



EARLY DECANNULATION FOR RRP – THE “ON TABLE” DECANNULATION.

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ABSTRACT

Recurrent respiratory papillomatosis [RRP] is a potentially life threatening disease characterized by development of papillomas anywhere in the respiratory tract from nasal vestibules to terminal bronchi. Clinical diagnosis should be established with awake fiberoptic nasolaryngoscopy because the difficulties presented to the anesthetist by unexpected laryngeal papillomas cannot be overstated. We present a case of respiratory papillomatosis with severe stridor which was referred from a primary health centre to tertiary hospital and was effectively managed after diagnosis by emergency tracheotomy and debridement followed by on table decannulation.

KEYWORDS: RRP, stridor, tracheotomy, decannulation, papillomas.

INTRODUCTION

Recurrent respiratory papillomatosis [RRP] is the most common benign neoplasm of larynx in children and second most common cause of stridor in childhood, where it tends to be more aggressive and chronic. RRP is problematic because of various reasons like high chance of recurrence, unpredictable clinical course, lack of specific treatment and risk of malignant transformation. Emergency tracheotomy is the only way of providing airway in a stridulous child with papillomas occluding the airway, when a tracheotomy is unavoidable, decannulation should be considered as early as possible. We present a case of respiratory papillomatosis with severe stridor which was referred from a primary health centre to tertiary hospital and was effectively managed after diagnosis by emergency tracheotomy and debridement followed by on table decannulation.

CASE REPORT

A 4 year old male child, resident of Patna, Bihar presented to our department with the complaints of progressive hoarseness for 8 months, difficulty in breathing for 15 days and noisy breathing for 2 days. The child was initially evaluated in a local hospital and found to have severe stridor and was referred to All India Institute of Medical Sciences, New Delhi without evaluating the cause for stridor. On examination, the child was in frank stridor and awake fiberoptic laryngoscopic evaluation in OPD revealed papillomatosis completely filling the glottis and X ray soft tissue neck [fig.1] showed soft tissue shadow at the level of glottis and in posterior pharyngeal wall. The child was shifted to operation theatre for emergency debridement. The child saturation dropped immediately on lying down and

emergency tracheotomy was done and airway secured. Papillomas were seen completely occluding the view of glottis [fig.2]. Laryngeal papillomas were removed using microdebrider. Papillomas were found involving bilateral false cords, ventricle, true cords, just below the anterior commissure and posterior pharyngeal wall. After ensuring the complete removal of papillomas [fig.3] and evaluating lower airways [bronchoscopy] surgical decannulation was done during the same procedure.

DISCUSSION

Recurrent respiratory papillomatosis (RRP) is a relatively rare condition with an incidence of 1.7– 4.3 per 100,000 in pediatric population.^[1,2] It is the most common benign childhood neoplasm of the larynx and the second most frequent cause of childhood hoarseness.^[3,4] The disease most commonly occurs due to vertical transmission of human papilloma virus (HPV) from the mother, most frequently by the HPV types 6 and 11. However, the exact mode of HPV transmission is still not clear.^[3,5] Although benign, the disease has an unpredictable course with a tendency to recur, spread throughout the aerodigestive tract, risk of malignant transformation making a clinical challenge to manage.^[3]



Fig 1. X ray soft tissue neck lateral view showing soft tissue obstruction of glottis (white arrow) and soft tissue mass in posterior pharyngeal wall (black arrow).



Fig 2. Laryngoscopic view showing complete obstruction of glottis by papillomas.



Fig 3. Laryngoscopic view after complete removal

Papillomas typically proliferate in the larynx at anatomical sites known as transformation zones which are areas where squamous epithelium meets ciliated columnar epithelium. Other sites include vestibule of the nose, nasopharyngeal surface of the soft palate, trachea especially after tracheostomy.^[6] Hoarseness followed by stridor are the principal symptoms of respiratory papillomatosis since vocal cords are the first and predominant site of papillomatous lesions. The usual time from onset of symptoms to diagnosis of RRP is approximately 1 year.^[1] In our case the duration was 8 months.

Emergency tracheotomy is the only way of providing airway in a stridulous child with papillomas occluding the airway. These children tend to be younger and have widespread disease.^[7] Tracheotomy may activate or contribute the spread of disease to lower airways and in one series it was noted that tracheal papillomas developed in half of the patients with tracheotomy.^[8] Most authors favour the opinion that tracheotomy is a procedure to be avoided unless absolutely necessary and when a tracheotomy is unavoidable, decannulation should be considered as early as possible, once the disease is managed effectively. In our case the child was in stridor for 2 days and emergency tracheostomy was done. After debridement surgical decannulation was immediately done preventing long term morbidities associated with tracheotomy.

At present, there are no medical or surgical cures for RRP. Surgical management with a goal of complete removal of papillomas and preservation of normal structures remains the mainstay of therapy. Surgical options available for RRP include microsurgery with cold instruments, laser ablation and microdebrider, out of which microdebrider has become the preferred instrument in recent times. The advantages of microdebrider include lack of thermal damage, less collateral laryngeal mucosal trauma, less procedure time, no risk of laser fire or burns, no risk of aerosolized viral DNA particles, less expensive than laser, improved voice quality and no increase in pain scores. Adjuvant therapies like antiviral drugs (interferon alpha, cidofovir, ribavirin, acyclovir), intralesional injections (cidofovir, methotrexate, acyclovir, podophyllin, izoprinosine), photodynamic therapy, indole-3-carbinol, celebrex, retinoids, cimetidine may be needed in around 20% of patients.^[3,9] Till date two case reports showed complete disappearance of papillomas after HPV vaccination suggesting vaccination against HPV may also decrease the incidence of RRP, possibly eradicating RRP in future generations.^[3,10]

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REFERENCES

1. Derkay CS. Task force on recurrent respiratory papillomas: a preliminary report. *Arch Otolaryngol Head Neck Surg.* 1995; 121: 1386–1391.
2. Reeves WC, Ruparelia SS, Swanson KI, et al. National registry for juvenile-onset respiratory papillomatosis. *Arch Otolaryngol Head Neck Surg.* 2003; 129: 976–982.
3. Derkay CS, Wiatrak B. Recurrent respiratory papillomatosis: a review. *Laryngoscope.* 2008 Jul; 118(7): 1236–47.
4. Morgan AH, Zitch RP. Recurrent respiratory papillomatosis in children: a retrospective study of management and complications. *Ear Nose Throat J.* 1986; 65: 19–28.
5. Kosko JR, Derkay CS. Role of cesarean section in prevention of recurrent respiratory papillomatosis: is there one? *Int J Pediatr Otorhinolaryngol.* 1996; 35: 31–38.
6. Lively JM, Shah RK. Recurrent respiratory papillomatosis: A possible role for the HPV vaccine? *JAAPA.* 2013 May; 26(5): 48, 51–3.
7. Shapiro AM, Rimell FL, Shoemaker D, et al. Tracheotomy in children with juvenile-onset recurrent respiratory papillomatosis: the Children's Hospital of Pittsburgh experience. *Ann Otol Rhinol Laryngol.* 1996; 105: 1–5.
8. Cole RR, Myer CM III, Cotton RT. Tracheotomy in children with recurrent respiratory papillomatosis. *Head Neck.* 1989; 11: 226–230.
9. Gallagher TQ, Derkay CS. Recurrent respiratory papillomatosis: update 2008. *Curr Opin Otolaryngol Head Neck Surg.* 2008 Dec; 16(6): 536–42.
10. Mészner Z, Jankovics I, Nagy A, Gerlinger I, Katona G. Recurrent laryngeal papillomatosis with oesophageal involvement in a 2 year old boy: successful treatment with the quadrivalent human papillomatosis vaccine. *Int J Pediatr Otorhinolaryngol.* 2015 Feb; 79(2): 262–6.