Eagle Syndrome Unmasked by Acute Parotitis

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Abstract Eagle Syndrome is elongation of the styloid process or calcification of the stylohyoid ligament that causes chronic neck and throat pain often precipitated by turning the head and frequently requires surgical treatment. However, Eagle Syndrome can also present acutely due to infections of the head and neck. In these cases, treatment of the infection with antibiotics and steroids can resolve symptoms. We highlight a case in which the patient developed acute parotitis and the cervicofacial soft tissue edema from infection caused the patient to have symptomatic Eagle Syndrome with throat pain and dysphagia due to a previously asymptomatic ossified stylohyoid ligament. Including Eagle Syndrome as part of the differential resulted in a non-surgical treatment plan with full remission of the patient’s symptoms.

Keywords: Eagle Syndrome, parotitis, acute infection, ossified stylohyoid ligament

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1. Introduction

Eagle Syndrome describes two stylohyoid ligament and styloid process related conditions. In the classical stylohyoid syndrome, ossification of the stylohyoid ligament causes pain in the neck and throat, dysphagia, and foreign body sensation [1,2]. Stylocarotid syndrome involves an elongation of the styloid process resulting in compression of the carotid artery, peripheral pain and syncope [2]. Both conditions can result in Horner’s syndrome, syncope with head turning, compression of the carotid with potential ischemia, and cranial nerve palsy [1,2].

The prevalence of Eagle Syndrome is not clearly known. Two prevalence studies claim 30% [3] or 44% [4] of patients have an elongated styloid process greater than 2.5 cm and/or ossification of the stylohyoid ligament making the anatomic variation fairly common. Although reports suggest that an elongated stylohyoid process or ossified stylohyoid ligament is an incidental finding, it leads to symptoms in 4% of people causing the Eagle Syndrome [2]. In our patient, Eagle Syndrome manifested only after the presence of a cervicofacial infection, an unusual presentation of an already rare syndrome.

2. Case

A 63-year-old Caucasian male presented with a one-week history of sore throat without fever, left sided cervicofacial pain with swelling, a popping sound with turning his head and chewing, and dysphagia which resulted in a choking sensation on swallowing his medications. Past medical history included diabetes, chronic kidney disease and ischemic cardiomyopathy. Examination showed Vital Signs: BP 130/90 P 75 T 97.5 F RR 18. He had tenderness in the left anterior cervical region with an enlarged and tender left parotid gland. He had an elevated WBC of 12.4 K/cm² (4.5-10 K/cm² normal) with 76% segmented neutrophils (44.4-80% normal), 14% lymphocytes (22.2-48% normal), 1% eosinophils (0-5% normal), and 9% monocytes (0-12% normal). The patient was diagnosed with acute parotitis and took 7 days of oral Clindamycin. At one week follow up, the patient continued to have neck pain and dysphagia despite a reduction in size of the parotid gland. A CT scan revealed prominent ossification of the left stylohyoid ligament, consistent with Eagle Syndrome (Figure 1 and Figure 2).

Figure 1. CT Neck axial image showing thickening just superior to insertion of the left stylohyoid ligament on hyoid bone.
head turning that our patient had. Also, we feel the swelling induced by the acute infection caused the symptoms because they abated after treatment with antibiotics and steroids. We do not believe the acute infection caused the calcification of the stylohyoid ligament. We feel the patient had the abnormality already and it only made itself known when the acute infection occurred. The authors in the other case associated with acute parotitis felt their patient had a congenitally elongated stylohyoid process and it took having both the acute parotitis plus the anatomic abnormality for the symptoms to occur [5].

Most often Eagle Syndrome presents with chronic, persistent, and unexplained pain. In one case, a 56-year-old female presented with right sided throat pain and foreign body sensation for two years [2]. Antibiotics and anti-inflammatory medications did not relieve her symptoms. A CT confirmed the diagnosis of Eagle Syndrome presenting as an elongated styloid process that was surgically removed [2]. In a series of eleven patients with Eagle Syndrome, patients had 1 to 11 years of cervical pain, dysphagia, and foreign body sensation [6]. Seven of the patients had a history of tonsillectomy and the authors suggest that scar tissue formation around the styloid process may have led to the excessive ossification of the styloid. None of these cases were associated with acute infection or inflammation as in our patient and they all required surgery to ameliorate symptoms.

### 4. Conclusion

Although Eagle Syndrome most often presents as chronic pain in the cervicofacial region, it should be considered in patients with persistent or atypical acute neck pain and dysphagia, especially in the presence of cervicofacial infection. A heightened awareness of the possibility of Eagle Syndrome and prompt treatment can prevent morbidity from this frequently missed cause of pain.

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