Cheilitis associated to *Penicillium notatum* sensitization in a clarinetist

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Key words

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Palabras clave

Queilitis. *Penicillium notatum*. Dermatitis de contacto. Clarinete. Atopia.

Cheilitis is an inflammatory process of lips. It could be due to different causes, such as extreme temperatures, malignant conditions (actinic cheilitis), nutritional deficiencies, infections, atopic dermatitis, contact dermatitis, among others [1].There are some isolated case reports about cheilitis due to contact dermatitis caused by wood sensitization in wind instrument players [2-5]. Also, allergic contact dermatitis was the most frequently reported in violinists and violists [6].

Case report

A 15-year-old-boyconsulted in 2017for recurrent episodes of cheilitis. He had been treated with repeated cycles of a potent topical steroid (clobetasol) with clinical improvement. Nevertheless, cheilitis relapsed every time the treatment was stopped. As additional information, he also referred that several months ago he presented a self-limited episode of labial angioedema while he was eating a pork loin sandwich. When specifically asked about his hobbies, he told us that he played the clarinet since the age of eight. He used a wooden mouthpiece (*Arundodonax*) when playing the clarinet. He also referred a personal history of allergic rhinoconjunctivitis due to sensitization to the fungus *Penicillium*: he had suffered from rhinoconjunctivitis that was related to exposure to a tank fish that was placed in his dormitory. He became asymptomatic after the removal of thetank fish. He had also been diagnosed with allergic rhinoconjunctivitis due to grass pollen allergy that had notably improved after 4 years of

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sublingual immunotherapy with a 5-grass extract. Physical exam was negative except for upper and lower lip cheilitis (figure 1).

Skin prick testswith a locally adapted battery of aeroallergens were positive to *Penicillium*spp and grass pollen. Specific IgE results (ImmunoCAP, Thermofisher Scientific, Uppsala, Sweden) were: *Penicilliumnotatum* (7.13 kU/L and 13.4 kU/L, five years ago and presently, respectively), Phleum pratense (65.1 kU/L). Total IgE was 357kU/L.

We ask the patient to bring as the mouthpiece. We consulted the Department of Medical Microbiology, which decided to culture two of the mouthpieces on blood agar plates and Sabouraud dextrose agar (SDA) with chloramphenicol for the selective isolation of fungi. At 48 hours, it was observed the growth of a fungus species thatwas identifiedby matrix-assisted laser-desorption and ionization mass spectrometry (MALDI-TOF MS) as *Penicillium notatum* [10]. It is noteworthy to specify that the microbiologist did not know that the patient was sensitized to *P.notatum.*

We advised the patient to change the clarinet mouthpiece for a plastic one and washing it with a disinfectant solution after every use. After one year, the patient has been using the same clarinet, now with the plastic mouthpiece and remains without developing new episodes of cheilitis.

Discussion

We present the case report of an atopic clarinet player that developed recurrent episodes of cheilitis. Previously, he had had suffered from rhinoconjunctivitis due to *P.notatum*. We were able to demonstrate the growth of *P. notatum* in the wooden mouthpieces that he used when playing the clarinet. There are some case reports of cheilitisin wind instrument players due to contact dermatitis caused by the woods of the wind instrument[2-5]. Ruiz Hornillosel al [2]and McFadden [3] described both a case of

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cheilitis in a clarinetist who use a cane reed nozzle. Inoue et al[4]reported a case with similar symptoms in a saxophonist, also due to a cane reed mouthpiece. None of those patients were sensitized to moulds. Van der Wegen-Keijser et al[5] also reported cheilitis in a saxophonist but the mycological culture of the nozzle was negative for moulds. In our case, the fact that the patient had later being playing the sameclarinet using a plastic mouthpiece that he disinfected after every use without relapsing of cheilitis, discards the wood of the mouthpiece as the culprit factor.

Concerning the mechanism, it is clear that the fungus *P.notatum* was present in the mouthpiece. It seems that the organic nature of the mouthpiece altogether with the humidity provided by the saliva offers a good substrate for the growing of fungus. Nevertheless, we cannot assure whether an IgE-mediated mechanism (protein contact dermatitis as the patient was sensitized to *P.notatum*, demonstrated by SPT and sIgE) or a type IV contact mechanism is involved (like in other case reports with similar symptoms due to type IV sensitization to woods)[2-7]. Finally, the episode of lip angioedema when eating loin pork could be explained because processed cold meatis stuffed into casing with mould cultures to increase meat properties (flavor and aroma)[8-9].

To the best of our knowledge, there are no published cases of cheilitis due to *P.notatum*.

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Previous presentation

This case report was no presented as a poster or in any other publication.

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None to declare.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Figure 1. Upper and lower lip cheilitis

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