

## Update 88

### A New Model To Help Explain Cervical Artery Dissection: A paradigm-shift?

The authors of a recently published commentary (1) presented a theoretical etiologic model of cervical artery dissection (CAD) for the purpose of integrating the present level of understanding of its pathogenesis. Although the notion of an underlying arteriopathy and a trigger are universally accepted concepts, the recently published commentary proposes that a genetic predisposition is necessary for CAD to occur, and that the process of dissection is triggered by environmental factors such as infection, estrogen, or other, as yet, unidentified risk factors, with or without trivial trauma.

The authors also contend that,

"If trivial trauma, in the absence of other triggers, was sufficient to precipitate dissection, one might expect a dose-response curve. That is, increased exposure would lead to increased risk".

The authors go on to discuss how they are aware of only 1 study that has examined this relationship (a study of manipulative therapy to the neck), which found that stroke occurred at random during the course of treatment (ie. no dose-response relationship was observed).

The author's model also suggests that dissection is highly unlikely in an otherwise healthy individual free of an underlying genetic predisposition, as well as unlikely in the absence of the necessary triggers in someone with a predisposition. The authors state that,

"This may explain why CAD is so rare and why (when it does occur) it typically occurs in young people".

The authors conclude by stating,

"This (theoretical etiologic model of cervical artery dissection) may represent a paradigm shift because the model suggests that stroke following manipulation is unlikely in otherwise healthy individuals. Although this model is consistent with current published case-control studies on cervical artery dissection, further research is necessary to accept or refute it as a tenable hypothesis".

#### Reference:

- 1.) Rubinstein SM, Haldeman S, van Tulder MW. An Etiologic Model to Help Explain the Pathogenesis of Cervical Artery Dissection: Implications for Cervical Manipulation. *JMPT* 2006; 29:336-338.  
<http://www.journals.elsevierhealth.com/periodicals/yjmt/article/PIIS0161475406000479/fulltext>