



Pathology Biology Section - 2012

G69 Sudden Unexpected Death Caused Probably to Eagle's Syndrome: A Case Report

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After attending this presentation, attendees will understand the profound implication of vagal reflex in relation to blow inside the neck by ossification of stylohyoid ligament.

This presentation will impact the forensic science community by highlighting the possible existence of higher number of deaths attributed to reflex cardiac arrest.

Case Report: An autopsy was performed to a man who was found dead in his car. The initial investigations determined that this young man without health problem went to his job at 5:00 a.m. He was making backing up his car in a parking lot and suddenly died. The policemen remarked that the back wheels crossed the abutments of parking protection. External examination of the body showed that this man was 175cm in height and weighed 73kg. There was no wound at the inspection. Internal inspection revealed bilateral bony hard vertical structures. The length of each ossified stylohyoid ligaments were 5 cm on left and 3cm on right. The carotid vessels were normal without any injury, especially at the fork area. The macroscopic examination of the organs was normal and unremarkable. There were absence of congestion, cyanosis, and petechiae. Toxicological examinations did not reveal any recent or old consumption of toxic substances. Microscopic organ investigations were normal. The elongated stylohyoid ligaments were ossified with the presence of cartilage, bone, and bone marrow. Based on the necropsy findings, the cause of the death was suggested to be a cardiac arrest caused by the vasovagal reflex. This research reviews the embryology of styloid chains and the anatomy of the styloid process - the stylohyoid ligament and the lesser cornu of the hyoid bone form the stylohyoid apparatus. The ossified stylohyoid ligament is known as Eagle's syndrome which is an uncommon sequel of elongation of the stylohyoid process. It is an aggregate of symptoms that includes foreign body sensation, recurrent throat pain, dysphagia, facial pain, and vertiginous. The diagnosis is made by radiography. One part of subtypes is the stylo-carotid artery syndrome. The frequency of elongated stylohyoid process is estimated approximately 4% of the population. The term of calcified is erroneous, ossification is considered more precise because hyperplasia of the styloid process is exhibited by histology. Not as obvious, the ligament could be ossified and form a solid structure. The ossified stylohyoid ligament may press upon the adjacent structures in the neck such as the carotid sinus complex. The reaction could be a vagus nerve mediated reflex cardiac inhibition. The mechanism of cardiac arrest resulting of pressure on the carotid neural complex will be discussed. The referenced causes of reflex cardiac arrest such as manual strangulation, hanging, and blows to the throat or neck will also be reviewed.

Forensic, Eagle, Reflex Cardiac Arrest