

## Letter to the Editor

### Eagle syndrome compared with stylohyoid syndrome: complete ossification of the stylohyoid ligament and joint

Sir,

A 65-year-old man presented with a history of type 2 diabetes, chronic obstructive pulmonary disease, and non-alcoholic fatty liver. He had had no injuries to, or operations on his neck, but had had right submandibular and retroauricular pain for years. Computed tomography with 3-dimensional reconstruction (Figs. 1 and 2) showed elongation of both styloid processes associated with pseudoarticulation of the hyoid bone on the right side. This confirmed the complete ossification of the stylohyoid ligament, but the patient did not want an operation to resolve it.

Eagle syndrome was first described in 1937.<sup>1</sup> The estimated incidence of an elongated styloid process or calcified stylohyoid ligament ranges between 2% and 28%, though only a small percentage of these (4%–10%) develop symptoms.<sup>2</sup> To our knowledge, this is the first report of complete ossification of the stylohyoid ligament and joint.

In 1989, Camarda et al,<sup>3</sup> drew attention to the difference between Eagle syndrome and stylohyoid syndrome. Eagle syndrome describes patients in whom elongated, ossified styloid processes develop after injury, and stylohyoid syndrome when elongated styloid processes, or stylohyoid chain ossification, or both, develop early in life as an anatomical anomaly, with no previous injury or operation.

Stylohyoid syndrome has symptoms similar to those of Eagle syndrome, which include dysphagia, headache, hemifacial pain, neck and pharyngeal pain, as well as pain when swallowing, speaking, and opening the mouth, the sensation of a foreign body in the oropharynx, and pain radiating to the ear, which may intensify in response to rotational movements of the head. The proximity of the stylohyoid ligament to the internal carotid artery may cause a vascular form of Eagle syndrome (carotid type) with carotid artery compression when the head is turned, periorbital pain, and symptoms of transient ischaemic attack, or stroke (dizziness, headache, or syncope).<sup>4</sup> An ossified stylohyoid ligament could also be a cause of unanticipated difficulty in tracheal intubation, as an immobile larynx (as a direct result of stylohyoid ligament



Fig. 1. Three-dimensional computed tomography clearly shows a stylohyoid ligament ossified from the base of the skull all the way into the anterolateral hyoid bone with a stylohyoid joint.

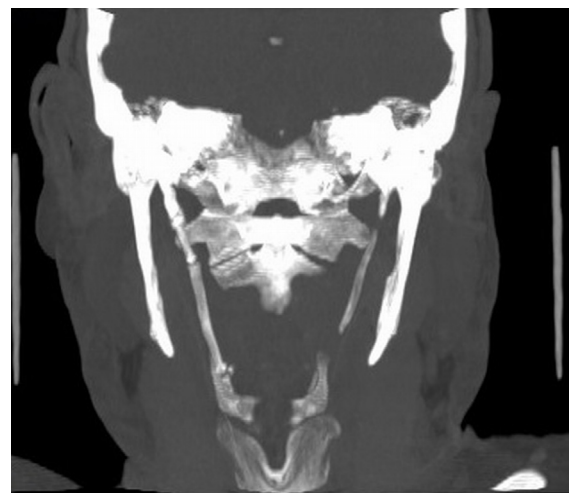


Fig. 2. The axial computed tomogram shows complete ossification of the stylohyoid ligament on the right side, with partial ossification on the left side.

ossification and a raised epiglottis because of forward traction of the hyoid bone) would make direct laryngoscopy difficult.<sup>5</sup>

The differential diagnosis should include all disorders characterised by cervicofacial pain, such as trigeminal, sphenopalatine, or glossopharyngeal neuralgia, temporomandibular joint disorders, otitis media and externa, dental pain, mastoiditis, submandibular sialolithiasis or sialoadenitis, tumours of the pharynx or base of the tongue, temporal tendinitis, Ernest syndrome (stylomandibular ligament syndrome), headache, histamine headache, pain associated to impacted third molars, cervical osteoarthritis, and carotid artery syndrome. Conservative management of the syndrome includes local infiltration with analgesics, anaesthetics and corticosteroids, antidepressants, and antiseizure drugs.<sup>4</sup> Operation would involve the excision of the styloid process, either through an intraoral transsillar approach, or an external transcervical approach.<sup>2</sup>

#### Conflict of interest

We have no conflicts of interest.

#### Ethics statement/confirmation of patient's permission

No ethical approval was required. There is no information to identify the patient in the manuscript or figures.

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