

Should we do Brain Imaging in All Cases of Acute Myocardial Infarctions?

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Introduction

Dear Editor,

A 70-year-old man with a history of hypertension experienced acute-onset chest pain, leading to a diagnosis of acute myocardial infarction. His basic cognitive function and other systemic examinations were unremarkable. He was rushed for primary percutaneous angioplasty, where he received sedation to ease the procedure as he became restless owing to the chest pain. He underwent a successful procedure and received dual antiplatelets, statin, and heparin as per protocol. However, since the procedure, he developed sleepiness, which escalated to deep drowsiness within an hour. A CT scan of his brain revealed a non-salvageable massive right frontal hemorrhagic infarct with a significant mass effect. Whereas an acute insult in specific brain areas (like the insular cortex) may trigger cardiac manifestations, myocardial infarction may precipitate cardioembolic stroke due to left ventricular dysfunction, cardiac failure, and atrial fibrillation [1,2].

The incidence of stroke after myocardial infarction is up to 2.1% (though rare yet not negligible) [2]. But we also need to remember that we may miss silent infarcts or small hemorrhages. It was noted that the prevalence of silent brain infarcts (8%-28%) increases with age and is higher in individuals with a history of stroke or dementia, which are frequently present in patients with acute coronary syndrome [3]. When a stroke is accompanied by a myocardial infarction, the mortality rate increases almost three times. And the mortality rate after an in-hospital stroke can reach up to 44% [2]. All these indicate these two combinations are extremely lethal.

When a patient comes with an acute myocardial infarction and does not have any obvious complaint of "stroke-like symptoms," the emergency and cardiology teams become very busy saving the viable myocardium. Some patients receive sedation to ensure smoothening of the cardiac procedure. Now, a patient may not provide a proper history due to a background cognitive deficit (not uncommon in this elderly group), may not be assessed completely as we become more focused for cardiac reasons, or the patient gets sedation for restlessness, giving the stroke a miss. So, we need to do a brain imaging in all cases of acute coronary syndrome (at earliest possibility) and preferably CT brain with angiogram from arch to vertex. A delay in diagnosis could prevent them from receiving an acute stroke intervention, or a small intracerebral hemorrhage could escalate into a massive one after the administration of dual antiplatelets and heparin, which are typically used to support cardiac procedures.

References

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