

## A Rare Case Of Odontoid Pathological Fracture

<sup>1</sup>Lee HS, <sup>1</sup>Foo CH, <sup>1</sup>Jaffar MSA, <sup>1</sup>Chan SK, <sup>1</sup>Gul IF, <sup>2</sup>Tan BB, <sup>2</sup>Teo YY, <sup>3</sup>Wong CC

<sup>1</sup>Department of Orthopaedics, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

<sup>2</sup>Department of Orthopaedics, University Malaysia Sarawak (UNIMAS), Kuching, Sarawak

<sup>3</sup>Department of Orthopaedics, Sarawak General Hospital Kuching, Sarawak, Malaysia

### Introduction

Solitary bone lesion is rare in upper cervical spine and there are only a handful of reported cases. Of these, odontoid cyst is the commonest. Literature shows that these cases are likely due to congenital or post-trauma induced. These may cause pathological fracture which requires fixation. There is no literature on odontoid lesion related report in Malaysia. We report a case of an incidental finding of odontoid cyst in a Type 2 odontoid fracture.

### Case

A 35 year-old gentleman with no known medical illness and cervical neck symptoms was involved in an alleged road-traffic accident. His car was travelling at a low velocity and had a head-on collision with a tree. He was wearing seatbelt and claimed to have flexion-extension neck injury mechanism. He then sustained persistent pain over his upper neck. Cervical x-ray showed no obvious fracture. CT cervical was done on the same day in view of his persistent pain. It reported an expansile lytic lesion with well-defined margin involving odontoid with cortical break at the odontoid base (Fig. 1). It is suggestive of pathological fracture with a differential of bone cyst and giant cell tumour(GCT).



Fig.1

### Methods

We proceeded with screw fixation of the odontoid using a short threaded 3.0mm headless compression screw under image intensifier

guidance(Fig.2). The patient was placed on a supine position with head supported by Mayfield head holder. Cervical incision was made via right anterior approach. He did not show any post-op neurological deficit and was placed on Philadelphia Collar for 3 months. However, patient still experienced persistent mild pain upon neck rotation. Serial cervical x-rays revealed fracture was not united at 5 months post operation and is still on follow-up.



Fig.2

### Discussion

Type 2 odontoid fracture is associated with non-union and GCT may further impair its healing process. As the patient had no previous constitutional symptoms, we postulate that the bone cyst was pre-existing and is likely to be benign. Literature shows that congenital cause is likely due to a developmental defect of the epiphyseal plate which may later lead to thinning of the cortex. Hence, the low-velocity trauma may have caused a pathological fracture. One report showed curettage and bone-grafting was done in a 4 year-old patient who experienced pain and the result was satisfactory. In our case, a biopsy, curettage and bone graft would have been beneficial for the patient.

### Conclusion

Odontoid bone cyst is rare and can potentially cause a pathological fracture in a low energy trauma. Biopsy is recommended to ascertain the cause and bone grafting for better bone healing.

### Reference

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