**Case report**

# Sore throat or sore tooth? A case of chronic pharyngitis and recurrent mouth ulcers

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**Abstract**
Sore throat and mouth ulcers are two common conditions seen at the outpatient clinic of family physicians or otolaryngologists. In this case, a 37-year-old female patient had a sore throat and recurrent mouth ulcers that persisted for two months. Despite two courses of oral antibiotics and various investigations, her problem did not resolve. It was later discovered that the patient had a re-root canal treatment and a metal crown fitted prior to the onset of her symptoms. The patient had an uneventful recovery following the removal of the metal crown. Had the dental history been carefully explored, the patient would not have suffered a prolonged course of the condition. This case also demonstrates the importance of careful use of antibiotics in the medical practice, and metal materials in the dental practice.

**Keywords**: chronic pharyngitis; mouth ulcers; allergy; metal crown

## Introduction

Sore throat or pharyngitis is a very common condition seen by family physicians and otolaryngologists whereas infection remains one of the most common causes of the condition. Most of the time, the causative agent is viral rather than bacterial.[1] While it usually resolves on its own within one to two weeks, pharyngitis may persist for a longer-than-usual period in some cases such as in infectious mononucleosis, which is caused by the Epstein-Barr Virus (EBV) presenting with pharyngitis, cervical lymphadenopathy, fatigue and fever.[2] Other causes of sore throat include allergies, dryness, irritants (e.g. tobacco smoke or chemicals), muscle strain (e.g. in yelling, talking for long periods), gastrointestinal reflux disease, tumour, abscess and epiglottitis.[3]

On the other hand, mouth ulcers are another commonly seen condition in the outpatient clinic. In most cases, mouth ulcers do not have a serious underlying cause and they normally heal within a week or two. In some cases, however, oral ulcers may be multiple and recurrent which warrant further attention. Some serious conditions that are associated with recurrent oral ulcers include Bechet's syndrome, Sweet syndrome, infection with human immunodeficiency virus (HIV) and cyclic neutropenia.[4]

## Case presentation

A 37-year-old female patient was seen in the primary care outpatient clinic with the chief complaints of fever, sore throat and a painful right-sided neck lump for one week. Prior to the onset of the symptoms, the patient had a re-root canal treatment done on tooth 32 (lower last

molar) which was later covered by a metal crown. She was diagnosed with bacterial pharyngitis and was prescribed a course of combination antibiotics consisting of amoxicillin and clavulanic acid. Due to the persistent symptoms, she was referred to an otolaryngologist who prescribed her another course of oral antibiotics (cefuroxime 250 mg twice daily for 7 days).

After two courses of antibiotics, the painful neck lump had reduced in size, but the patient continued to experience pain, which was more severe on the right side of the throat. She also started experiencing a sharp pain at the angle of the right jaw, radiating to the right ear, as well as multiple mouth ulcers mostly found on the right side of the tongue. The patient became very anxious, returned to the otolaryngologist six weeks after the onset of the symptoms, and requested for a rhinolaryngoscopy to exclude malignancy, which revealed no abnormal findings. The patient also had an ultrasound done on the right side of her neck, with no findings of significance.

As a definitive diagnosis could not be made, the patient went back to her dentist to exclude the possibility of a failed re-root canal treatment. An orthopantomograph of the teeth was taken and revealed a small area of radiolucency at the tips of the roots of tooth 32 (Figure 1). However, the findings did not correlate with the severity of the pain and were not suggestive of an infection. She continued to tolerate the pain despite the use of eterocoxib 90 mg daily for a week.

With episodes of fitful sleep and a history of silver allergy, it was suspected that the chronic pharyngitis could be related to the metal crown. The metal crown was eventually removed after eight weeks of persistent sore throat and recurrent mouth ulcers. Within 48 hours, the patient's symptoms improved tremendously and she had an uneventful recovery.

**Discussion**

The case presented demonstrates how a simple case of chronic sore throat could be mistreated for bacterial pharyngitis. The patient was prescribed eterocoxib every day for a week and two courses of antibiotics. She also had a rhinolaryngoscopy, an ultrasound and an orthopantomograph done, which were all not very helpful in her condition. It was later discovered that the metal crown which was put on by the dentist after the re-root canal treatment contained nickel and chromium.

Commonly used metals in dental materials such as nickel, chromium, cobalt, gold, palladium and titanium have been shown to cause allergies.[5] In one study that assessed dental metal allergies using patch tests, 44% of the 925 patients had a positive response to any metals used in the patch test. The metals with the highest positivity rates were nickel, palladium and zinc (22.5%, 14.8% and 11.5% respectively) whereas 42.2% of the patients reported metal allergy-associated conditions. Among patients who underwent treatment involving removal of the metal, 55.6% reported symptom improvement after the treatment.[6]

Had the dentist taken a careful history, a metal crown could have been avoided and a non-metal one could have been used instead. In addition, the unilateral pain on the throat and the occurrence of unilateral ulcers on the tongue had given clues to the allergy. This case also demonstrates the importance of a thorough dental history in the medical practice. A correct diagnosis would have been derived much earlier had this been explored with greater details.

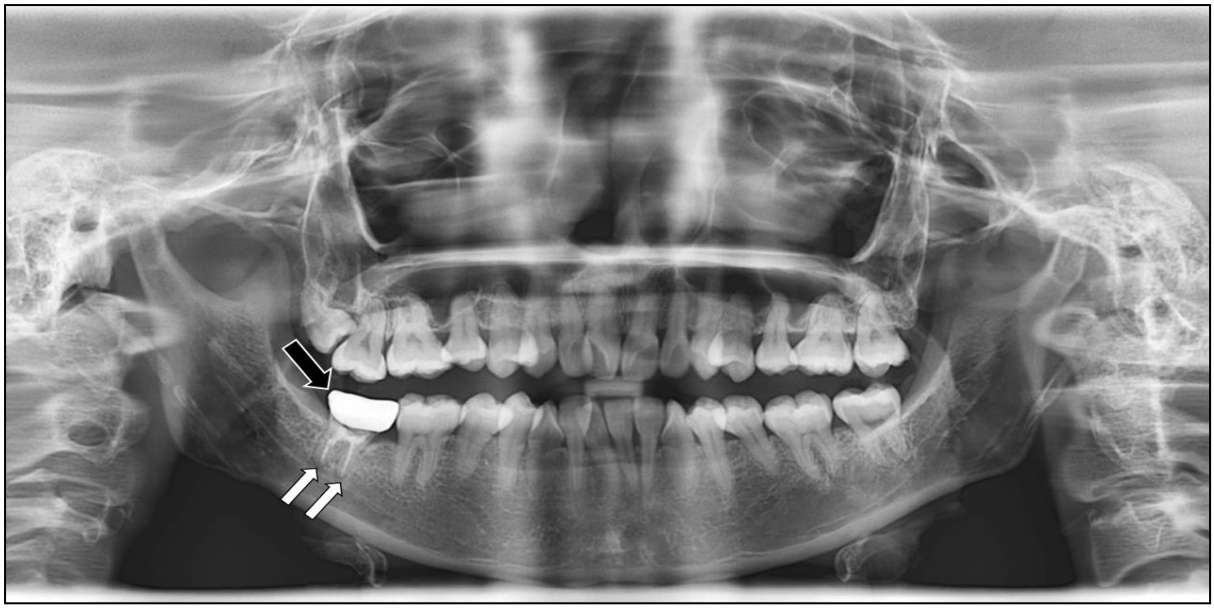

Figure 1 Dental orthopantomograph of the patient showing small areas of radiolucency at the tips of the root of tooth 32 (white arrows) and the metal crown (black arrow).

## Conclusion

This case interestingly shows how the cause of common conditions like sore throat and mouth ulcers could be overlooked in the primary care setting. It also demonstrates the importance of taking a careful history to identify the underlying cause. The moral of the story is that, when all else fails, it is always worthwhile re-visiting a patient's history to find the missing piece of the puzzle. Sometimes, minor details that seem irrelevant at the point of the first consultation turn out to be the main cause of the presenting condition.

Another important message that can be derived from this case is that medical practitioners should use antibiotics carefully. In this case, the patient might have suffered from bacterial pharyngitis. However, it may not be necessary to take two courses of oral antibiotics, as the main problem was an allergy to the metal crown. This is evident by the fact the condition resolved after the removal of the metal crown. It is also important for dentists to treat their patients with great care when using dental materials that contain metals in the mouth.

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