

# Bilateral Fracture of Styloid Process

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## ABSTRACT

Fracture of the styloid process of the temporal bone is a very rare phenomenon which is usually accompanied with the maxillofacial injury and most commonly seen concomitant with a mandibular fracture. The actual incidence of these fractures is high but due to improper diagnosis or failure to diagnose the number of reported cases in literature is very less. This article reports a rare case of fracture of the bilateral styloid process occurring in a 43 year old male. The rarity of this article is the fracture of the bilateral styloid process which has been rarely reported till date. Since it was an undisplaced fracture with no significant cosmetic and functional deformity patient was managed conservatively.

**KEYWORDS:** Bilateral Styloid Process, Eagle Syndrome, Fracture Styloids

## INTRODUCTION

The paucity in the number of styloid fracture cases are due to improper diagnosis or failure to diagnose and its appropriate management.<sup>1</sup> There are no such protocols to recognize this injury and its management. Most of the time styloid process fracture is associated with mandibular fractures.<sup>2</sup> This article reports a rare case of fracture of the bilateral styloid process occurring in a 43 year old male. The rarity of this article is the bilateral styloid process fracture which has reported only very few times in the literature. The diagnostic and management considerations of the styloid process fracture are discussed in this case report.

## CASE REPORT

A 43 year old male reported to the department of oral and maxillofacial surgery following a road traffic accident. On clinical examination, the patient was fully conscious, oriented and vitals were stable. His Glasgow coma scale was 15/15. There was no history of loss of consciousness, but he had bleeding from ear bilaterally. On local examination of the maxillofacial region, there was pain and tenderness bilaterally in the retromandibular area and mastoid region along with step deformity in the left body of the mandible. Mouth opening was restricted to 20 mm.

Orthopantomogram was taken which revealed a fractured condyle on right side with left body of the mandible (Figure 1). It also showed the fractures of bilateral styloid process. Pain and tenderness over the mastoid region bilaterally was due to fractured styloid process. Open reduction and internal fixation was done for mandibular fractures. Fracture of the bilateral styloid process was managed conservatively with a hard cervical collar and anti-inflammatory drugs for 2 weeks days. Follow up was done till 6 months and there were no complaints from the patient.



FIG 1- Orthopantomogram showing bilateral styloid process fracture

## DISCUSSION

The Styloid process is long, pointed, slender and projects antero-inferiorly from the inferior aspect of the mastoid process of the temporal bone. Its length is variable, ranging from some few millimeters to an average of approximately 2.5 cm.<sup>3</sup> An ossified stylohyoid ligament longer than 25-30 mm has been reported as elongation of styloid process on radiographs.<sup>4</sup> The fracture of the presents with the symptoms similar to that of Eagle's syndrome.<sup>5</sup> The so called Eagle's syndrome or stylalgia is caused by elongated styloid process or ossified stylohyoid or stylomandibular ligaments.

Fracture of styloid process is seen in completely ossified stylohyoid ligament; severe neck trauma and facial trauma. It is most commonly reported to occur following a mandibular fracture. There is a belief that styloid fracture most often occurs in association with mandibular fractures when the direction of forces are from one side, and the point of contact occurs between the cranial end of the fractured ramus and the styloid process.<sup>6</sup> In our case the bilateral styloid process fracture was due to an associated mandible fracture.

Diagnostic evaluation for the styloid process includes pain and tenderness in behind the ear, around the mastoid

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region which is confirmed in association with radiographic evidence of the styloid process. Clinical history of facial trauma, such as road traffic accident or sudden head movement, dysphagia, diffuse facial pain and limitation of mandibular movements should raise the suspicion of styloid process fracture.<sup>6,7</sup>

A diagnostic orthopantomogram is the most valuable method of evaluation of the styloid process. A more accurate radiographic examination can be done by computed tomography scan. Along with the clinical suspicion of the lesion, the CT diagnosis is also possible by visualization of irregular fracture ends. While segmentation is diagnosed by visualization of the usually smooth bony cortex at both ends<sup>6</sup>. These findings are often missed when the patient has associated maxillofacial injuries.

Management of a fractured styloid process may include various strategies which include conservative treatment, medical management or surgical approach.<sup>6,7</sup> The conservative therapy consist of complete bed rest, application of heat, a liquid diet, and a 2- 3-week prescription of anti-inflammatory agents, muscle relaxants and corticosteroids. Surgical intervention may be done by either the intraoral and extra-oral approaches.<sup>8,9</sup> But due to the complications of the surgical approach, conservative approach is better. In this clinical article, the patient was managed with conservative therapy and open reduction and internal fixation treatment of the mandible fracture. Accurate diagnosis along with the timely treatment can reduce the chances of the long term consequences.

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