Pictorial CME

Young Stroke of Indeterminate Cause

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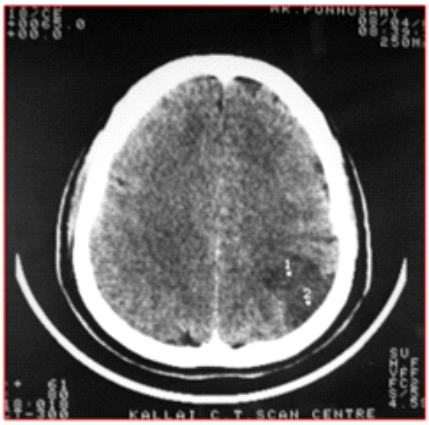
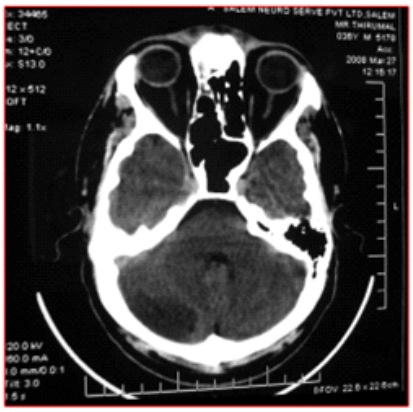
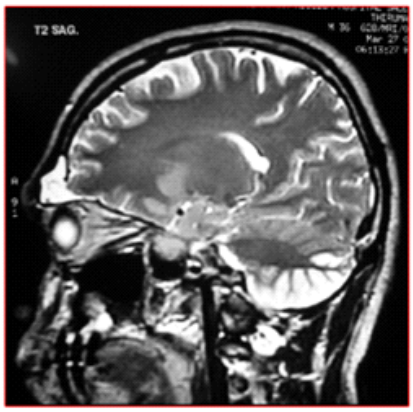


Fig 1 — CT brain showing left parieto occipital infarct

Figs 2 & 3 — DSA showing AP view of left CCA and lateral view of left ICA and its branches respectively

Stroke in young accounts for an increasingly large proportion of overall stroke cases. Thorough investigations do not reveal an etiology in 30% of cases. We report some cases of stroke in young with indeterminate cause after extensive investigations. Our aim is to highlight strokes of indeterminate cause fitting into a particular syndrome and to hypothesize about possible causes in them.





Figs 4 & 5 — CT and MRI brain revealing right PICA infarct

Case 1 — 35 yrs old smoker ,occasional alcoholic presented with features of dizziness and difficulty in seeing in lower half of visual field. MRI Brain showed left parietooccipital infarct (Figs 1, 2 & 3).

Case 2 — 38 yrs old smoker presented with giddiness .MRI Brain Imaging showed a right PICA infarct (Figs 4 & 5).

Case 3 — 28 yrs old male presented with vertigo and vomiting.MRI BRAIN showed right SCA infarct.After 15 days the patient developed left AICA infarct.

Investigations included evaluation for metabolic syndrome,vasculitis work up, prothrombotic state evaluation, VDRL, HIV, Hemogram,peripheral smear evaluation and relevant biochemical investigations, CT brain and MRI Brain with contrast,ECG,Trans esophageal echocardiography(TEE) and a arch + 4 vessel DSA.

Discussion

Stroke in young forms a significant proportion of stroke cases in

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a neurology practice. A significantly large number of these do not reveal any etiology inspite of extensive investigations. Smoking has been a common factor in these cases. We did detailed angiographic analysis of both intracranial and extracranial cerebral vessels trying to look for any atherothrombotic/stenotic pathology. This analysis did not yield any cause with the angiographies including arch aortography being normal. A detailed cardiac analysis including Transthoracic and Trans esophageal echocardiography did not reveal any potential causes of an embolic stroke. Biochemical investigations including evaluation for vasculitic and prothrombotic states were normal.

We present this series to focus attention on a unique syndrome of stroke. The features of this syndrome are

(1) Young males predominantly between 20 to 40 years of age.

(2) Predominantly smokers.

(3) Large anterior/posterior circulation infarcts suggesting involvement of prominent pial vessels.

(4) Clinical and imaging features ruling out lacunar syndromes.

(5) No evidence of any vascular pathology on detailed angiographic analysis.

(6) No evidence of any cardio embolic cause.

(7) All other investigations not suggestive of any particular cause.

A normal cerebral angiography in pial vessel infarcts suggests an embolic pathology, either arterio or cardioembolic.But in our patients,we were unable to find out an aetiology inspite of detailed cardiac and large vessel imaging. The only possible explanation that we can think of is a transient cardiac arrythmia,probably a transient atrial fibrillation,causing a clot to form and subsequently embolize. In none of our cases was there a history suggestive of syncope,palpitations,black outs or anything else to suspect an arrythmia. Neither did a rhythm strip ECG show any abnormality. 24 hour Holter monitoring was not done in our patients.

We present these cases and possible syndrome to generate discussion on possible etiologies, prognosis, cost effectiveness of investigations and management of this problem. In our opinion,such cases need a detailed cardiac electrophysiology studies. We also believe that cessation of smoking may prevent a recurrence as noted in our patients,though a long term follow up is needed. Prognosis of these patients and the need for antiplatelets/ anticoagulants etc need to be studied further.

References

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