Massive haemorrhage during anterior cervical fusion attributable to a tear at the junction of the subclavian and internal jugular veins

Editor—Injury to major blood vessels during anterior cervical fusion is rare but could be catastrophic. We report a case of massive haemorrhage during cervical fusion as a result of a tear at the junction of subclavian and internal jugular vein. A 150 cm, 84 kg, 46-yr-old female with radicular pain in the right upper arm as a result of disc prolapse at C5-6 level underwent anterior cervical fusion under general anaesthesia. One hour after the start of surgery, massive haemorrhage was noted. The surgeons immediately suspected a tear at the junction of internal jugular vein and subclavian vein possibly caused during retraction. We immediately secured i.v. lines in both the ankles with 16 G cannulae and started rapid infusion of crystalloids, followed by 1000 ml of colloid. We also ordered for 5 units of packed red blood cells (PRBCs) and 3 units of fresh frozen plasma (FFP). There was a delay in securing haemostasis because of profuse bleeding and difficult access to the bleeding site which was behind the clavicle and not exposed by the surgical incision. During this period systolic arterial pressure decreased to 90 mm Hg. Invasive arterial pressure monitoring was started after cannulating the dorsalis pedis artery. As the bleeding could not be stopped, a cardio-thoracic surgeon was called for and he had to cut open the clavicle to repair the venous tear. While the vascular repair proceeded, we transfused 9 units of PRBCs, 6 units of FFPs and 3 units of platelet rich plasma. Total estimated blood loss was about 8 litre. Throughout the procedure systolic arterial pressure was maintained between 80 and 100 mm Hg without using inotropes or vasopressors. In view of massive blood transfusion, anticipated obstruction of internal jugular vein (secondary to vascular repair) and possibility of airway oedema, we electively ventilated the lungs for 24 h in the ICU. Postoperative recovery was uneventful apart from a right-sided phrenic nerve palsy.

Vertebral artery injury during anterior cervical fusion is reported in the literature. However, during this procedure, there was massive haemorrhage as a result of a tear at the junction of the subclavian vein and internal jugular veins. This site of bleeding was not accessible for compression of the vessels for haemostasis and was not exposed by the surgical incision for anterior cervical fusion. Possible cause of vascular injury in this case is unduly forceful retraction of tissues attributable to limited exposure of the surgical area.

The anaesthetic implications of such an event include the danger of concealed bleeding presenting as haemodynamic collapse, and as bleeding cannot be controlled till the clavicle is split to obtain access to the injured site, the anaesthetist has to maintain the patient haemodynamically stable for a prolonged period.

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References


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