Case Report

SAFETY PIN – UNSAFELY LEAD TO END POINT OF LIFE

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ABSTRACT
Systemic air embolism can be a life threatening condition, sometimes so fatal that can end the life. Several case reports support this statement. We present a 65 yrs old male mentally handicapped who accidentally ingested a safety pin, as a complication fatal cerebral air embolism took place that ended up his life. Thus we report this a rare case of cerebral air embolism.

KEYWORDS: Foreign body, Safety pin, Systemic air embolism, Hyperbaric oxygen therapy

INTRODUCTION
Mostly systemic air embolism is iatrogenic but there are several case reports suggest life threatening morbidity and mortality due to it. There are case reports stating systemic air embolism after various procedure like percutaneous transthoracic needle biopsy (PCNB) that is a common interventional radiological procedure, but has several associated complications. The most frequent complications are pneumothorax (27%), intrapulmonary hemorrhage (11%) and hemoptysis (7%), which are usually mild and self limiting [1, 2]. Central line placement is a common surgical procedure in ICU in critically ill patient to administer drugs, fluid and to check CVP, this procedure always carries a high risk for complication [3]. It can happen in post-operative patients also, so a quick check should be made in terms of clinical deterioration of patient and the appropriate treatment should be started as soon as possible.[3,4]. Pointed part of safety pin is guarded but if it is opened than can lead to air embolism. We are publishing yet another case of devastating cerebral air embolism with very unusual and unexpected cause in a age group where it is least expected.

CASE REPORT:
A 65 yrs old male mentally handicapped presented to casualty department with complains of high grade fever with chills, dyspnea initially on exertion later on rest from 4-5 days. Chest X Ray showed
cardiomegaly, 2D-echo done in view of possibility of CHF revealed pericardial effusion, further pericardiocentesis was done showed frank pyogenic thick fluid about 600-700 ml of it was aspirated, antibiotics were started. On day 6 patient deteriorated and developed left lower limb weakness, neurologist consultation was taken at this point of time, right Anterior Cerebral Artery (ACA) territory infarct was suspected MRI brain ordered showed subtle hyperintensity on diffusion weighted images in right ACA territory, possibility of ischemic/embolic stroke was considered, accordingly antiplatelet and anticoagulant were started in view of cardio-embolic stroke. The same day after 10 hrs there was progressive deterioration in level of consciousness, complete left hemiplegia, patient was then put on mechanical ventilation and inotropic support started for hypotension. The cause for this deterioration was considered to be antiplatelet and anticoagulant induced ICH.

Repeat NCCT brain done immediately surprisingly showed multiple air embolism in right Anterior Cerebral Artery – Middle Cerebral Artery Internal watershed area. HRCT & CECT chest done in view of purulent pericardial effusion and possibility of mediastinitis showed a safety pin in esophagus. The tip of pin was extending outside lumen of esophagus and impinging on pericardium and left atrium which was considered to be source of cerebral air embolism. Surprising history unrevealed accidental ingestion of safety pin about 2 weeks back. We have given the best possible medical treatment at the time of air embolism but we could not give Hyperbaric Oxygen Therapy (HBOT) due to unavailability. CTVS consultation had been done and it was too late to be a case for surgery. With grief remorse patient expired next day. This shows the importance of HBOT in cases of air embolism.

CONCLUSION:
This rare presentation of systemic air embolism is an example and a learning that a foreign body ingestion should always be kept in mind as a cause of systemic air embolism. This case shows the catastrophic presentation of complication induced by a neglected safety pin ingested 2 weeks back. Primarily the history regarding the same was not given properly by the attendants and on seeing pyogenic effusion the patient was primarily kept on diagnoses of septicemia due to collection of pus. Later on the history of foreign body ingestion was revealed by attendants when we discussed the CECT Chest report with them. Retrospectively when the CXR was revised the faint metallic shadow was obvious which was initially ignored as artifact lying outside patient’s body.

DISCUSSION:
Systemic air embolism is caused by entry of air into the pulmonary veins or directly into the arterial vasculature which can result into vasogenic edema and surrounding cellular injury[3]. Some case studies also state that mechanical ventilation caused air embolism[5]. Complications of air emboli range from non-specific findings such as a change in mental status to more serious sequel, including seizure activity or cerebral infarction. The management includes measures to prevent further entry of air into the vasculature and to limit the expansion of the embolus. HBOT is the most effective treatment for air emboli. HBOT reduces the size of air emboli and improves the oxygenation of ischemic tissue by increasing the solubility of oxygen in the blood. In addition, HBOT reduces cerebral edema by decreasing the permeability of blood-brain-barrier[3].
Large ill defined hypodense lesion involving almost entire right cerebral hemisphere with effacement of sulcal spaces and loss of CMD. Marked mass effect is seen over right lateral ventricle with contralateral midline shift and subfalcine herniation. Multiple small air pockets are seen in right fronto-parietal region within the brain parenchyma.

- Metallic Foreign Body in esophageal lumen just distal to level of carina with pointed tip extending outside lumen impinging on pericardium in region of left atrium
- Small thrombus with adjacent air pocket in left atrial lumen.
- Pericardial effusion with B/L pleural effusions, basal collapse.
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REFERENCES: