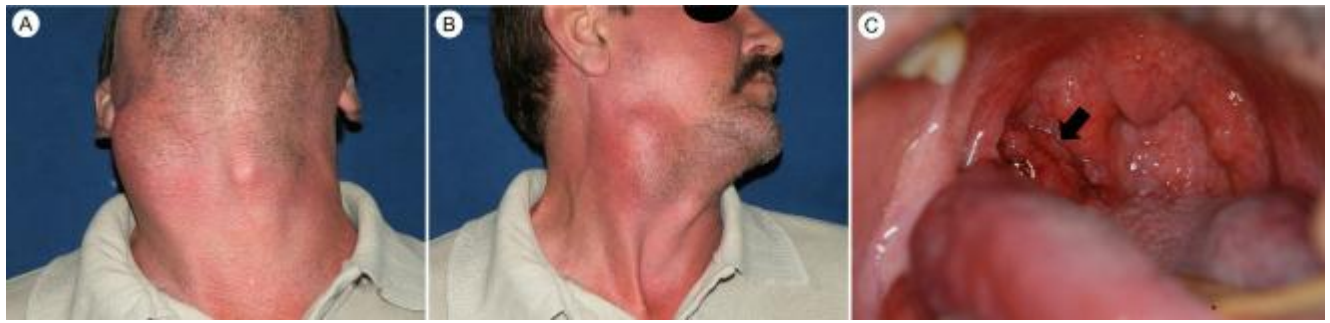
# Introduction

- HPV related squamous cell carcinoma(scc)

1. growing subset of oropharyngeal scc
2. They tend to have fewer comorbidities and are younger
3. less likely to have a heavy smoking history.

- Recurrent respiratory papillomatosis



# HPV related OPSCC

- HPV is a sexually transmitted infection
- the majority of cancers arises in lingual and palatine lymphoid tissue
- Oral HPV infection refers to viral DNA detected in oral rinses using polymerase chain reaction
- HPV16 was the most common in oral infection/OP cancer
- Oral infection is more common in men
- As with most viruses, oral HPV infection is also strongly associated with immunosuppression. Human immunodeficiency virus (HIV), worsening CD4 count and iatrogenically immunosuppressed patients (e.g., transplant recipients) are at increased risk for oral HPV infection.

- The odds of oral HPV infection increase with increasing current tobacco and marijuana use.
- HPV-OPSCC accounts for 30% of OPSCCs worldwide and 60% to 85% of OPSCCs in recent U.S. series.
- HPV has been detected in 2% to 20% of oral cavity SCCs and in 5% to 30% of SCCs of the larynx, sinonasal tract, and nasopharynx.
- A substantial proportion of unknown primaries are indeed oropharyngeal malignancies, of which 90% are HPV positive. Therefore, the presence of HPV in cervical metastases can be used to guide the investigation for primary site to the oropharynx.

# Clinical charachteristic

- smaller primary tumors.
- more nodal disease
- By the new staging criteria, in contrast, 80% of HPV-OPSCCs are now considered Stage I.
- HPV-OPSCCs tend to present with cystic metastatic neck nodes or are misdiagnosed as branchial cleft cysts
- HPV-OPSCCs are nonkeratinizing with basaloid features, they are well-differentiated, and they exhibit central necrosis.

# New staging

*Table 1*

Clinical and Pathological TNM-8 Staging Summary (also applicable for p16+/HPV+ unknown **primary tumor of the head and neck**)

**Definition of Clinical and Pathological T and N Category**

| T | Clinical / Pathological | N | Clinical | Pathological |
|---|---|---|---|---|
| T1 | ≤ 2 cm | N0 | No regional LNs | No regional LNs |
| T2 | 2-4 cm | N1 | Ipsilateral LNs, ≤6 cm | ≤4 LNs |
| T3 | 4-6 cm | N2 | Bilateral/ contralateral LNs, ≤6 cm | >4 LNs |
| T4 | >6 cm | N3 | > 6.0 cm LNs | Not applicable |

**cTNM and pTNM Stage Grouping**

| cTNM | cN0 | cN1 | cN2 | cN3 | pTNM | pN0 | pN1 | pN2 |
|---|---|---|---|---|---|---|---|---|
| T0 | Stage I | | Stage II | Stage III | T0 | Stage I | | Stage II |
| T1 | | | | | T1 | | | |
| T2 | | | | | T2 | | | |
| T3 | Stage II | | | | T3 | Stage II | | Stage III |
| T4 | Stage III | | | | T4 | | | |

**Any M1: Stage IV**

# Better prognosis

- The improved survival is likely due to:

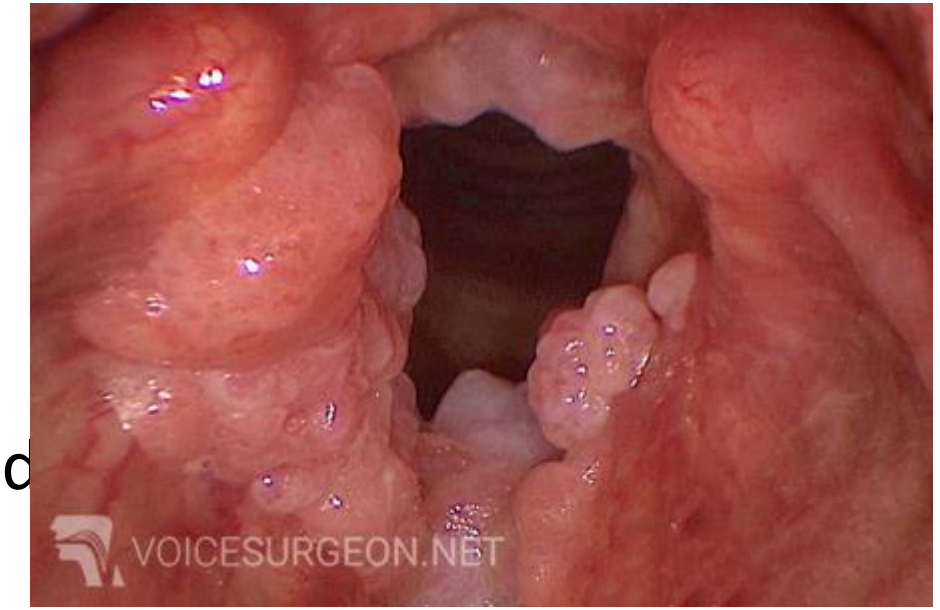
1. increased radiosensitivity
2. the absence of tobacco exposure in many patients with a reduced likelihood of field cancerization and second primary tumors
3. an inverse correlation with adverse tumor biomarkers such as epidermal growth factor receptor (EGFR) and p53 mutations

- Nonsurgical treatment

# Recurrent respiratory papillomatosis

- RRP is rare disease in which papillomas of the airway cause hoarseness and airway obstruction.
- The disease is caused by human papillomavirus 6 and 11(low risk).
- most common benign neoplasm of the larynx in children.
- RRP has potentially fatal consequences and is often difficult to treat because of its tendency to recur and spread throughout the respiratory tract

# RRP




- Juvenile or adult
- Age less than 3y/o are more severe
- An association between cervical HPV

infection in the mother and the

incidence of RRP has been well established

- Vertical transmission, occurring during

delivery through an infected birth canal, is presumed to be the major mode of transmit  the infection to children, whereas in utero and transplacental transfer of HPV, sexual abuse, and direct contact are thought to play a minor role.

- 1st born(prolonged time of delivery) , vaginal delivery
- elective cesarean delivery as a means of preventing RRP is currently not practical or recommended.
- prevention of RRP began with the emergence of the quadrivalent HPV vaccine (Gardasil; Merck)
- There is increasing evidence that the vaccine may be beneficial in the treatment of patients with existing disease by reducing regrowth after debridement.

# Presentation

- Hoarseness is most common(TVC)
- Stridor is the second most(insp to biphasic)
- Chronic cough, FTT, dyspnea,…

- disease may undergo spontaneous remission, or it may persist in a stable state that requires only periodic surgical treatment. At the other extreme, RRP may become extremely aggressive and may require frequent surgical treatment.

- The role of tracheotomy in the management and pathogenesis of RRP remains controversial.
- When a tracheotomy is unavoidable, decannulation should be considered as soon as possible
- Children with bronchopulmonary dysplasia who require prolonged endotracheal intubation may also be at increased risk for the development of RRP
- Extralaryngeal spread: oral cavity> trachea> bronchi

- Pulmonary papilloma lesions begin as asymptomatic noncalcified peripheral nodules. These lesions eventually enlarge to undergo central cavitation and central liquefactive necrosis, manifested as air-fluid levels on CT scanning.

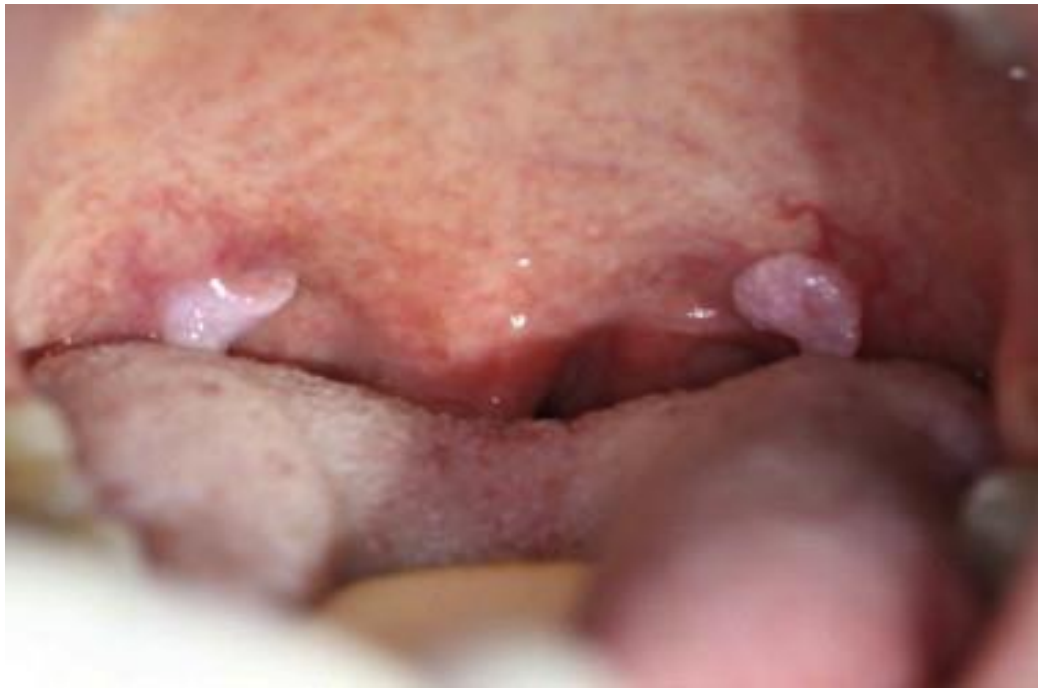
- pulmonary lesions in a patient with RRP has a grave prognosis

- pulmonary dissemination is anecdotally associated with a higher risk of malignant transformation of RRP

# Approach

- Any lesion should be biopsied

1. Histologic evaluation
2. HPV typing
3. staging



# Treatment

- At present there is no “cure” for RRP, and no single modality has demonstrated consistent efficacy in eradicating the disease.
- The current standard of care is surgical therapy with the goals of complete removal of papillomas and preservation of normal structures.
- The aim of therapy in extensive disease should be to reduce the tumor burden, decrease the spread of disease, create a safe and patent airway, optimize voice quality, and increase the time interval between surgical procedures

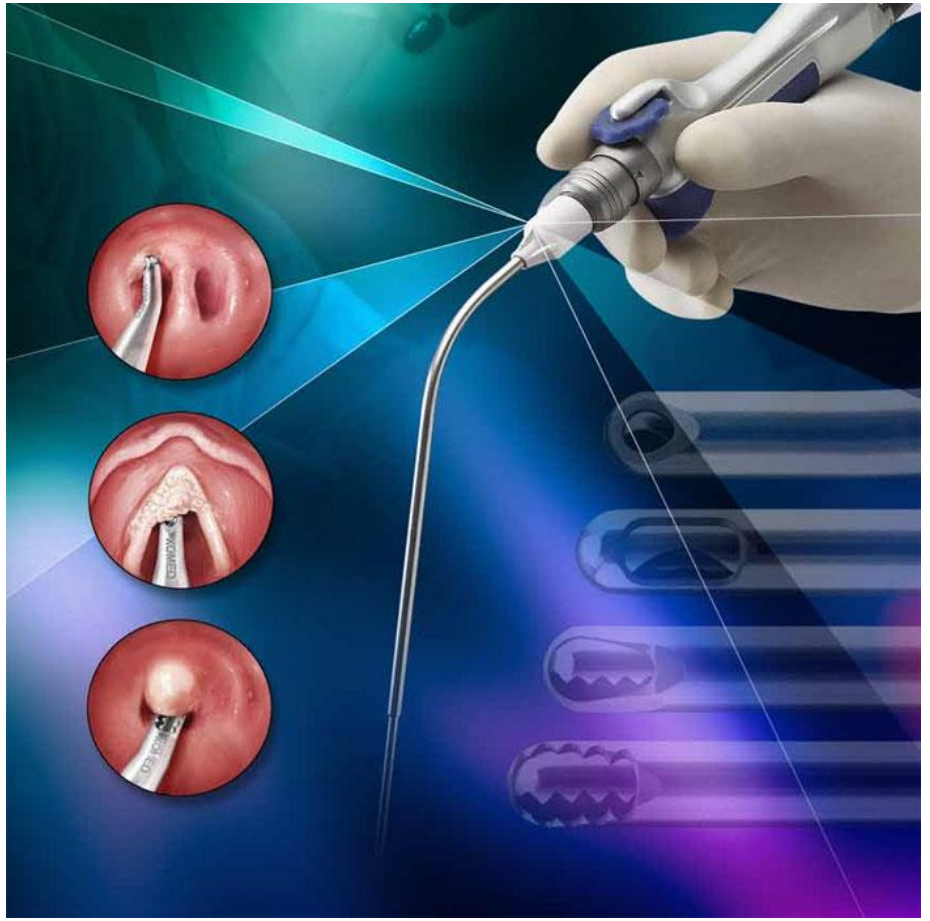
# Surgical treatment

- Laser

1. $CO_2$ most common
2. KTP: distal tracheobronchial tree
3. Argon

- Microsurgery

- ***microdebrider***



# Adjuvant treatment modality

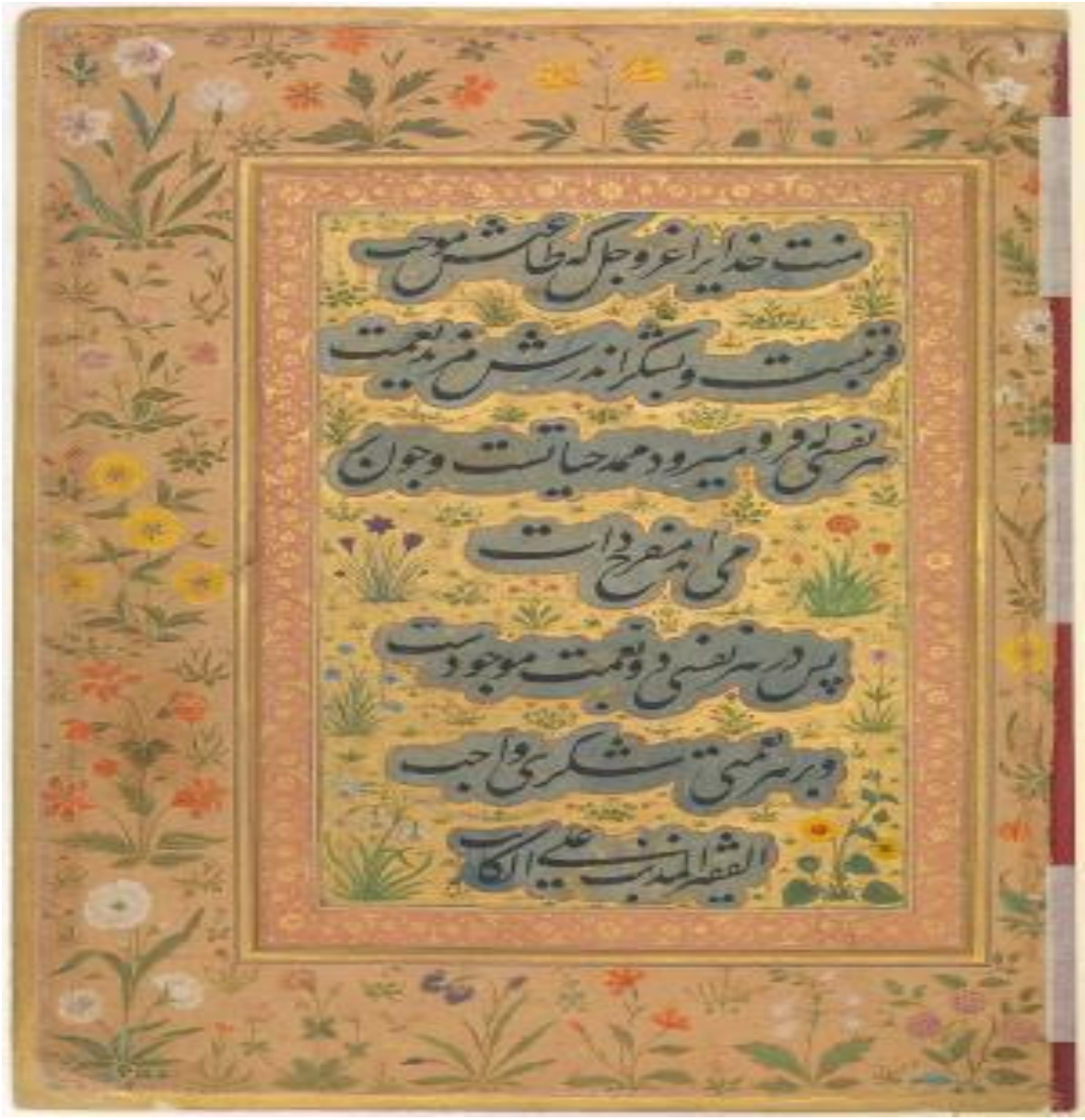
- surgical management remains the mainstay therapy for RRP.
- Criteria:

1. requirement for more than four surgical procedures per year
2. rapid regrowth of papilloma disease with airway compromise
3. distal multisite spread of disease

# Modalities

- Cidofovir
- PDT
- Carbinol
- Interferon
- Celecoxib
- And….

# حضرت سعدی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قربت و بشکر اندرش مزید نعمت
هر نفسی که فرو میرود ممد حیات است و چون
می آید مفرح ذات
پس در هر نفسی دو نعمت موجود است
و بر هر نعمتی شکری واجب
الفقیر المذنب علی الکاتب