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Successful thrombolytic therapy for massive pulmonary embolism following abdominoplasty

Sir,

Massive pulmonary embolism is a rare, but life threatening complication, which can occur after abdominoplasty.[1,2] Post-operative pulmonary embolism often possess a dilemma in management due to its attended bleeding risk.

A 59-year-old hypertensive female patient, who underwent suction assisted abdominoplasty and ventral hernia repair developed breathlessness on the 5th post-operative day. Considering low saturation and significant symptoms despite bronchodilators, cardiac evaluation was performed. Echocardiogram revealed dilated right atrium and right ventricle (RV), suggestive of pulmonary embolism. Computed tomography scan confirmed massive pulmonary embolism. The only immediately available treatment option was to give thrombolytic drug. The risk of bleeding complication was anticipated. Considering the mortality rate of untreated pulmonary embolism is as high as 30%, weight adjusted thrombolytic drug tenectaplase (40 mg) was given. Her symptoms relieved within 2 h, but after 6 h she had significant bleeding from wound margins with hypotension. It was managed by manual compression, tight banding, intravenous fluids and dopamine. 2 units of blood transfusion were also needed. She was discharged 1 week later on oral anticoagulants for next 3 months. On 1-year follow-up her echocardiogram was normal.

The reason for increased incidence of pulmonary embolism following this surgery is found to be secondary to elevation of intra-abdominal pressure. This abdominal compartment syndrome is directly related to the severity of plication of rectus fascia. When the intra-abdominal pressure increases by more than 20 mm of Hg, it impedes the venous return from the lower limbs and predispose to deep vein thrombosis.[3,4] Perioperative pulmonary embolism, if associated with hypotension and RV dilatation often needs thrombolysis despite bleeding risk.

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EDITOR'S COMMENT

Tenecteplase is the 527 amino acid protein produced by recombinant DNA technology. Tenecteplase is a modified form of human tissue plasminogen activator that binds to fibrin and converts plasminogen to plasmin. In the presence of fibrin, in vitro studies demonstrate that Tenecteplase conversion of plasminogen to plasmin is increased relative to its conversion in the absence of fibrin. This fibrin specificity decreases systemic activation of plasminogen and the resulting degradation of circulating fibrinogen as compared to a molecule lacking this property. Following administration of the drug there are decreases in circulating fibrinogen and plasminogen. Whereas streptokinase is given slowly in 30 to 60 minutes tenectaplase can be given as a bolus over 5 to 10 seconds and has a quicker onset of action. However in the Indian market the drug is five times costlier than streptokinase.

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