INTRODUCTION
Thyroidectomy is a surgical procedure performed to remove the enlarged thyroid that may be benign or malignant. There are few complications related to removal of thyroid gland, that may occur intraoperatively, immediately or hours postsurgery. These include hematoma, recurrent laryngeal nerve palsy, tracheomalacia, hypocalcemia and tracheal rupture or tear.

Surgical emphysema, also called tissue emphysema, is a condition in which air becomes trapped in subcutaneous tissues. It is a rare complication of thyroidectomy, and usually related to tracheal tear and associated with excision of large thyroid mass, involving trachea.

In the given case report, patient developed rapidly progressive surgical emphysema, half-an-hour after total thyroidectomy, due to tracheal tear while patient was in post-anesthesia recovery unit (PACU); but prompt management saved the patient.

CASE REPORT
A 52-year woman with history of thyroid carcinoma was scheduled for total thyroidectomy. She had no other co-morbid, no previous history of any surgical intervention or drug allergy, and no history of chemotherapy or radiotherapy. Patient was clinically and bio-chemically euthyroid. On chest X-ray (CXR), there was slight tracheal deviation to right side. Patient was intubated under direct laryngoscopy, and total thyroidectomy was done. Patient remained hemodynamically stable with no intraoperative complications. At the completion of procedure, patient was shifted to recovery. Half-an-hour after shifting, periorbital swelling was noted, which rapidly progressed and involved face and upper thorax (Figure 1). Patient was immediately shifted to Operation Theater with suspicion of subcutaneous emphysema due to tracheal tear. Difficult intubation was anticipated. Endotracheol tube (ETT) of size 6.5 mm internal diameter (ID) was passed with the help of stylet after rapid sequence induction with propofol and succinylcholine. Prompt exploration revealed a small longitudinal tear at the level of 2nd tracheal ring anteriorly (Figure 2), which was later restitched, wound was closed again; and patient was shifted intubated to surgical ICU for ventilation till the next morning of surgery and then extubated successfully. Patient remained hemodynamically stable afterwards.

DISCUSSION
Iatrogenic tracheal tear or laceration is a rare condition with an incidence of 0.06% with high mortality and morbidity. Early recognition and repair is the only treatment. It occurs in diverse conditions; examples include enlarged thyroid gland invading the trachea, overinflation of cuff of ETT with pressure of > 32 mmHg, use of stylet while intubating, use of diathermy adjacent to trachea, and persistent uncontrolled cough in early postoperative period. Tracheal tear can result in leakage of air in the mediastinum, resulting in massive tissue swelling around face and upper thorax, which can further obstruct the airway and make intubation difficult. Tracheal tear or lacerations are more common in posterolateral region of trachea.

Management involves immediate CXR followed by CT scan. Bronchoscopy can be done to determine the site of injury.
Anaesthetic concerns of surgical emphysema following thyroidectomy and extent of tear. But, it is prudent to explore the neck at the earliest so that a lifesaving tracheostomy can be done in the same sitting, if required.

Airway control is of prime importance in the management of such patients. Difficult airway should be anticipated. The patient, mentioned in the case report, developed swelling around face and neck, after shifting in the PACU.

Vigilant observation in early postoperative period is very important in patients undergoing thyroidectomy because early recognition is the key in saving patients with surgical emphysema, postoperatively.

REFERENCES


Figure 1: Facial swelling resulting from surgical emphysema.

Figure 2: Small longitudinal tear in the anterior wall of trachea.