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Fiddler's neck: Chin rest-associated irritant contact dermatitis and allergic contact dermatitis in a violin player

Jennifer E Caero¹ BA, Philip R Cohen^{2,3,4} MD

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1. The University of Texas Medical School at Houston, Houston, Texas
2. Department of Dermatology, University of Texas Health Science Center, Houston, Texas
3. Department of Dermatology, University of Texas MD Anderson Cancer Center, Houston, Texas
4. Health Center, University of Houston, Houston, Texas

Abstract

Fiddler's neck refers to an irritant contact dermatitis on the submandibular neck of violin and viola players and an allergic contact dermatitis to nickel from the bracket attaching the violin to the chin rest on the violinist's supraclavicular neck. A 26-year-old woman developed submandibular and supraclavicular left neck lesions corresponding to the locations of the chin rest and bracket that was attached to her violin that held it against her neck when she played. Substitution of a composite chin rest, which did not contain nickel, and the short-term application of a low potency topical corticosteroid cream, resulted in complete resolution of the allergic contact dermatitis supraclavicular neck lesion. The irritant contact dermatitis submandibular neck lesion persisted. In conclusion, violin players are predisposed to developing irritant contact dermatitis or allergic contact dermatitis from the chin rest. We respectfully suggest that the submandibular neck lesions from contact with the chin rest be referred to as 'fiddler's neck - type 1,' whereas the supraclavicular neck lesions resulting from contact of the bracket holding the chin rest in place be called 'fiddler's neck - type 2.' A composite chin rest should be considered in patients with a preceding history of allergic contact dermatitis to nickel.

Introduction

Dermatoses in musicians occur not only in players of brass, percussion, and/or wind instruments and pianos, but also players of string instruments. We describe a young woman who plays the violin and developed an irritant contact dermatitis from contact of the chin rest with the left submandibular neck and an allergic contact dermatitis to nickel from contact of the chin rest bracket with the supraclavicular area of her left neck.

Case report

A 26-year-old woman presented for evaluation of skin lesions on her left submandibular and supraclavicular neck. She mentioned that her left submandibular lesion occasionally felt very thick and indurated; there were no additional symptoms.

She noted redness of the left supraclavicular neck lesions, with associated itching. Additional history revealed that she is currently a violin performance major in college and practices several hours daily. She also has a history of a nickel allergy, which presented as an eczematous reaction to nickel-containing earrings.



Figure 1

Figure 1. A 26-year-old violinist with fiddler's neck. This view shows both the submandibular left neck lesion (fiddler's neck - type 1: dashed arrow) and the supraclavicular left neck lesions (fiddler's neck - type 2: solid arrow).



Figure 2

Figure 2. A closer view of the 15 x 15 mm hyperpigmented, lichenified left neck submandibular plaque.

Cutaneous examination of the left submandibular neck demonstrated a 15 x 15 mm hyperpigmented plaque (Figures 1 and 2). The left supraclavicular neck showed pruritic, erythematous and eczematous adjacent plaques that were becoming confluent (Figures 1 and 3). Additional evaluation, provided by the patient, demonstrating placement of her violin while playing, showed the left submandibular lesion contacting the chin rest attached to the instrument and the left supraclavicular neck lesions contacting the metal bracket (Figures 4 and 5).



Figure 3

Figure 3. A closer view of pruritic, erythematous, and eczematous, scaly plaques caused by an allergic contact dermatitis to the nickel-containing metal brackets of the chin rest.



Figure 4

Figure 4. Approximating the violin to the patient's neck demonstrates correspondence of the submandibular neck dermatitis with the solid base of the chin rest and the supraclavicular neck dermatitis with the metal bracket holding the chin rest in place.



Figure 5

Figure 5. Violinist holding the instrument in playing position. Contact can be observed between the chin rest and her submandibular neck (fiddler's neck - type 1), as well as between the metal brackets that hold the chin to the violin and her supraclavicular neck (fiddler's neck - type 2).

The company that manufactured the chin rest confirmed that the metal pieces of the bracket were nickel. Correlation of the history and clinical presentation established the diagnoses of an irritant contact dermatitis on the left submandibular neck and an allergic contact dermatitis to nickel on the left supraclavicular neck

("fiddler's neck").

The supraclavicular neck lesions were initially treated with desonide 0.05% cream twice daily for 5 days and subsequently, once daily for 2 days. A bandage was placed on the affected area when she would practice. There was prompt resolution of the erythema and the plaques rapidly flattened. She also purchased a hypoallergenic Wittner composite 4/4 violin side mount chin rest, which did not contain metal parts in the brackets. There has been no recurrence of the supraclavicular neck lesions. The submandibular neck lesion persists.

Discussion

String players, including violinists, may develop dermatoses [1-13]. Onder et al surveyed 97 orchestra members and 20 singers, finding that the most common skin problems were in violin players; of 33 violin players, 6 reported fiddler's neck [14]. A recent study by Gamblicher et al surveyed musicians at multiple German universities of music and performing arts. Of the 412 respondents, 21.6% had an instrument-related skin disorder. Again, those with the highest risk of skin disorders were string players and plucking instrumentalists [15].

There are multiple case reports, which describe solitary lichenified skin lesions below the left jaw line in men and women who play the viola and violin [16-18]. Additional studies also describe the submandibular lesion to be accompanied by a second lesion, which is not only characterized by erythema, pruritis, and eczematous changes, but also located on the left supraclavicular neck, as in our patient [16, 19-21]. These latter lesions are often confirmed as an allergic contact dermatitis to the metal bracket that attaches the chin rest to the violin by a positive patch test reaction to nickel sulfate. In addition, allergic contact dermatitis observed in violinists extends to other materials including colophony, exotic woods, paraphenylenediamine, potassium dichloride, and propolis. Less commonly, fiddler's neck lesions caused by exposure to these materials has also been documented [5, 22, 23, 24].

String instruments are often referred to as fiddles (Table 1) [25]. Fiddler's neck refers to two clinical conditions (Table 2) [4, 20-21, 26]. The first condition (fiddler's neck - type 1) is an irritant contact dermatitis of the submandibular neck, resulting from contact with the chin rest. This is most often described as a localized area of lichenification, with or without pigmentation, just below the angle of the jaw on the left side of the neck [4, 16, 17, 21, 26].

The second condition, which has also been designated as fiddler's neck (fiddler's neck - type 2), is an allergic contact dermatitis, most often to nickel, from the metal of the brackets attaching the chin rest to the violin contacting the skin. It is usually located on the supraclavicular area of the left side of the neck. It has been characterized as pruritic, erythematous lesions, which may appear as infiltrated and scaling plaques with indistinct borders or vesicles or both [16, 19, 20, 21].

The diagnosis of fiddler's neck is predominately based on the clinical history and confirmed by observation of the musician holding the instrument, with correspondence of the lesion or lesions to contact sites of the skin with the chin rest of the violin or viola. Confirmation of an allergic contact dermatitis can be established either by contacting the manufacturer (as in our patient) or by using a commercially available test, the dimethylglyoxime (DMG) test. To perform this test, the clinician or patient rubs the aforementioned substance on a metallic surface; if the nickel content is greater than or equal to 1:10,000, a pink precipitate will form on the metal, applicator, or both [27, 28, 29, 30].

Peachey and Matthews described four factors believed to play a role in the pathogenesis of fiddler's neck - type 1: (1) pressure of the fiddle on the neck, (2) friction between the chin rest and the skin, (3) hygiene, and (4) the instrument itself [3]. These factors not only contribute to the development of the irritant contact dermatitis, but also can promote the occurrence of an allergic contact dermatitis to the chin rest's metal bracket, and fiddler's neck - type 2. For example, sweat can dissolve the nickel, contributing to its corrosion. In addition, pressure, friction, and moisture can also contribute to increasing sensitization of the skin to nickel, by increasing absorption [27]. Although it has been proposed that stress may predispose to the development of skin diseases in musicians, a study by Onder et al did not find any significant differences in depression, anxiety, or psychological symptoms when musicians were divided according to dermatological lesions [31].

There are limited options for the individual with a chin rest-associated submandibular neck lesion (fiddler's neck - type 1), because the dermatitis results from an irritant etiology and contact between the submandibular neck and the chin rest cannot be avoided when the musician plays the instrument. To lessen the severity of the contact, one may recommend that a cushion be placed between the chin rest and the neck. Concurrent edema in individuals with fiddler's neck - type 1 has been reported to resolve by holding the instrument in a more horizontal position, thus lessening the force applied to the chin and neck areas while the patient is playing [17].

Treatment of chin rest-associated allergic contact dermatitis (fiddler's neck - type 2), should begin by having the patient avoid contact between their neck and the metal bracket of the chin rest. For example, as in our patient, a bandage can be used as a temporizing measure to cover the affected area. However, a more practical solution – also demonstrated by our patient – would be to purchase a composite chin rest that does not contain a metal bracket [32]. The symptoms and existing supraclavicular neck lesion can be treated with a low potency topical corticosteroid preparation.

Conclusion

Dermatoses, including fiddler's neck, are especially prevalent in string instrument players. Multiple case reports of patients with fiddler's neck describe a lesion located in the submandibular area of their neck; it may occur alone or be accompanied by a second lesion, located on the supraclavicular neck, from contact with the metal bracket holding the chin rest in place. The submandibular lesion (fiddler's neck - type 1) most often results from irritant contact between the chin rest and the musician's neck. It presents as a lichenified plaque with or without pigmentation. The supraclavicular neck lesion or lesions (fiddler's neck - type 2), are caused by an allergic contact dermatitis from the nickel-containing bracket of the chin rest. This presents as pruritic, eczematous, scaly, erythematous plaques, with or without vesicles. Diagnosis of fiddler's neck may be confirmed by observing the musician with the chin rest and its metal bracket contacting their respective lesions. In addition, the diagnosis of fiddler's neck - type 2 can be supported by contacting the manufacturer of the chin rest and confirming the bracket contains nickel, or by performing the dimethylglyoxime test to the bracket, or both. Treatment and prognosis for the lesions of fiddler's neck also differ. The irritant contact dermatitis lesion of fiddler's neck - type 1 is likely to persist, since it is impossible for the musician to prevent this contact from occurring. However, it may be ameliorated by placing the instrument in a more vertical position or by placing a small cushion on the chin rest. The supraclavicular neck allergic contact dermatitis lesion of fiddler's neck - type 2 should be treated by avoidance of the offending agent. A barrier

between the metal bracket and the skin offers a temporary solution and replacing the nickel-containing bracket with one that is hypoallergenic would result in a permanent resolution of the condition. Because fiddler's neck appears to represent two pathogenically distinct conditions, we respectfully suggest the irritant contact dermatitis from the chin rest contacting the submandibular neck be referred to as fiddler's neck - type 1 and the allergic contact dermatitis to nickel from the chin rest's metal bracket contacting the supraclavicular neck be referred to as fiddler's neck - type 2.

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