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Mini Review

Vertebral Artery Dissection, a Review on Some Important Clinical Notes

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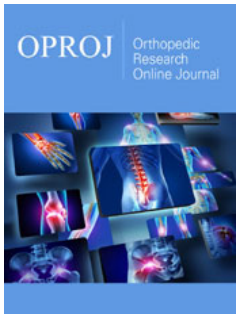

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Abstract

Vertebral artery dissection is a tear in any of the layers of the vertebral artery tissue including intima, media and adventitia. It affects younger people more than older ones. This is a review on some important clinical notes about the vertebral artery dissection which having knowledge about them would be of help for the clinicians to approach the affected patients with more precision.

Keywords: Vertebral artery; Dissection; Clinical notes

Body

Vertebral artery is an important anatomical structure. Two vertebral arteries, each at one side of the neck, would provide blood supply to certain structures of the CNS. This blood supply is of importance to provide adequate blood to the brain specifically in the posterior circulation.

Vertebral artery contains three tissue layers including intima, media and adventitia which the occurrence of tear in any of these layers would result in the dissection of the vertebral artery. Vertebral artery dissection occurs in young people more than old population. Suffering from some pathologies in the patients would increase the risk of vertebral artery dissection occurrence like Marfan syndrome, Fibromuscular dysplasia, Osteogenesis imperfecta, Ehlers-Danlos syndrome, Polycystic kidney disease, Cystic medial necrosis, Vasculitis and Hypertension. Smoking is also a risk factor for the occurrence of vertebral artery dissection [1,2].

In young and middle-aged adults the important cause of stroke is vertebral artery dissection. Vertebral artery dissection can be occurred spontaneously or by trauma or during instrumentation using in surgery which this rate is the highest - four percent per screw - in transarticular screw fixation in posterior atlantoaxial instrumented fusion. Sixty five percent of all vertebral artery dissections would occur in the V3 segment and this segment would be the most common site for vertebral artery dissection.

Intracranial extension of the extradural vertebral artery dissections would lead to intradural dissections. About fifteen percent of the vertebral artery dissections would involve the intradural part. Most of the intradural vertebral artery dissections occur in males. V1 segment of the vertebral artery is the second common part which dissections would happen in that.

Spontaneous vertebral artery dissection, rapid head turning, chiropractic manipulation, trauma and yoga are other risk factors for the occurrence of the vertebral artery dissection. Neck pain, stroke and occipital headache are among the clinical presentations of the vertebral artery dissection. The likelihood of the persistent neurological symptoms is higher in traumatic dissections in comparison with spontaneous ones.

Overall prognosis for vertebral artery dissection is good. With using magnetic resonance angiography and computed tomographic angiography, detecting the incidental vertebral

artery dissection is increasing. Using these high resolution and non-invasive techniques allows early detection of the asymptomatic vertebral artery dissections specifically in the blunt force neck trauma settings.

Although early diagnosis of vertebral artery dissection can be done by using screening methods but there would not be any benefit or improvement in patient's survivals or outcomes specifically when these screening methods would be done with aggressive manners and with very much focuses on the patients treatment protocols.

The risk for the occurrence of stroke is in the highest level, immediately after the dissection flap development. Such risk will be decreased gradually over the hours to days. It is believed that the dehiscence of the platelet aggregation from the subintimal layer or the false lumen turbulent flow, would cause late strokes occurrence in the vertebral artery dissection settings [3-5].

Conclusion

It is important for the clinicians to have knowledge about the vertebral artery dissection, its clinical features and relevant pathologies and factors which can increase its occurrence risk. Having such knowledge would be of help to approach the affected patients more effectively at the bedside.

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