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Acute Exacerbation of Conjunctival Papilloma after High-frequency Radio Wave Electrosurgery for Conjunctivochalasis: A Case Report

Dear Editor,

Conjunctivochalasis (CCH) is a chronic loosening of the conjunctiva that occurs significantly in the inferior bulbar conjunctiva. High-frequency radio wave electrosurgery is a surgical procedure for the treatment of CCH. There are fewer complications related to postoperative discomfort and suture; only minor complications, such as subconjunctival hemorrhage and chemosis, have been reported [1,2]. To the best of our knowledge, this is the first report of an human papillomavirus (HPV)-positive conjunctival papilloma in a patient who underwent high-frequency radio wave electrosurgery. Written informed consent for publication of the research details and clinical images was obtained from the patient.

A 78-year-old Asian woman visited the outpatient with not having shed tears for 3 years and had irritation in both eyes, was treatmented for dry eye at a private hospital, but did not improve, so she visited Hanyang University Guri Hospital. On examination, she exhibited bilateral CCH. Conjunctival hyperemia, conjunctiva and plica semilunaris thickening, papillomatous lesion, and abnormal blood vessels were not visible in the conjunctiva (Fig. 1A, 1B). Even with proper dry eye treatment, the symptoms did not improve even after a month. Therefore, high-frequency radio electric surgery for CCH was planned and performed. Postsurgery, artificial tears, 0.1% fluorometholone, and 0.5% levofloxacin were instilled in both eyes four times a day.

Two months after electrosurgery, the patient presented with hyperemia of both eyes and a burning sensation. She had a grayish-red, fleshy, and irregular surfaces on the inferior bulbar conjunctiva in the right eye. The left eye showed several small pedunculated masses in the inferior bulbar conjunctiva (Fig. 1C, 1D). Excisional biopsy was performed, and histological examination showed atypical squamous proliferation, moderate dysplasia, with a positive polymerase chain reaction (PCR) for HPV (low-risk type 11). Immunohistochemistry revealed that the right eye was p16-positive, p53-positive (15%), and Ki-67–positive (20%); the left eye was p16-negative, p53-positive (2%), and Ki-67–positive (10%) (Fig. 1E–1H). Topical mitomycin C 0.02% drops (four times a day for a week) were prescribed for both eyes. The drops were administered for a week, followed by a week of rest. Existing small recurrent lesions were resected during follow-up. As a result of observation after 5 months, no recurrence lesion was observed.

Conjunctival papilloma is an acquired benign tumor that occurs in the stratified squamous epithelium of the conjunctiva. Exposure to solar ultraviolet radiation B is an important risk factor, and other risk factors include immunosuppression and the presence of HPV [3]. Patients with conjunctival intraepithelial neoplasia, conjunctival carcinoma *in situ*, or conjunctival squamous carcinoma showed HPV-positivity by PCR in 21% of primary tumors and 36% cases of recurrence [4].

In order for HPV to infect basal cells, minor trauma to the epithelial barrier is required. HPV is not considered a reservoir because it has never been observed in the normal conjunctiva. HPV is mainly transmitted to the conjunctiva through the fingertips. In this case, several possibilities can

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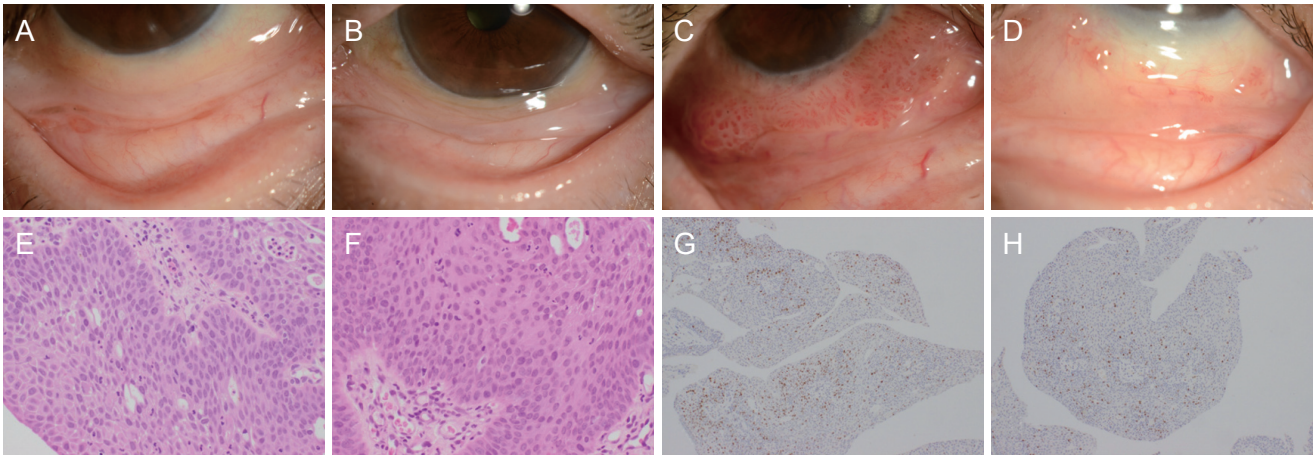

Fig. 1. Slit-lamp photographs and histological images of the patient. (A,B) Slit-lamp photographs of the patient before treatment. The photographs show conjunctivochalasis of both (A) right and (B) left eyes. No other abnormal findings were observed. (C,D) Slit-lamp photographs of the patient 2 months after high-frequency radio wave electrosurgery. The photographs show (C) a grayish-red, fleshy, pedunculated mass with an irregular surface in the inferior bulbar conjunctiva in the right eye and (D) several small pedunculated masses in the inferior bulbar conjunctiva in the left eye. (E–H) Histological examination of the right eye and the left eye. H&E stains (×400) show atypical squamous proliferation, moderate dysplasia in both (E) right and (F) left eyes. Immunohistochemistry (×100) of (G) right eye shows Ki-67–positive (20%) and (H) left eye shows Ki-67–positive (10%) .

be considered. First, there is a possibility that existing lesions caused by HPV were omitted and spread widely to the subsonic conjunctiva through microtips used in high-frequency radio wave electrosurgery. There is a possibility that the active spread of benign lesions was activated due to electrical stimulation or inflammation induced by surgery. It is widely known that inflammation acts as a promoter for cancer development, and similarly, the relationship between HPV and cervical cancer has been studied [5].

As shown in Fig. 1, the sowing pattern observed in the left eye was found to be sown through a surgical instrument. HPV appeared in lesions that could not be observed before surgery, and HPV proliferation is believed to have occurred in the infected area. Another possibility is that the surgical destruction of the conjunctival epithelial barrier made it susceptible to infection. There is a risk of HPV transmission to the fingertips, and there may have been contact between the conjunctiva and fingers while injecting eye drops after surgery.

This was the first reported case of conjunctival papilloma as a complication of electrosurgery for CCH treatment. In surgical treatment of CCH, the condition of the conjunctiva needs to be closely evaluated, and it is important to strictly use separate instruments for both eyes. In addition, it is necessary to explain the need for caution against postoperative infection and educate patients to use appropriate eye drops.

Conflicts of Interest: None.
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