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[Home](#) > [Vol 96, No 10](#) > [Tansirisithikul](#)

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### Spontaneous Craniocervical Arterial Dissection: A Clinical and Vascular Neuroimaging Study

Chottiwut Tansirisithikul, Kammant Phanthumchinda

#### Abstract

**Background:** Spontaneous craniocervical arterial dissection (SCAD) is an important cause of stroke in the young and middle-aged population. However, clinical data of SCAD is limited in Thailand. This present study aims to describe the clinical profiles of SCAD in a tertiary care center in Thailand.

**Material and Method:** All SCAD patients admitted to King Chulalongkorn Memorial Hospital between January 1997 and October 2011 were enrolled. All of the patients fulfilled vascular imaging diagnostic criteria for SCAD. Clinical profiles, associated risk factors, vascular neuroimaging patterns, treatments, and outcomes were analyzed by SPSS program version 17.

**Results:** Fifty patients with SCAD were identified (0.5% of total hospitalized ischemic cerebrovascular disease and subarachnoid hemorrhage (SAH) patients). SCAD was found in 1.6% of patients under the age of 45 years. Eighty-six percent of the patients were diagnosed during the last five years of this present study period. Internal carotid artery dissection (ICAD) and vertebral artery dissection (VAD) were detected in 42% and 58% respectively. The mean age was 48.3±15.3 years. Atherosclerotic risk factors included hypertension (16%), diabetes mellitus (24%), and dyslipidemia (28%). History of previous minor head injury and migraine were encountered in 8% and 4% respectively. Headache was detected in 80% of the cases. Localized headache was observed in 64% of the cases. Diffuse headache due to SAH was detected in 14% of the cases. Neurological syndromes at presentation were ischemic stroke (72%), transient ischemic attack (TIA) (8%), and SAH (16%). Pathognomonic vascular neuroimaging patterns of dissection included wall hematoma (36%), flame-shaped appearance (28%), dissecting pseudoaneurysm (24%), and intimal flap (8%). Other vascular imaging features included dissecting vessel stenosis (58%) and dissecting vessel occlusion (18%). Treatment consisted of anticoagulants (60%), antiplatelets (10%), surgical intervention (22%), and conservative management (8%). Neurological outcomes at discharge with MRS 0-3 were 72%. No recurrent dissection or recurrent cerebrovascular events were observed during the six-month follow-up period. In this present study, significant differences between ICAD and VAD in terms of percentage of SAH, severity, and outcomes were observed.

**Conclusion:** SCAD results in diverse cerebrovascular events such as ischemic stroke, TIA, and SAH in the young and middle-aged population. Advances in vascular neuroimaging play a crucial role in the diagnosis of SCAD. Prompt management is essential for SCAD with a rather favorable outcome.

**Keywords:** Cerebrovascular disease, Craniocervical artery dissection

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#### The Medical Association of Thailand

Address: 4th Floor, Royal Golden Jubilee Building, 2 Soi Soonvijai, New Petchburi Road, Bangkok 10310, Thailand  
Telephone: 0-2716-6102, 0-2716-6962 press 0 Fax: 0-2314-6305

E-mail: [jmedassocthai@yahoo.com](mailto:jmedassocthai@yahoo.com), [math@loxinfo.co.th](mailto:math@loxinfo.co.th) 