

Short communication

Streptococcus constellatus causing bony destruction secondary to odontogenic infection: three rare cases

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Accepted 8 May 2019

Available online 31 May 2019

Abstract

Streptococcus constellatus is part of the *Str milleri* subgroup. It is a commensal organism that is often present in the oral flora, and has been implicated in pyogenic infections of the central nervous system, abdomen, and deep neck spaces. We present three patients within our unit who developed bony destruction in the facial bones and base of the skull after odontogenic infections. *Str constellatus*, a known oral and gut commensal that may cause atypical presentations in odontogenic abscesses, was cultured in all cases.

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Keywords: *Streptococcus constellatus*; odontogenic infection; bony destruction

Introduction

Streptococcus constellatus is part of the *Str milleri* subgroup that also includes *Str angiosus* and *Str intermedius*.¹ They are considered commensals in the oral flora but are often implicated in pyogenic infections of the central nervous system and abdomen, in endocarditis, deep space neck and odontogenic infections, and in the formation of abscesses.²

Str constellatus has been involved in cases of Lemierre syndrome,^{3,4} cerebral abscesses of odontogenic origin,⁵ complicated orbital cellulitis associated with cavernous sinus thrombosis, and necrotising orbital cellulitis.^{6,7} It also caused bony involvement that resulted in chronic osteomyelitis in a patient with Cogan autoimmune syndrome,⁸ and vertebral osteomyelitis in a patient with an atrial septal defect and odontogenic infection.⁹

To our knowledge little has been published on *Str constellatus* that is associated with bony destruction of the face or base of the skull in immunocompetent patients. We

found only one case of a patient who developed extensive osteomyelitis of the skull with a subcutaneous abscess 10 months after an injury to the head.¹⁰

We report three cases of odontogenic infection as a result of *Str constellatus* with associated facial bony destruction.

Case 1

A 72-year-old man presented with pain and swelling of his right mandible. He was otherwise fit and well, but drank heavily and smoked 30 cigarettes a day. An orthopantomogram (OPG) showed a pathological fracture of the right mandible (Fig. 1). He had debridement, biopsy examination, and investigations that included HIV, tuberculosis (TB), and myeloma profiles, which were all negative. Osteomyelitis was diagnosed, a long-term course of amoxicillin was started, and he had resection of the angle of the mandible. He continued to have persistent symptoms that included pain and discharging fistulas in the retromandibular region. A computed tomogram (CT) showed further osteomyelitis of his mandible, zygomatic arch, and skull base. Cultures of pus grew *Str*

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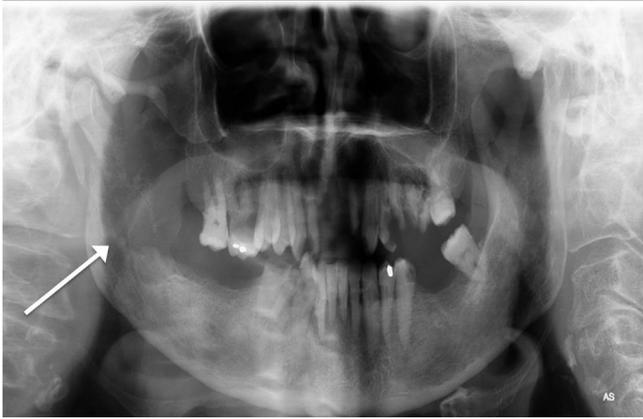


Fig. 1. Case 1: orthopantomogram showing pathological fracture (white arrow).

constellatus. He remains under regular review for chronic osteomyelitis.

Case 2

A 69-year-old woman with type II diabetes and dermatomyositis presented with a non-healing socket after extraction of the lower left first molar. CT of her mandible showed bony destruction of the alveolar ridge and body of the left mandible (Fig. 2). She had the area debrided and pus cultures grew *Str constellatus* on all occasions. She was treated with a long-

term course of clindamycin orally. Her most recent review showed some evidence of bony healing and she continues to be followed up regularly.

Case 3

A 39-year-old man presented after extraction of a lower left third molar with left-sided facial swelling. CT showed a 4.5 cm abscess that extended from the extraction site to the left masseteric and parotid spaces (Fig. 3). He was started on benzylpenicillin and metronidazole intravenously, and he had incision and drainage with exploration of the masseteric and parapharyngeal spaces, and removal of an upper left third molar. He developed further masseteric swelling with an ongoing discharge from the neck, and had repeat incision and drainage, and removal of necrotic bone. Bone and pus cultures grew *Str constellatus*. He was discharged with a course of flucloxacillin and clindamycin orally, and the infection resolved completely.

Discussion

Patients with odontogenic infections continue to require admission to hospital for antibiotics intravenously and surgical drainage. While most cases are caused by *Bacteroides* spp and anaerobic *Streptococci* groups, *Str constellatus*

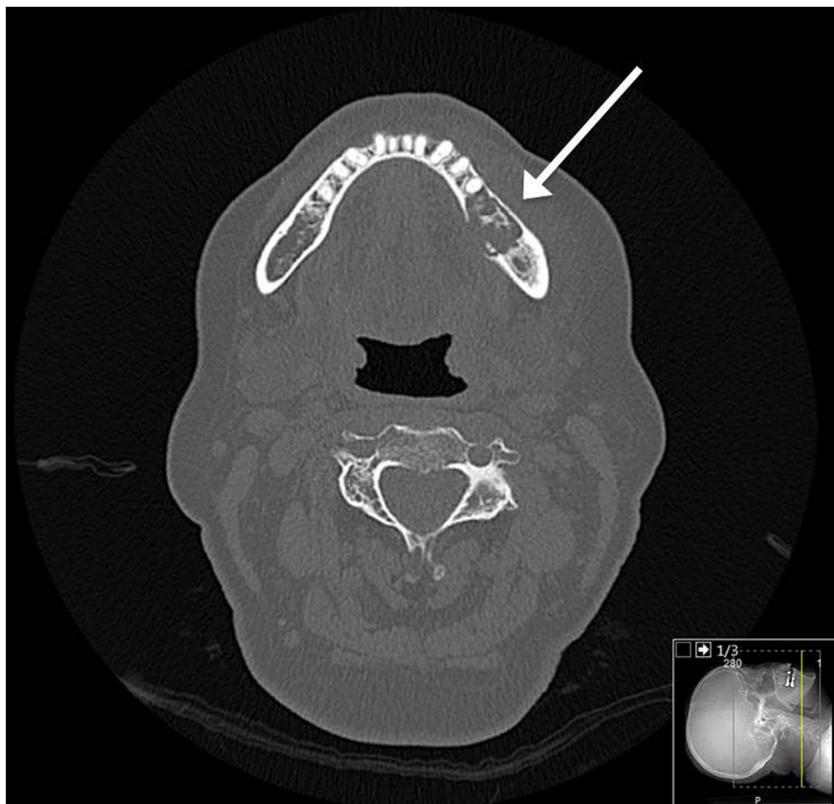


Fig. 2. Case 2: computed tomogram showing bony destruction of the left mandible (white arrow).



Fig. 3. Case 3: computed tomogram showing 4.5 cm abscess in the left masseteric space (white arrow).

is a known oral and gut commensal that can cause rare and unusual presentations such as the formation of deep abscesses. In our patients it caused considerable bony destruction after odontogenic infections. One patient drank alcohol excessively and smoked heavily, one had taken mycophenolate for dermatomyositis, but the other had no underlying cause of immunosuppression.

In atypical cases of odontogenic infection it is important to rule out immunosuppression, involvement of Mycobacteria, or underlying malignancy. However, uncommon pathogens may also be responsible, and it is essential to ensure that

swabs and samples are sent for microscopy, culture, and sensitivity, with regular involvement of the microbiology team.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patients' permission

Ethics approval not applicable. Patients' permission not necessary.

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