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Atypical Atrial Flutter in a Patient with Ischemic Stroke – A Rare ECG Finding

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ABSTRACT
Electrocardiogram (ECG) changes are observed in patients with acute stroke and may create confusion with ECG changes found in cardiac disorders. Various ECG changes are observed in patients with acute stroke including rhythm disturbances (like sinus tachycardia, sinus bradycardia, AF, VPc, RBBB, LBBB, etc.) , prolonged QTc interval, ST segment changes, T wave inversion are the most common findings. Atypical flutter in patient with acute stroke is a rare ECG finding observed in our patient.
Keywords: *Atypical flutter, ECG, Acute ischemic stroke.*

INTRODUCTION

ECG changes are present in 60-90% of patients with intra-parenchymal or subarachnoid bleed and in about 5-20% of patients with acute ischemic stroke.[1] The underlying basis is disordered repolarization process.[2] The possible mechanism is through disturbances in autonomic regulation and massive stimulation of the sympathetic nervous system.[3]

Sustained sympathetic stimulation results in structural damages to the myocardium, which may be mediated by a sudden increase in intracranial pressure,4 hypothalamic,[5] and cardiac nerve stimulation or through an arrhythmogenic center in the insular cortex.6 Moreover, direct damage to the cardiac innervations or imbalance between the left and right sympathetic out flows to the heart, underlying atherosclerotic or hypertensive cardiovascular disease, or asymptomatic/undetectable primary heart disease are among the suggested causes. [7,8]

The ECG abnormalities frequently noted are prolongation of QT interval 45%, ischemic changes 35% and disturbances in rate and rhythm 25%, which include atrial fibrillation, premature atrial and ventricular complexes, supra-ventricular and ventricular tachycardias (SVT and VT), torasede de pointis or polymorphic ventricular tachycardias. [9, 10]

CASE REPORT

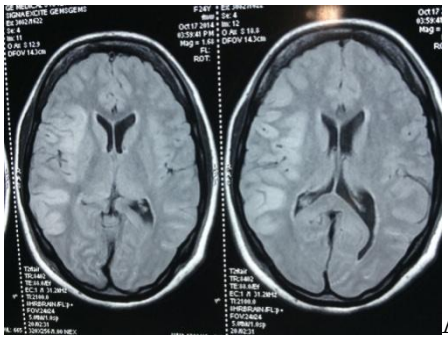
A 24 years old lady presented with history of sudden onset of weakness of left half of body with deviation of angel of mouth to opposite side for last 5 hrs. No history of diabetes, hypertension, smoking, pregnancy, hypercoagulable state or trauma.

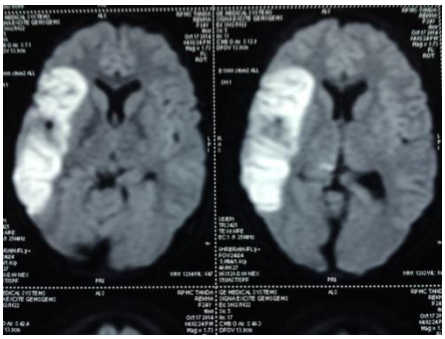
On physical examination, patient was conscious, cooperative and well oriented to time place and person. Slurring of speech is there. UMN type of left hemiparesis with supranuclear 7th nerve palsy were observed. No sensory neurological deficit was found. Examination of other systems including cardiovascular system were normal. Possibility of

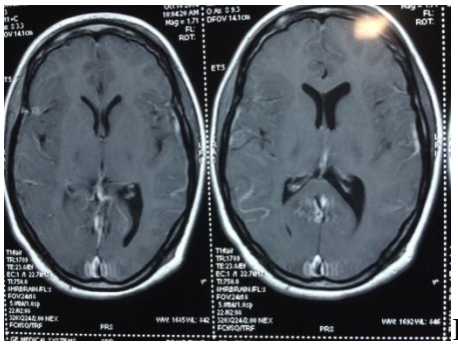
acute stroke was kept and MRI brain was performed.

Routine investigations (including complete haemogram, FBS, Lipid profile, LFT, RFT, Electrolytes, Thyroid function tests &Urine examination were done. All of these hematological and biochemical investigations were within normal ranges. While ECG showing Atypical flutter waves.

MRI BRAIN suggestive of Acute Infarct:


A..


C..


B..

MRI Image: Infarct right fronto-parietal A.T2 FLAIR, B.T1 FLAIR, C.Post contrast enhancement.

ECG showing Atypical Atrial flutter:

ECG Image: Findings (1.Atypical Flutter waves in leads II, III, Avf&V1 2.Prolonged QTc interval, QTc=0.50sec)

CONCLUSION

Just looking ECG changes we should not directly jump to cardiac diagnosis, we should clinically assess for other etiologies (especially stroke), because management protocol for both etiologies are quite different. Hence may guide us further management. In our patient atypical flutter waves a rare ECG finding may be secondary to ischemic stroke or ischemic stroke may be secondary to atrial flutter. Further studies are required to more precisely clarify the causal connection between these abnormalities and the intracranial lesion.

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