



Methamphetamine related spontaneous hemorrhagic stroke and the prevalence of underlying vascular lesions

Robert WJ Ryan MD, FRCS(C), MSc; Amir Khan
[Institution]

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Introduction

Methamphetamine use has been associated with increased risk of hemorrhagic stroke. This has been reported to occur in younger patients, and with worse outcomes compared to non-drug related hemorrhages in patients with aneurysmal subarachnoid hemorrhage. The mechanism for methamphetamine associated hemorrhage is not fully understood, but may be related to necrotizing angiitis and other vessel wall pathology in addition to periods of uncontrolled, extreme hypertension. This investigation explored the demographic features of patients presenting to our emergency department with methamphetamine associated hemorrhages, and the likelihood they harbored an underlying vascular lesion.

Methods

A retrospective review of patients presenting to the emergency department with spontaneous hemorrhagic stroke (subarachnoid, intracerebral, or intraventricular hemorrhage) and urine toxicology screen positive for methamphetamines from August 2013 to September 2014. Demographic information and cerebral vascular imaging (CT or catheter angiogram) were recorded, to identify patients with an

Results

17 patients identified in this time that met the criteria of a spontaneous hemorrhagic stroke and positive urine methamphetamine screen, 10 males and 7 females with the average age 42.7 years (18-61). Six patients had ruptured aneurysms, 5 had ruptured arteriovenous malformations and 6 had no underlying lesion identified; there was no significant difference in age among these patients. Treatment was directed at the patients underlying lesion.

Conclusions

Patients with methamphetamine associated spontaneous hemorrhagic stroke frequently harbor an underlying vascular malformation, either aneurysm or arteriovenous malformation, including many older patients not commonly associated with drug use. We believe routine urine toxicology screening for patients with spontaneous hemorrhagic stroke is justified, and patients positive for methamphetamine warrant further cerebrovascular imaging to look for underlying vascular lesions.

Learning Objectives

Identify patients with spontaneous hemorrhage and drug use at high risk for underlying vascular lesions needing treatment

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