Photoangiolitic blue laser treatment for laryngeal papillomatosis: a single-center experience

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The aim of this presentation is to showcase the versatility and efficacy of photoangiolytic (blue "445nm") laser therapy for recurrent laryngeal papillomatosis. We will present our therapeutical approach showing two distinct clinical cases from our practice: A massive laringeal papillomatosis treated under general anesthesia and laryngeal papillomatosis treated in-office under local anesthesia, highlighting the benefits and outcomes of this approach. Laryngeal papillomatosis is a benign, but often recurring disease of the larynx caused by the Human papillomavirus (HPV). It is characterized by wart-like growths that can cause significant voice and breathing problems. The main treatment is surgical removal, but the high recurrence rate means patients often need multiple procedures under general anesthesia, which can lead to vocal cord scarring and significant health care cost. The blue laser (445 nm wavelength) is a type of photoangiolytic laser. Its energy is highly absorbed by oxyhemoglobin, coagulating blood vessels which causes the lesion to shrink and eventually die off. This method minimizes damage preserving vocal function. Case 1: This case involves long-standing laryngeal papillomatosis with respiratory distress. Due to the extent of the disease, the surgical procedure was performed under general anesthesia. The patient was previously unsuccessfully treated with a CO2 laser. Case 2: In the second clinical case, we present a young man with a long history of hoarseness due to laryngeal papillomatosis. This was treated in an in-office setting using a working channel fiber endoscope under local anesthesia. In all of our patients, we use HPV vaccination (Gardasil 9) and high doses of curcumin. Vaccination and curcumin both show an imunomodulatory effect as an adjuvant therapy following surgical intervention for the reduction of recurrence rates. Blue laser therapy for vocal cord papillomas is highly precise, minimizing damage to healthy tissue and reducing the risk of scarring, which is essential for preserving voice quality. It has a significantly lower recurrence rate. The treatment can often be performed in an in-office setting under local anesthesia, avoiding the need for repeated surgeries and significantly reducing the overall healthcare costs.

Key words: Human papillomavirus (HPV), laryngeal papillomatosis, blue laser