

Title: Characteristics of headache in vertebral artery dissections

Names of presenter and co-author:

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Relevance to conference theme: Managing Complex Pain

Vertebral artery dissection (VAD) can masquerade as musculoskeletal head and/or neck pain and requires an immediate medical referral. Headaches have been found to be one of the main symptoms of a VAD preceding ischaemic signs. Differentiating the characteristics of VAD headaches from other causes is key for effective management.

Brief biography of presenting author (150 words):

Zoe Gough graduated in July 2019 from Keele University with a first class degree in physiotherapy. She is currently employed as a rotational physiotherapist at the University Hospital of North Midlands and is currently situated in the cardiothoracic department. She enjoys all aspects of physiotherapy but took an interest into vertebral artery dissections following the diagnosis of a family member and consequently decided to research the condition further with her third year research project at university. She enjoys skydiving in her spare time and is planning to complete her formation skydiving discipline within the next few months. She has also recently been self-teaching sign language following treatment of a patient with a hearing impairment and is hoping to complete an accredited course later on this year to gain a British Sign Language qualification.

Ethical review: Ethical approval not required.

Title: Characteristics of headache in vertebral artery dissections

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Purpose: A vertebral artery dissection (VAD) is a rare disorder that can masquerade as musculoskeletal head and/or neck pain and requires urgent medical referral. If diagnosis is missed or mismanaged it can progress to stroke and death. Headaches are one of the main symptoms of a VAD that precedes ischaemic signs. The aim of this systematic review is to identify the common features of VAD headaches to ascertain if key characteristics can aid differentiation from other less sinister causes of headache with musculoskeletal origin.

Methods:

Six databases (Cinahl plus, Web of Science, AMED, Medline, Cochrane and Sports Discus) were searched in January 2018. The search strategy was formulated in conjunction with a health librarian and included two search themes: vertebral artery dissection and clinical presentation. VADs resulting from trauma, post-partum, or in the carotid or intracranial arteries and children were excluded. Only cases reporting headaches were included. An independent researcher was used to verify the screening process with consensus meetings held to resolve disagreements. Articles were screened for risk of bias using the Joanna Briggs tool for case reports and case series.

Results:

The searches yielded 1561 articles. Following screening, 24 remained, identifying 525 cases (55% (286) male; 45% (239) female), mean age: 41 yrs. Characteristics of headache were defined as: duration of headache prior to onset of ischaemic symptoms, location, intensity and behaviour. Of cases reporting the duration of headache prior to the onset of ischaemic symptoms, 43% (29) fell between 3.5 and 7 days and 42% (28) between 7.5 and 14 days. Of cases reporting the location of headache, the most common were 60% (67) occipital, 11%(12) nuchal and 10% (11) in the frontal region. Of cases reporting ipsi/contralateral locations, all (100%, 21) experienced pain ipsilateral to the side of the dissection. Where reported, pain intensity was described as "unbearable" (6%, 3), "severe" by 56% (30) and "responded to simple analgesics" by 20%(11). Where reported, the behaviour was either acute in 23% (16), continuous in 30% (21) or spreading in 17% (12). 27% (39) reported throbbing and 8% (11) stated "unlike anything experienced before".

Conclusion(s):

The results suggest that headaches associated with VADs are severe, often continuous and throbbing in nature, described as severe pain and mainly manifest in the occipital region. The headaches were shown to be present from 3-14 days prior to ischaemic symptoms, highlighting an opportunity for early recognition by clinicians in preventing an ischaemic event. Eight percent of participants described the pain as unique which, although a small proportion, should be borne in mind when differentiating the VAD headache with a previous history of headaches or migraines.

Impact:

These findings create a profile for headaches related to VAD which can be used by healthcare professionals and for guideline development to aid differential diagnosis. However, it should be noted there was considerable variability in symptoms of the cases reported and headaches were often not presented in isolation therefore for a thorough patient assessment the whole presentation should be taken in account.

Three key words: Headache; Vertebral artery dissection, Differential diagnosis

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