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Spontaneous regression of laryngeal carcinoma in 10 year old boy: A case report and review of literature

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ABSTRACT

Laryngeal carcinoma is a rare pathology in children, with only 92 cases reported. Spontaneous regression of laryngeal carcinoma is even more unique clinical event, so far only observed in adults. In this report we present an extraordinary case of a 10 year old patient with laryngeal squamous cell carcinoma that underwent spontaneous regression.

1. Introduction

Laryngeal carcinoma is a rare pathology in children, with 92 cases reported in the literature since 1868 [1,2]. Generally, laryngeal carcinoma accounts for less than 0.1% of all head and neck malignancies in patients younger than 15 year old [3].

Spontaneous regression of cancer is a fascinating phenomenon observed in medicine. It is defined as the partial or complete disappearance of a malignant tumor in the absence of all treatment, or in the presence of therapy which is considered inadequate to exert a significant influence on neoplastic disease [4]. Only 7 cases of spontaneous regression of adult laryngeal carcinoma have been published in the literature since 1900 [5,6].

To the best of our knowledge, there is no report in the literature about spontaneous regression of laryngeal carcinoma in pediatric patients.

2. Case report

A 10 year old boy presented with progressive hoarseness for the past 2 years. No examination of patient's larynx was performed before and no treatment was suggested. The patient had no history of smoking, passive smoking exposure, recurrent respiratory papillomatosis or previous irradiation. On evaluation with video laryngoscopy, an erythematous, bulky rough surface lesion involving 2/3 lengths of the left vocal fold and bulging medially into glottis was revealed (Fig. 1). The mobility of both vocal folds was normal. The other otolaryngological examination findings were within normal limits. Given these findings, the presumed diagnosis of laryngeal papilloma was considered and the patient was scheduled for direct microlaryngoscopy and endoscopic removal of the tumor.

A direct microlaryngoscopy performed under general anesthesia revealed a papillomatous cauliflower shaped bulging tumor involving 2/3 of the left vocal fold. The lesion reached the anterior commissure without frank invasion of the contra-lateral side. The tumor tissue while removing with cold instruments appeared friable and bleeding at minimal tissue handling. After removal of the soft superficial layer of the lesion, a rather firm tissue extending to the lower surface of the left vocal fold was revealed. It was not possible to remove this part of the tumor without major trauma of the child's larynx. Therefore, suspecting laryngeal papilloma and having no histology of the lesion during the surgery, this part of the tumor was left in situ, thus considering an incomplete removal of the tumor.

Histopathological examination of removed tissue at the Department of Pathology reported a moderate differentiated squamous cell carcinoma (G2) (Fig. 2). Imuno-histochemical investigation revealed p16 positive staining in removed tissue (Fig. 3). These results were confirmed at the National Cancer Institute. Pathology images have been reviewed by experienced head and neck pathologist (VS).

For identification of HPV type from removed tumor tissue the Optiplex HPV Genotyping Kit - Fluorescent Bead Assay containing a set of 24 HPV types in Polymerase Chain Reaction amplified samples was used. The patient was diagnosed with HPV type 26, which is not a high oncogenic risk HPV subtype, according to the literature [7].

Neck computed tomography (CT) scan performed two weeks after surgery showed exophytic tumor on the anterior 1/3 of left vocal fold without any pathological regional lymph nodes. MRI examination revealed an exophytic mass lesion on the anterior 1/3 of the left vocal

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Fig. 1. Video laryngoscopy. An erythematous, bulky, rough surface lesion involving 2/3 lengths of the left vocal fold and bulging medially into glottis.

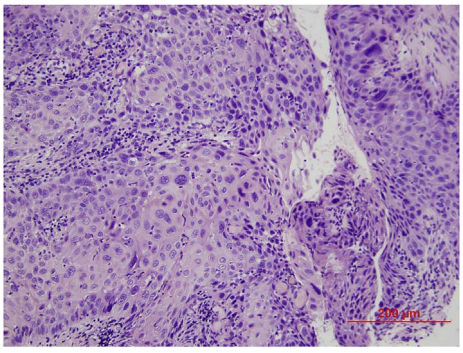

Fig. 2. Histological section of the tumor tissue specimen from the left vocal fold displays squamous cell carcinoma manifesting with atypical epithelial cells with numerous mitoses: enlarged, polymorphic nuclei, eozinophilic cytoplasm; some large nuclei contain the small nuclei. Atypical epithelial cells are arranged irregularly with invasive growth; some of the cells show characteristic signs of keratinization. (H & E).

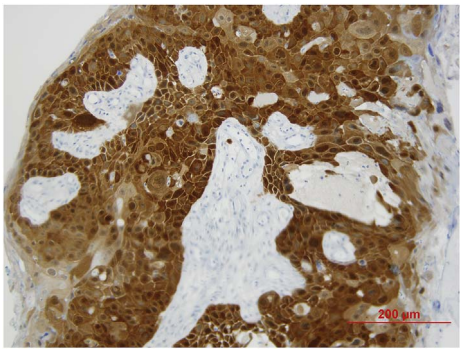

Fig. 3. Immunohistochemical staining with p16 demonstrates strong diffuse nuclear and cytoplasmic staining in squamous cell carcinoma.

fold, without signs of invasion into the anterior commissure or thyroid cartilage. Bilaterally in the neck, homogenic multiple lymphatic nodes were observed (Fig. 4).

Consequently, the patient was diagnosed with T1aN0M0 stage I G2 squamous cell carcinoma of the larynx. After a multidisciplinary evaluation of the case, including radiation oncology, medical oncology and otolaryngology, the decision was made to pursue surgical resection of the tumor (type Vc cordectomy with CO2 laser; if not enough exposure, continue with open approach) [8]. However, it took about 4 weeks to get the results of all tests. The patient was followed up every two weeks during that period; video laryngoscopic examination was done on each occasion. No signs of tumor progression were revealed (Fig. 5). Therefore, under request of the parents the planned surgery was delayed.

During the next 4 weeks of follow up the evident and visible regression of the lesion on the left vocal fold was revealed (Fig. 6). Giving the recent findings it was decided to perform again the direct microlaryngoscopy and biopsy of the left vocal fold.

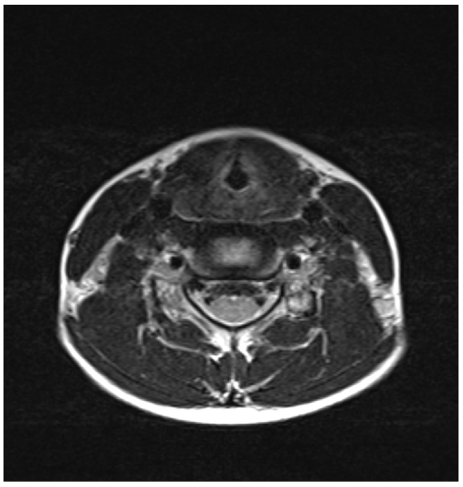

Fig. 4. MRI. An exophytic mass lesion on the anterior 1/3 of the left vocal fold without signs of invasion into the anterior junction or thyroid cartilage.

Fig. 5. Video laryngoscopy 4 weeks after previous surgery. Slight hyperplasia of the left vocal fold with no signs of tumor progression. (Compare to Fig. 1).

Fig. 6. Video laryngoscopy two months after surgery. A slight hyperemia and vascular injection of the left vocal fold. No evident signs of the tumor.

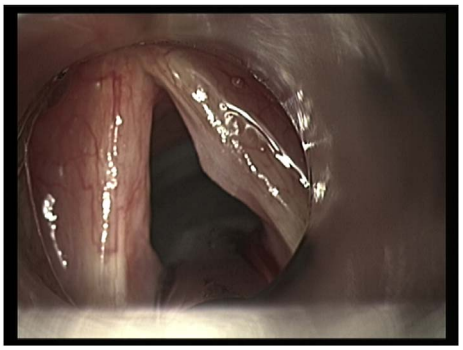

Fig. 7. Direct microlaryngoscopy two months after previous surgery. Normal appearance of the left vocal fold; limited hyperplasia of the right vocal fold.

Under direct microlaryngoscopy the left vocal fold was found normally appearing. The limited hyperplasia of the right vocal fold was present (Fig. 7).