Case report

Spontaneous isolated fracture of the coronoid process of the mandible

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Introduction

The coronoid process is uncommonly fractured during the trauma. Spontaneous fracture is rare. When an isolated spontaneous fracture of the coronoid process occurs, it is important to try to determine the reason why. We present a case where detailed medical and drug history elicited an unusual cause.

CASE REPORT

A 69 year-old female patient presented with a history of hearing a loud crack from her left jaw whilst eating a crispbread the week before. Examination revealed limited and painful mouth opening and pain on occluding, but with no malocclusion.

Radiographic imaging revealed an undisplaced left coronoid fracture (fig 1). Also noted were signs of significant degenerative disease of the cervical spine (fig 2).

Upon further questioning, the patient also reported previous spontaneous fractures of the radius, hip and right zygoma. A complex medical history was noted, including severe asthma controlled with inhalers and oral prednisolone for the past 35 years.

Despite taking Strontium Ranelate, known to help prevent osteoporotic fragility fractures in postmenopausal
women\textsuperscript{1}, the patient has not been formally diagnosed with osteoporosis. Furthermore, passed dual energy x-ray absorptiometry scans had not been diagnostic.

The fracture was managed non-surgically (soft diet, analgesia), but remained painful for many months, suggesting a prolonged healing process. Follow up imaging confirmed this protracted period. It took over 5 months for symptoms to resolve.

**DISCUSSION**

Based on the clinical presentation, a provisional diagnosis of steroid and age induced osteoporosis resulting in fracture of the left coronoid process was made.

A search of the literature revealed several cases of mandibular fractures as a result of osteoporosis, however we could not find any reported cases of steroid induced osteoporosis resulting in spontaneous coronoid process fractures.

The presumed mechanism for this fracture is related to the temporalsis muscle. The fracture occurred during eating suggesting that an avulsive type force was applied to the osteoporotic bone.

This case highlights the importance of the medical history. Although corticosteroids are a valuable medication, they can have a range of short and long-term side effects. Patients on long-term corticosteroids are at risk of osteoporosis and consequent fractures\textsuperscript{3}.

In this case conservative management was successful. In cases with significant displacement of the fracture and limited mouth opening, a surgical approach has been reported \textsuperscript{4}.

**CONCLUSION**

Spontaneous coronoid process fractures are very rare. When a spontaneous coronoid process fracture occurs in isolation, a detailed medical history including drug history is of the utmost importance. Osteoporosis is a well-known long-term side effect of using corticosteroids. Clinicians need to be vigilant in testing for and treating osteoporosis, to prevent unwanted effects such as fractures.

**Learning points**

1 Spontaneous fractures of the coronoid are rare and can be easily overlooked in the absence of trauma.

2 Steroid induced osteoporosis can affect the mandible as well as other bones.

3 Management is usually conservative but can occasionally require surgery.
Fig 1. Fracture of left coronoid. Note also degenerative changes of cervical spine.

Fig 2. Marked degenerative changes of cervical spine on lateral view.
References


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