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Iatrogenic Norepinephrine-Induced Takotsubo cardiomyopathy

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Introduction: Stress-induced cardiomyopathy is a syndrome of transient cardiac dysfunction with no clear pathophysiology. It is thought to be secondary to catecholamine surge. The mechanism by which catecholamine can induce transient cardiac dysfunction is unknown.

Case: We report a 76 year-old woman who was admitted to the hospital with diverticulitis. Two units of packed RBC with furosemide were ordered. After the patient received blood, norepinephrine 4mg IV was given instead of furosemide due to a nursing error. Soon after that, the patient started complaining of chest pain with dyspnea. Electrocardiogram showed new ST segment and T wave changes in the precordial leads. The cardiac biomarkers were elevated. TTE showed ejection fraction of 25-29%. A coronary angiogram was performed and showed evidence of apical ballooning with no evidence of any coronary artery blockages. The diagnosis of Takotsubo cardiomyopathy was made. The patient was treated with beta-blockers, ACE inhibitors, and aldosterone antagonist for heart failure. Clinically, she improved over time and repeated TTE 6 months later showed EF 50-55%.

Discussion: The prevalence of TCM in the general population is estimated to be between 1.7% and 2.2% in patients who present with suspected acute coronary syndrome. It is possible that high doses of catecholamines are directly toxic to myocardial cells. This is supported by histological findings from animal studies and autopsy that document myofibril degeneration, contraction band necrosis, and leukocyte infiltration. In our case, the patient accidentally received a high dose of norepinephrine, which stimulates alpha and beta-1 adrenergic receptors, produces both positive ionotropic and vasodepressor effects. TCM is not a very rare disease but we want to raise awareness of the possible harmful effects of catecholamine on the cardiocytes. To the best of our knowledge, this is first case report about Stress-induced cardiomyopathy secondary to iatrogenic norepinephrine injection.

Biography

Khaled Sherif has completed his MBBCh at the age of 26 years from University of Tripoli/ Libya and has completed his residency training at Libya in 2008 before he came to USA and finishes another residency training in Internal Medicine at Texas Tech University, Lubbock-TX and Geriatric/ Palliative Medicine at University of Oklahoma. He is going to be Director of Internal Medicine/Palliative Medicine clinic at Covenant Medical center, Lubbock/TX. He has published more than 15 papers and abstracts in reputed journals and has been chosen as an editorial board reviewer of repute.

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