

Bone graft extrusion and delayed airway obstruction: A catastrophe following anterior cervical discectomy and fusion

Dear Editor,

An adverse respiratory event is one of the most feared complications following anterior cervical discectomy and fusion (ACDF), having an incidence of 5.2% in such

patients.^[1] This report describes airway compromise in a patient following ACDF surgery due to bone graft extrusion.

A 55-year-old man diagnosed with cervical spondylotic myelopathy was scheduled for ACDF surgery. The patient was hypertensive, and airway examination revealed a class II Mallampatti score and restricted neck movement due to pain. On the day of the surgery, the patient was given 40 mg of intravenous pantoprazole and 0.4 mg of intramuscular glycopyrrolate. General anesthesia was induced with 120 mg of propofol followed by paralysis with 8 mg of cisatracurium. Fiberoptic intubation was performed with a cuffed flexometallic tube (8 mm ID), and anesthesia was maintained

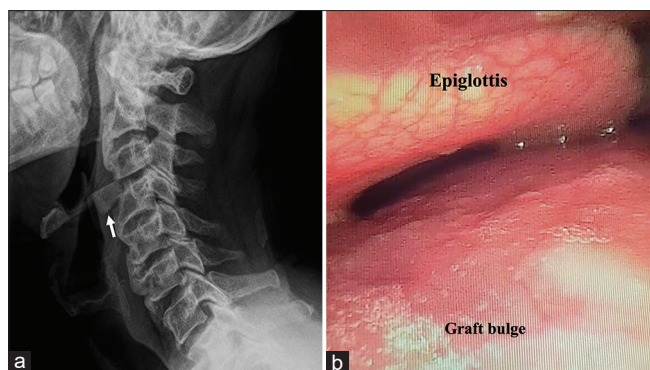


Figure 1: (a) Lateral neck X-ray showing anterior extrusion of the bone graft (arrow) and impingement of the hypopharynx. (b) Fiberoptic image showing narrowed space with the edematous epiglottis and posterior wall bulge due to graft extrusion

with desflurane (MAC 1) along with air and oxygen mixture. Analgesia was supplemented with 6 mg of intravenous morphine, and muscle paralysis was maintained with cisatracurium infusion at 2 mcg/kg/min. Anterior cervical discectomy was performed, and the disc space was filled with a tight-fit iliac bone graft without cervical plating. There was 200 ml of intraoperative blood loss, and 1500 ml of crystalloid was infused. The muscle paralysis was reversed (2.5 mg of neostigmine and 0.4 mg of glycopyrrolate) after a four-hour surgical procedure, and the trachea was extubated. The patient was fully conscious and was transferred to the intensive care unit (ICU). On the evening of the surgery, the patient had difficulty in swallowing solids but showed no breathing difficulty. The next day, the patient was unable to phonate and had difficulty in breathing. An urgent cervical X-ray revealed anterior extrusion of the bone graft that was causing severe impingement on the hypopharynx [Figure 1a, arrow]; thus, re-exploration was planned. Intravenous glycopyrrolate (0.2 mg) and fentanyl (50 mcg) were given and awake oral fiberoptic intubation was performed using the spray-as-you-go technique. A gross narrowing of the hypopharynx with a bulge in the posterior wall and an edematous epiglottis [Figure 1b] was noted. The intraoperative anesthesia was maintained with desflurane (MAC 1) along with air and oxygen mixture. The bone graft was repositioned and cervical fixation was carried out with plating and screw fixation. The tracheal extubation was performed after a period of 24 hours in the ICU. The patient was discharged from the hospital after three days, following an uneventful postoperative course.

Angioedema, retropharyngeal hematoma, and pharyngolaryngeal edema can cause airway complications after ACDF surgery.^[2] ACDF entails the removal of the intervertebral disc and insertion of an autologous bone graft or an artificial disc followed by cervical plating. The ACDF procedure can also be performed without cervical plating, by inserting a snugly fitting bone graft into the disc space. Extrusion of the bone graft following ACDF surgery can be caused by a variety of biomechanical factors. Extensive neck movement due to coughing, repeated nausea, delirium,

restlessness, and sheer stress at the operated level can result in graft displacement. Hence, postoperative neck immobilization with a cervical collar is prudent.

To conclude, bone graft extrusion after ACDF surgery can be fatal, and extreme caution when monitoring the patient is required in the postoperative period.

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Conflicts of interest

There are no conflicts of interest.

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