

Posterior Circulation Stroke in a Young Male Following Snake Bite

K Mugundhan*, K Thruvarutchelvan*, S Sivakumar*

Abstract

Neurological deficits can occur following snake bite. It is usually due to intracerebral haemorrhage or subarachnoid bleed as a result of depletion of clotting factors. A healthy 14 years old male developed bilateral ptosis and altered sensorium within 3 hours of snake bite. CT Brain revealed bilateral cerebellar and right occipital infarction with mass effect. Clotting time and bleeding time were normal. The possible mechanism for infarction in this patient is discussed. ©

INTRODUCTION

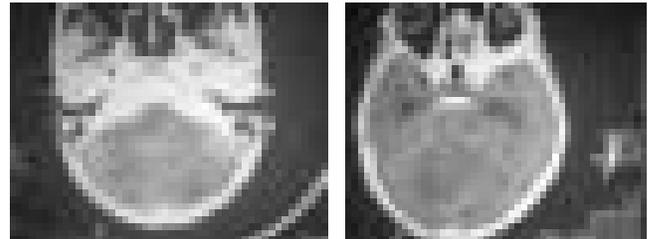
Neurological deficit following snake bite is not uncommon and is usually due to intracerebral or subarachnoid bleed. We present the case of previously healthy young male who developed posterior circulation infarction after the bite of snake. The mechanisms of cerebral infarction following snake bite are discussed.

CASE REPORT

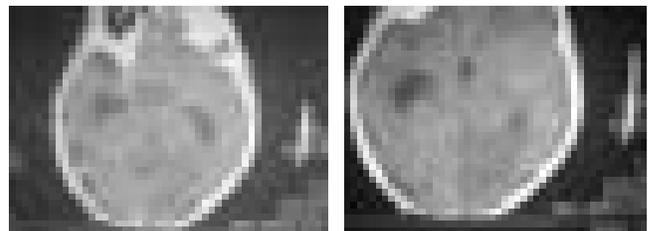
A 14 years old male was bitten by a snake at 10 AM on 16th September 2006 while he was playing outside his house in a hilly area. He developed bilateral ptosis followed by altered sensorium within 3 hours. He was treated with 10 vials of antisnake venom in a taluk hospital and referred to a Tertiary Care Centre.

At the time of admission, patient was drowsy, pupils unequal, sluggishly reacting to light on both sides, oculocephalic reflex was impaired with normal fundus. Patient had hypotonia of all 4 limbs, plantars were extensor. Bitemark was seen over dorsum of right foot. Patient also had cellulitis of Right Foot. Other systems were normal. Haemoglobin, white blood cell count, ESR, blood Sugar, Urea and Serum Creatinine were normal. clotting time was 8 minutes. Bleeding time was 7 minutes. Prothrombin time was 11 seconds. Activated partial thromboplastin time was 30 seconds and platelet count was 1,50,000 cells/cumm. Electrocardiogram was normal (Figs. 1a, b, c and d).

CT Brain taken after 48 hours of the bite revealed bilateral cerebellar and right occipital infarct with mass effect. Patient was treated with mannitol, frusemide, aspirin and



Figs. 1a and 1b : CT Brain showing Bilateral Cerebellar



Figs. 1c and 1d : Right occipital infarction with mass effect

antibiotics. Patient died at 4 PM on 17.9.2006.

DISCUSSION

The clinical and radiological presentation of our patient strongly suggests a vascular thrombosis as cause for his deficit. The occurrence of vascular thrombosis in vessels adjacent to the site of envenomation is common. It is extremely rare for thrombosis to occur in distant vessels. Cerebral infarction following snake bite is rare^{1,4} and only few cases have been reported since 1966. There are several mechanisms by which cerebral infarction occur in snake envenomation.³

1. Hypotension due to hypovolaemia from sweating, vomiting, decreased fluid intake and bleeding tendencies. This leads to low flow state and watershed infarct.¹
2. Hypercoagulability can be due to procoagulants in the

*Asst. Professors of Neurology, Dept. of Neurology, Govt. Mohan Kumaramangalam Medical College Hospital, Salem-636 001, Tamil Nadu.

Received : 4.4.2007; Accepted : 30.6.2008

venom such as hydrolase, consumption coagulopathy phase of DIC.²

3. Endothelial injury due to toxic vasculitis by the components of venom can lead to thrombosis.³

The infarcts in our patient are not in a classical watershed territory and therefore do not suggest hypotension as a cause. Clotting time was normal and ruled out coagulopathy as a cause. The possible cause of infarct in the posterior circulation is due to toxic vasculitis caused by injury to the endothelium by snake venom toxin.

In this case only the posterior circulation is affected and the anterior circulation is spared. Any pre-existing abnormality in the posterior circulatory blood vessel wall will also have to be considered as a cause for the infarct though we do not have DSA studies to prove this.

REFERENCES

1. Bashir Rifant, Jinkins John, Cerebral Infarction in a young female following snake bite. Stroke 1985;16:328-30.
2. Aravanis Christ, Loannidis Paul J, Ktenasjohn, Acute M1 and CVA in a young girl after a viper bite, Br Heart J 1982;47:500-3.
3. Panicker JN, Madhusudhanan S. Cerebral infarction in a Young Male following Viper envenomation. J Assoc Physicians India 2000;48:744-5.
4. Upadhaya AC, Lalithamurthy G, Sahay RK, Srinivasan VR, Shantaram V. Snake bite presenting as Acute Myocardial infarction, Ischaemic Cerebrovascular Accident, Acute Renal failure and Disseminated Intravascular Coagulopathy. J Assoc Physicians India 2000;48:1109-10.

Book Review

Respiratory Physiology The Essentials

Eight Edition

John B West, M.D., Ph.D, DSc, FRCP, FRACP

2008 • 192 pp • 99illus • ISBN 978-81-8473-078-4

Widely considered the "gold standard" textbook for respiratory physiology, this compact, concise, and easy-to-read text is now in its fully updated Eighth Edition.

A companion website on thepoint will offer the fully searchable text, plus animations that illustrate difficult physiologic concepts.

All content fully updated. Each chapter begins with a summary of learning objectives. Key Points boxes at the end of each chapter summarize the most important concepts covered. USMLE-style questions and answers with full explanations for all answer choices. Fully searchable online text, including images. Animations online to illustrate difficult physiologic concepts.

All questions conform to USMLE format and include rationales for all answer choices. Appendix of important equations. Clear writing style. Introductory paragraph for each chapter summarizes learning objectives. Summary boxes highlight important topics.

Published by

Wolters Kluwer India Pvt. Ltd.

501-A, Devika Tower, 6, Nehru Place, New Delhi - 110 019.

ritesh.bhutani@wolterskluwer.com; mahesh.udupa@wolterskluwer.com

rajesh.rajasekar@wolterskluwer.com; vivek.b@wolterskluwer.com

Tel. +91-11-46530000; Fax : +91-11-46530399

www.wolterskluwer.com

Price Rs. 495/-

Ischemic stroke following viper bite is rare. We report a case of posterior circulation ischemic infarction following viper bite in a previously healthy woman. Soon after being bitten by the snake on the left leg, she developed local redness, echymosis and one hour later became drowsy. On examination she had skew deviation of eyes and down gaze preference, generalized hypotonia. A CT scan of brain showed infarcts in cerebellar hemispheres and occipital lobes on both sides and that was confirmed on magnetic resonance imaging of brain. Her coagulation profile was deranged. Most common and serious