Acute Pulmonary Embolism
catheter based treatment

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A 50 year old lady with suspected GI malignancy presented with subacute onset of dyspnoea and recurrent syncope. Echo revealed mild RV dysfunction and CT scan revealed acute pulmonary embolism with significant thrombus burden in left upper pulmonary artery. In view of deteriorating hemodynamic status and contraindication for thrombolysis, she was taken for catheter based therapy. RV angiogram taken did not opacify left upper pulmonary artery (Fig.1). Left lower pulmonary artery was seen normally filling (Fig.2)

A Pigtail fragmentation catheter was used for pulverizing the thrombus and subsequent aspiration (Fig.3). The guide wire is seen exiting an oval side-hole distal to a radio-opaque marker and this serves as a directing axis crossing the embolic occlusion. During manual catheter rotation, the pigtail tip is slowly advanced and withdrawn within the occlusion over the fixed guide wire. We used a 0.35 guide wire through pigtail for the same purpose and thrombus was aspirated. Patient had a dramatic improvement in BP and oxygen saturation and stabilized after the procedure. Angiogram showed normal opacification of left upper pulmonary artery (Fig.4). She was discharged in a stable condition after 5 days.

Surgery carries very high mortality in Acute Pulmonary Embolism. Thrombolytic therapy may fail to prevent a fatal outcome. Catheter based pulmonary embolectomy is feasible and is associated with low mortality. Currently the technique is evolving and the indications include:

a. Angiographically confirmed acute massive pulmonary embolism
b. Involvement of the central (main and/or lobar) pulmonary arteries
c. Mean pulmonary artery pressure > 25 mmHg
d. Shock index ie. heart rate / systolic systemic blood pressure > 1

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