Fatal post-operative venous thromboembolism in an adult with Down syndrome

Dear Editor,

Venous thrombo-embolism (VTE) is the most common cause of preventable deaths in hospitalized patients. Down syndrome (DS), not considered as an independent risk factor, is associated with VTE.

A 20-year-old patient of DS was posted for epigastric hernia repair. She had facial features of DS, low intellect, large tongue, thick neck (circumference 41 cm), BMI 35 kg/m^2 and Mallampatti grade 3 [Figure 1a]. Her routine investigations, cervical spine radiographs and echocardiogram were normal. After premedication with intravenous midazolam 1.5 mg, anesthesia was induced with inj. fentanyl 100 μg, propofol 150 mg, and vecuronium 6 mg; intubation was done with a cuffed 7.5-sized endotracheal tube and anesthesia maintained with oxygen, nitrous oxide, and sevoflurane. She received TAP block with 20 ml of 0.25% bupivacaine on either side. After extubation, she developed mild laryngospasm that responded to jaw thrust and positive expiratory pressure.

Postoperatively, after 72 h, she suddenly developed dyspnoea, tachycardia, (130 bpm) and hypotension (80/60 mmng) and desaturation (Spo2 78%). She was intubated and mechanically ventilated (SIMV mode, tidal volume 500 ml, I:E 1:2, Fio2 0.8, pressure support 12 cm H20, rate 10/min). (Inj. dopamine 10 μg/kg/min) was started after an absence of response to fluid challenge. A bedside echo revealed massively dilated right atrium and ventricle [Figure 1b]. A diagnosis of massive pulmonary embolus (PE) along with a decision to systemically thrombolyse the patient was made by the cardiologist. (streptokinase 500,000 units over 15 min then with a maintenance dose of 100,000 unit/h). Her blood pressure improved gradually and oxygen saturation fluctuated at 85%–90%. (Dopamine and noradrenaline) were titrated to maintain a mean arterial pressure of 55 mmHg. After a few hours, she developed bleeding from the nasogastric and endotracheal tube, surgical site along with hematuria. Fresh frozen plasma and whole warmblood (total of 15 and 7 units) were administered along with inj. tranexamic acid. The blood loss continued and she remained in sustained hypotension and went in for a cardiac arrest. Cardiopulmonary resuscitation was instituted, the patient could not be revived and went for asystole.

VTE has been reported in children and adolescents with DS. Adult patients with DS have an increased risk of cardioembolic events and strokes.[1] DVT – the initiating event is usually silent, history and physical examination are unlikely to be useful in intensive care.[2] Sudden death is the only presenting feature in 25% of patients with PE.[3] Hemodynamically, unstable patients are candidates for systemic thrombolysis as it may improve oxygenation, pulmonary perfusion, and relieve symptoms – but the risk of bleeding might outweigh all these benefits,[4] a fact reinforced by our experience. Recent brain and spine surgery is an absolute, whereas other surgeries are relative

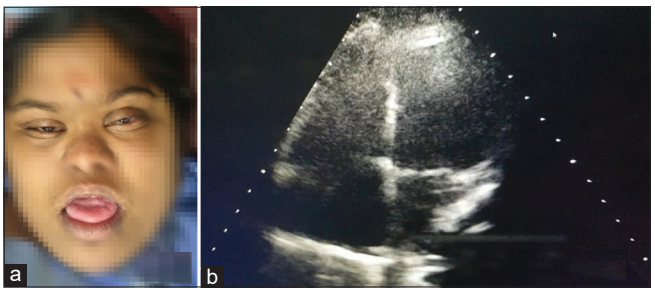

Figure 1: (a) Facies of the patient (b) Bedside echo cardiogram screenshot showing dilated RA and RV

contraindications for systemic thrombolysis.[5] Thrombolysis was yet performed in our patient due to the persisting hemodynamic instability, massive bleeding ensued, and which could not be controlled by blood products.

To conclude, patients with DS are at increased risk for developing VTE and appropriate preventive/early diagnostic strategies should be adopted.

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Conflicts of interest
There are no conflicts of interest.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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