
***A PREVALENCE STUDY OF PONTICULUS POSTICUS USING
LATERAL CEPHALOGRAM – A DIAGNOSTIC TOOL***

By

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ABSTRACT

Background & Objectives: The ponticulus posticus is an anomalous bony arch which forms on the posterior portion of the superior articular process and the posteriolateral portion of the superior margin of the posterior arch of the atlas vertebrae. Many terms have been used in literature to describe this anomaly including Kimmetes anomaly, foramen sagittale, foramen arcuate or arcuate foramen. As it is attached to the atlanto-occipital membrane which is attached to the duramater this can cause small tensions exerted on the dura resulting in severe head pain as experienced in migraine. Several studies have suggested that the presence of this bony arch can cause symptoms of vertebra basilar insufficiency such as headache, vertigo and diplopia. The structure is seen clearly on plain films of the craniovertebral junction in the lateral projection, including the lateral cephalogram. Although lateral cephalogram is the most common diagnostic radiograph used in clinical dentistry, the cervical spine area present in lateral cephalograms is, however, generally omitted in cephalometric tracings. Hence the objective of this study is to focus on the importance of using the lateral cephalograms which are taken for the evaluation of dental conditions, as a baseline screening tool for detecting anomalies and pathologies of the cervical spine region

Methodology: The study was carried out at the Department of Oral Medicine and Radiology, Sri Sai College of Dental Surgery, Vikarabad, Andhra Pradesh, India.

The presence of ponticulus posticus was investigated on 500 patients of different age groups visiting Sri Sai college of Dental Surgery, Vikarabad, using lateral cephalograms.

Key words: ponticulus posticus, lateral cephalogram, vertebrobasilar insufficiency, headache, diplopia, computed tomography.

Results :

Analysis of 500 lateral cephalograms revealed the presence of ponticulus posticus in 30 patients constituting an overall prevalence of 6 % of the studied sample.

A Chi-Square test with a P-value 0.127 revealed male predominance was found with a prevalence of 70 % (21 of 30 positive cases) and female prevalence of 30 % (9 of 30 positive cases). Among the five age groups ranging from 10 – 60 years a Chi-Square test with a P-value 0.127 revealed that the presence of ponticulus posticus was predominant in the 10 – 20 years age group 36.67 % (11 of 30 cases) followed by 20 % (6 of 30 cases) in 20 – 30 age group, 16.67 % (5 of 30 cases) in 30 – 40 age group, 16.67 % (5 of 30 cases) in 50 – 60 age group and 10 % (3 of 30 cases) in 40 – 50 age group. The prevalence of ponticulus posticus in terms of morphological features revealed the predominance of the complete arch formation 57 % (17 of 30 positive cases) , 33 % of partial arch formation (10 of 30 positive cases) and 1 % of linear arch formation (3 of 30 positive cases). The prevalence in terms of symptoms revealed the predominance of non – symptomatic patients 63.33 % (19 of 30 positive cases) and the presence of symptoms in 36.67 % (11 of 30 cases).

Conclusion: In the present study it was concluded that the cephalogram must thus be looked upon as a baseline screening tool for detecting anomalies and pathology in the cervical spine region. Early diagnosis of these pathologies on cephalograms not only gives patients a chance to live life normally by changing their lifestyles, but it can also provide useful documentation of change due to an injury, aging, or progression of a degenerative process.

Key words: ponticulus posticus, lateral cephalogram, vertebrobasilar insufficiency, migraine, diplopia, computed tomography.