Correspondences

Takotsubo Cardiomyopathy

Sir,

The transient LV apical ballooning syndrome also known as Takotsubo cardiomyopathy is a recently described novel acute coronary syndrome. This syndrome was first described by Dote and colleagues naming it after a round bottomed narrow necked Japanese fishing pot used for trapping octopus. It is characterized by peculiar transient regional systolic dysfunction involving apex and mid segment of the LV. This is not associated with any obstructive Coronary artery disease (CAD). The clinical presentation is similar to that of patients with myocardial infarction. Postmenopausal women seem to be at a higher risk for developing this syndrome. Usually emotional stress precedes this syndrome. It has a favorable prognosis.

A sixty five year old lady was admitted with history of chest heaviness precipitated by emotional stress and exertion of 2 weeks duration. There was no relief with antacids. An Electro cardiogram (ECG) showed deep ‘T’ wave inversion in anterior and inferior leads with coving ST segment (Fig. 1). Troponin T was positive and cardiac biomarkers were elevated. An echocardiogram done revealed regional wall motion abnormality involving the LV apex, mid and apical septum apicolateral wall and apical inferior segments with ejection fraction (EF) of 50%. She received nitrates, beta blockers, statins, antiplatelets and anticoagulants. A coronary angiogram done subsequently showed normal epicardial coronary arteries. The left ventriculogram showed the appearance of balloon out LV apex (Fig. 2). Her ECG changes reverted with near normal ECG prior to discharge. She was diagnosed as a case of Takotsubo cardiomyopathy and discharged on medical followup.

The transient LV apical ballooning syndrome is a unique disorder that has only recently been appreciated. Despite the increasing awareness of acute stress induced myocardial dysfunction, the mechanism remains unclear.

The possible proposed mechanisms are sympathetic stimulation, microvascular spasm, and direct myocyte injury mediated by catecholamines. There is evidence that apical myocardium has enhanced responsiveness to sympathetic stimulation potentially making the apex more vulnerable to sudden surges in circulating catecholamine levels. Women appear to be more vulnerable to sympathetically mediated myocardial stunning.

Diagnostic criteria have been proposed by the Mayo Clinic (Table 1) which could be used when there is no evidence of other obvious causes that might present with similar mid and apical LV wall motion abnormalities.

<table>
<thead>
<tr>
<th>Table 1: Takotsubo Cardiomyopathy</th>
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<td>Proposed Mayo criteria for the diagnosis of transient LV apical ballooning syndrome</td>
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<td>- Transient akinesis or dyskinesis of the LV apical and midventricular segments with RWMA extending beyond a single epicardial vascular distribution.</td>
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<td>- Absence of obstructive coronary disease or angiographic evidence of acute plaque rupture</td>
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<td>- New ECG abnormalities (either ST-segment elevation or T-wave inversion)</td>
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<td>- Absence of</td>
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<td>- Recent significant head trauma</td>
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<td>- Intracranial bleeding</td>
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<td>- Phenochromocytoma</td>
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<td>- Obstructive coronary artery disease</td>
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<td>- Myocarditis</td>
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<td>- Hypertrophic cardiomyopathy</td>
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<td>All 4 criteria must be met</td>
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Fig. 1: ECG showing Deep T wave inversion in anterior and inferior leads suggestive of ongoing ischemia.

Fig. 2: Left ventriculogram showing the classical LV apical ballooning.
The overall prognosis of patients presenting with this syndrome seems favorable. The largest series which included 88 patients reported an in-hospital mortality rate of 1%.3

Conclusion

It is useful to consider the LV apical ballooning syndrome as a unique type of acute coronary syndrome.

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References


Delirium in Geriatric Patients in Perioperative Period-Indian Perspective

Sir,

We read an interesting article entitled “the clinical profile and association of delirium in geriatric patients with hip fracture in a tertiary care hospital in India” by Chrispal A, Mathews KP, and Surekha V published in January 2010 issue of JAPI volume 58 page 15-19. The authors have tried to elaborate the delirium in peri-operative period in a prospective study, which is first of its kind in Indian literature. Here we would like to share our views with review of literature in this regard in brief:

1. Delirium is usually present in about 10-30% of the patients in hospital in medically ill patients which increases further as the age advances.1,2 We honor our culture and social rituals as authors have implicated them for low incidence of post-operative delirium in present study.
2. In few (5) patients the cause of delirium remained undetermined.
3. Here we think it probably would have been worthwhile to see for serum calcium, magnesium, thyroid stimulating hormone (TSH), vitamin B12, thiamin and albumin levels estimation. Or if these causes are ruled out there remains the possibility of fatty/cholesterol embolism.3
4. Hyponatraemia has been implicated for delirium in one patient; here it would have been more informative had the authors mentioned about the speed/pace of correction and its relation to delirium/confusional state.
5. Correction of haematocrits, hypoalbuminaemia preoperatively with folate, thiamine and vitamin B12 supplementation/replacement may probably reduce the chances of delirium further. Similarly the advanced techniques of operative procedure with lesser time consumption may be of help.
6. There is role of electroencephalogram (EEG) for diagnosing delirium from other forms of confusion in such patients, which adds further i.e. the EEG may show symmetrical, mild generalized slow activity in the range of 5-10 per seconds-a state that rapidly returns to normal as the delirium clears. In other cases only activity in the fast beta frequency range is seen; in milder degrees of delirium, there is usually no abnormality at all; this is in stark contrast to the generalized slowing and disruption of EEG activity that accompanies most other forms of confusion.3
7. As authors have said “the physician’s role is integral to the management of these patients both for evaluation and stabilization of patient before surgery as well as prevention and management of postoperative complication”. Such patients should be managed under supervision of general physician or neurologist and not psychiatrist which often lacks the wherewithal to properly investigate and manage the great variety of medical diseases causing the condition of delirium and confusional states.3
8. The aim of this correspondence is to further make aware about a very important disease aspect which affects quite a larger percentage of in hospital patients with consequences of prolonged hospitalization, increased mortality, high rate of discharge to other patient care institutions and of course last but not least economic aspect.1

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References


Reply from Author

Sir,

We are thankful to Shubhakaran et.al. for their comments on our article on delirium in geriatric hip fracture patients. As mentioned, the incidence of delirium in geriatric hospitalized patients ranges from 10-40% in published literature, though it is important to stress that this number may increase up to 50% in geriatric hip fracture patients.1

When dealing with geriatric patients with delirium a thorough history and physical examination to delineate potential predisposing (of which dementia is the strongest risk factor), precipitating and perpetuating factors needs to be conducted along with appropriate investigations. Potential putative causes of delirium include medications, infections, metabolic abnormalities, cardio-respiratory and neurological disorders. We would recommend a preliminary laboratory screen which would include a blood count, electrolytes, urinanalysis, creatinine, chest X-ray in addition to tests that would augment clinical suspicions raised in initial history and
examination (for example appropriate cultures in the setting of fever). If the investigations are inconclusive then further testing may be indicated including calcium, liver function tests and investigations for occult infections. This may be an appropriate approach to investigation of a delirious patient especially in resource-poor settings. Despite extensive testing a putative cause for delirium may not be evident in 15-25% of patients. Our study was not designed to exhaustively evaluate patients for delirium at the outset and since all five patients with undetermined causes of delirium recovered quickly, further testing was not pursued. As mentioned in our article “Cerebral micro-emboli have been demonstrated during hip arthroplasty. It is unclear whether occult hypoxia and resultant brain injury is associated with the onset of delirium.”

The patient with hyponatremia had serum sodium of 118 mmol/L which was depletional in nature. The sodium was corrected using standard correction protocol and made an uneventful recovery. As mentioned, EEG shows diffuse slowing of cortical background activity and theta and delta activity which correlates with the degree of cognitive impairment. This however does not differentiate between the aetiologies of underlying illness. Though helpful in the diagnosis of delirium, it has been shown that the classical pattern on EEG has a false positive rate of 17% and a false negative rate of 22% in the detection of delirious vs. non-delirious patients. It has been shown that different types of health care professionals can make an accurate diagnosis of delirium using structured instruments such as the confusion assessment method or the delirium rating scale done at multiple assessment points (one study showing a sensitivity of 89% and specificity of 100%). Therefore, it would be prudent to attempt a diagnosis of delirium, as well as monitor course and outcome, based on established clinical criteria.

Hence, as stated it is important for a physician, geriatrician or neurologist to be actively involved both in the pre-operative and post-operative management of these patients. This intervention along with the ten pronged approach (stated in the article) can reduce the incidence of delirium in geriatric hip fracture patients significantly (absolute risk reduction of 18% as documented by Marcantonio et al.). Importantly, it is imperative to have a high index of suspicion of delirium amongst geriatric hospitalized patients and work towards prevention and early management of patients with delirium.

**References**