

Atlas Vertebra with Centrum a Case Report Seen in Dry Bone

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ABSTRACT

The Atlas/1st cervical vertebra doesn't have a body in the normal circumstances and its body represented by odontoid process of the Axis/2nd cervical vertebra, ^{1,2,3,4,5} here we present a case report of an atlas vertebra with the odontoid process used to it forming the centrum/body & also the transverse ligament has been ossified, this variation can be congenital/acquired and knowledge of this variation important during cervical spine surgeries, interpretation of skiagrams by radiologists. ^{1,2,3}

Key Words: Atlas, Axis, Odontoid process, Osodontoideum

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having a bony mass which seen attached to the posterior end of the anterior arch (in place where usually the odontoid process of the axis vertebra articulates forming the atlanto-axial joint, ossified transverse ligament & in the transverse process bilaterally there are accessory foramen, rest features are normal, the vertebra was examined carefully and photographs were taken.

INTRODUCTION

The development stages of the axis vertebra includes the pro-atlas which gives rise to apex of odontoid process in the adult, the C1 sclerotome which gives rise to rest of the odontoid process & the C2 sclerotome which forms the body of the axis vertebra. ^{2,3,4} Disturbances in fusion /non- fusion of C1 sclerotome with the C2 sclerotome, or non-fusion of pro-atlas with the main portion of the odontoid process has been advocated. The causes of osodontoideum can be both congenital as well as acquired and also traumatic mechanisms. ^{1,3,5,7} This entity is clinically important because a mobile or insufficient dens can leads the transverse at lantal ligament in-effective at restraining atlanto-axial joint motion. ^{3,4,5} Sliding of the atlas on the axis may compress the spinal cord or injure the vertebral arteries. Osodontoideum is a kind of rare lesion, and its pathogenesis has been stated that can be congenital and represents the centrum/ body of the atlas vertebra. However can be result of trauma leading to a mal-union of fractured odontoid process Patients with this condition may be asymptomatic or they may have neck pain, torticollis, or neurological symptoms that may develop either acutely or chronically from repeated spinal cord injury or involvement of the vertebral artery compression. ^{5,6,7,8}

CASE REPORT

During routine osteology classes for the undergraduate students one atlas vertebra was found

Fig. 1: Atlas Vertebra Showing the Fused Odontoid Process



SAF: Superior articular facet

DISCUSSION

The vertebral column develops from the para-axial mesoderm, which gets organized into block-like somites. ^{1,2,3} Each somite differentiates into a myotome & a dermatome, a bone forming sclerotome that condenses around the neural tube. ^{1,2} The sclerotome portion of each somite undergoes a process called re-segmentation so that each vertebra usually in normal circumstances formed by the union of the caudal half of one somite and cranial half of the immediate next somite. During 3rd to 8th week of

embryonic development, failure of normal segmentation of the cervical somites may result in fusion of the cervical vertebrae.^{1,2} C1/ atlas identified by the absence of body and looks like a ring of bone. The C2/ axis (as it allows the rotation of the head along a vertical axis) which can be identified by the presence of single elongated process superior to the body called as the dens (odontoid process).^{6,7,8} Os odontoideum is defined as an ossicle with smooth, circumferential cortical margin representing odontoid process.⁸

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