

resection of mediastinal nodes, pericardium, and left auricle for a stage III squamous cell cancer. The pleural cavity was drained with a chest tube connected to a Pleur-Evac drainage unit. The patient was breathing spontaneously. During the first postoperative day, subcutaneous emphysema appeared at the level of the thoracotomy incision and increased rapidly extending to the hemithorax. A bronchopleural fistula was suspected, but two successive bronchoscopies on day 1 and 2 were negative. The chest tube was connected via a connector to a gas analyser (Capnomac Ultima Datex). While the patient was breathing air, the concentration of oxygen in the gas collected from the pleural cavity was 20%. During the inhalation of nitrous oxide, this gas was rapidly detected in the pleural cavity, and after 2 min, the concentration reached 30%. A third bronchoscopy performed a few hours later confirmed the presence of a leak of the bronchial stump. We believe that this technique is simple and useful for the early detection of a postpneumonecomy BPF.

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Reference

1. Wong DC, Haindl W. The use of Technegas in the detection of a bronchopleural fistula. *Clin Nucl Med* 2000;25:548-9.

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Spontaneous Cervical and Mediastinal Air Emphysema After Ecstasy Abuse

To the Editor:

Pneumothorax and spontaneous pneumomediastinum should be considered in an Ecstasy user who complains of chest pain, neck pain, or shortness of breath (1-5). We report a case of a patient who presented with subcutaneous cervical air emphysema and spontaneous pneumomediastinum associated with Ecstasy use.

A 27-year-old man was admitted to the hospital, complaining of sudden chest pain and dyspnea. He had taken one tablet of Ecstasy and was an occasional drug abuser. No history of trauma or surgery was reported. Initial examination showed cervicofacial and thoracic subcutaneous air emphysema. The initial chest radiograph showed emphysema in the cervicofacial, thoracic, and axillary regions with no evidence of rib fracture or pneumothorax. The results of the esophagogram, otolaryngologic examination, and bronchoscopy ruled out any abnormality. The chest CT demonstrated air in the subcutaneous, visceral, and carotid spaces of the neck, extending along the anterior mediastinal space. A small left pneumothorax was also observed. During the following days, the patient's condition improved notably, with almost total resolution of the cervical emphysema and pneumomediastinum shown in the radiographs.

Ecstasy, a dangerous psychoactive drug, has become a popular recreational drug on college campuses and dance halls in the world. Some cardiac arrhythmias requiring medical attention have been associated with consumption of Ecstasy and some fatalities. This is a case of spontaneous cervical and mediastinal emphysema caused by ingestion of the amphetamine derivatives of Ecstasy. The same complication has been reported with marijuana, cocaine, and heroin abuse.

The cause is usually an exacerbation of bronchospastic pulmonary disease with sudden forceful Valsalva maneuver against the closed glottis. The syndrome is also associated with inhalational drug use (cocaine, marijuana), in which the user performs a forceful Valsalva to enhance the drug effect.

The association between Ecstasy and barotrauma may result from the decrease in interstitial pressure and hence increased bronchovascular gradient occurring with the high levels of physical exertion

undertaken by some ecstasy users. Currently, there is no evidence to support a direct pharmacological effect (1).

Clinically, these patients usually present with dysphonia, neck swelling, and chest pain. The clinical appearance depends on the degree of cervical air emphysema present (6). These patients may exhibit signs of mediastinal air on chest radiograph. The clinician should, however, rule out complications such as spontaneous or traumatic rupture of esophagus and tracheobronchial tree, tension pneumothorax, ruptured laryngocele, and foreign bodies which can cause distal airway obstruction (7). Subcutaneous and mediastinal air are generally self-limiting conditions and do not require drainage. Bed rest, analgesics, and supplemental oxygen are all that are indicated.

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References

1. Mazur S, Hitchcock T. Spontaneous pneumomediastinum, pneumothorax and ecstasy abuse. *Emerg Med* 2001;13:121-3.
2. Quin GI, McCarthy GM, Harries DK. Spontaneous pneumomediastinum and ecstasy abuse. *J Accid Emerg Med* 1999;16:382.
3. Pittman JA, Pounsford JC. Spontaneous pneumomediastinum and Ecstasy abuse. *J Accid Emerg Med* 1997;14:335-6.
4. Harris R, Joseph A. Spontaneous pneumomediastinum—"ectasy": a hard pill to swallow. *Aust N Z J Med* 2000;30:401-3.
5. Ryan J, Banerjee A, Bong A. Pneumomediastinum in association with MDMA ingestion. *J Emerg Med* 2001;20:305-6.
6. Lopez-Pelaez MF, Roldan J, Mateo S. Cervical emphysema, pneumomediastinum, and pneumothorax following self-induced oral injury: report of four cases and review of the literature. *Chest* 2001;120:306-9.
7. Lemaire V, Gielen S, Lebrun F, Bury F. Pneumomediastinum in children. *Rev Med Liege* 2001;56:415-9.

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Caution! Another Potential Source of Trouble: A Skin Staple Falling into the Trachea During Laryngectomy

To the Editor:

With improvements in technology and techniques, both surgery and anesthesia are getting better. However, these novel devices may also pose new problems, to the extent of causing morbidity and mortality.

A total laryngectomy was being performed in an adult patient for carcinoma of the larynx. Late in the surgery, bilateral neck skin incision wounds were closed with skin staplers (Proximate Plus MD 35W). During final fashioning of the end-tracheostoma, the armored tube was intermittently removed from the trachea (intermittent apnea) and sutures inserted in the end-stoma. The tracheal lumen was wide and revealed carina from the head to the end.

The vigilant anesthesiologist noticed something deep down in the tracheal lumen while looking at the surgical field and informed the surgeon. On closer examination, it turned out to be the unexpected—a skin-staple! Probably, one of the staples dislodged due to unsatisfactory skin-hold and found its way down the trachea through the end-tracheostoma. This could happen if the staple lying somewhere on the drapes is inadvertently picked up with a gauze piece used for mopping and drops into the trachea when wide open.

However, the surgeon easily managed to remove the staple immediately with a long artery forceps under direct vision. Careful inspection revealed no obvious tracheal mucosal injury. It was fortunate to be noticed before the armored tube was reinserted. Intermittent positive pressure ventilation, blood trickle, and tracheal suction could have caused such a foreign body to be pushed further down the trachea/bronchus. Being a sharp, pointed nonvegetative foreign body, these pins can cause severe airway injuries and consequences (1).