

Eagle's syndrome: an unusual cause of a clicking jaw

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Calcification of the stylohyoid ligament is a well recognised radiographic finding in dental practice. Fortunately, affected individuals seldom develop symptoms. We report a case of a patient whose main complaint was a loud click following jaw movement. This unusual presentation has not been described before and should be considered in the differential diagnosis of 'clicking jaw'.

Mineralisation of the stylohyoid ligament is a well recognised radiographic finding and an incidence of 18.2% has been reported on panoramic radiographs.¹ The majority of patients are asymptomatic. However, in 1937, Eagle was the first to present two cases of pharyngeal discomfort associated with elongated styloid process.² Eagle's syndrome now describes a syndrome in which there is elongation of the stylohyoid process with associated symptoms which may include pain in the throat, dysphagia, dysphasia, otalgia, sensation of a foreign body in the throat and facial pain which may be vague and ill defined or an acute neuralgic type of pain radiating to the ear or along the mandible.^{3,4} We present a case in which the main complaint was that of clicking upon jaw movement, an hitherto unreported presentation.

Case report

A 53-year-old female initially presented to her general medical practitioner with a 1-year history of clicking whenever she moved her mandible, especially upon yawning and swallowing. The click would on occasion be associated with brief, intermittent retromandibular pain which

radiated to the ear. Her medical practitioner suspected internal derangement of the temporomandibular joint (TMJ) and advised her to consult her dental practitioner. A panoramic radiograph was taken (fig. 1), and a diagnosis of calcified stylohyoid ligament was made. Upon referral to our unit, she was found to have a loud click upon swallowing and talking. The click could be heard at mid-opening, also with tongue protrusion and was intermittent in nature. The patient felt that the click originated from behind the angle of

her jaw, although it could not be palpated. There was mild ill-defined tenderness in the right retromandibular region. Examination of the TMJ was normal, with full range of jaw movement, no muscle tenderness, and no palpable click from the joint. Deep palpation of the right tonsillar fossa elicited tenderness. Examination of the pharynx was otherwise normal. The panoramic radiograph showed a thickened articulated stylohyoid process. Eagle's syndrome was diagnosed and the patient underwent excision through an extra-oral approach. Through a skin crease incision, the carotid artery, internal jugular vein and IX, X, XI and XII cranial nerves were dissected out and the stylohyoid ligament was located. The surgical findings confirmed the presence of an enlarged and articulated stylohyoid process with a capsule surrounding the pseudoarthrosis (fig. 2). The central section was resected (fig. 3). Post-operatively the patient made an uneventful recovery and was free of her symptoms. The post-operative panoramic radiograph shows the residual proximal and distal parts of the stylohyoid ligament (fig. 4).

In brief

- Calcification of the stylohyoid ligament is a common radiographic finding
- It is usually asymptomatic
- If various symptoms such as pain in the throat, dysphagia, otalgia or facial pain are present for which there is no other obvious cause, then a diagnosis of Eagle's Syndrome can be made
- Clicking is an unusual presentation.

Discussion

The styloid process and ligament are embryological remnants of the second branchial arch and persists as a structure running from the base of the skull to the lesser horn of the hyoid, passing between the internal and external carotid arteries. Eagle originally described two distinct syndromes: the classic styloid and carotid



Fig. 1 Panoramic radiograph showing calcified stylohyoid ligament

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REFEREED PAPER

Received 24.08.98; accepted 10.11.98

© British Dental Journal 1998; 186: 489–490

artery syndromes. The classic styloid syndrome was believed to be caused by fibrous tissue formation distorting the cranial nerve endings in the tonsillar fossa following tonsillectomy. The carotid artery syndrome was believed to be due to pressure on the sympathetic chain which accompanies the carotid arteries, and is not dependent upon tonsillectomy.

Although a calcified stylohyoid ligament is not an unusual radiographic finding, the pseudoarticulated form is particularly unusual. It is possible that it is a consequence of fracture of an elongated styloid process with non-union, and pseudoarthrosis formation. In our case, it was the presence of the articulation that was responsible for the click which resolved following resection.

Conclusion

Clicking jaw is a common complaint of patients in a dental practice. It is usually the result of internal derangement of the TMJ. This case report shows that a clicking stylohyoid ligament should be considered as a rare alternative diagnosis for this complaint. In this case, the click resembled the joint noise of internal derangement that occurs upon mouth opening. It differed in that it was felt to originate in the retromandibular region and could also be heard on tongue protrusion which would not occur with internal derangement of the TMJ. The diagnosis can easily be made with clinical examination and radiographic imaging.

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- 2 Eagle W W. Elongated styloid process: report of two cases. *Arch Otolaryngol* 1937; 25: 584-587.
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Fig. 2 Enlarged and articulated stylohyoid process with capsule surrounding the pseudoarthrosis (arrow). The hypoglossal nerve can be seen just below. The lower lobe of the ear can be seen at the top of the picture

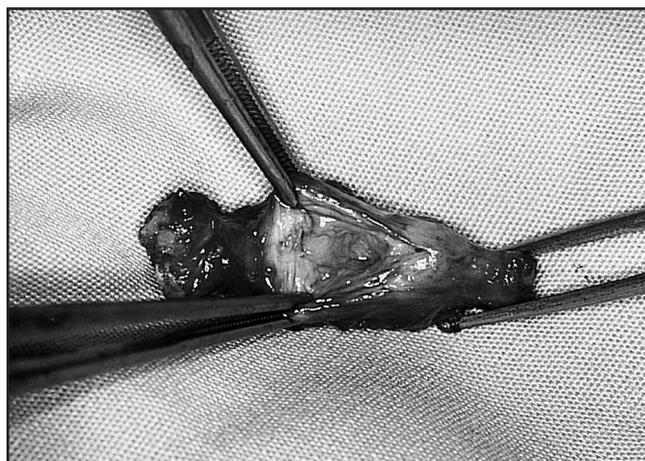


Fig. 3 The resected central section of the stylohyoid ligament showing the pseudoarthrosis which has been opened



Fig. 4 The post-operative panoramic radiograph showing the resection margins of the right stylohyoid ligament