Cervicofacial Emphysema and Pneumomediastinum: a Case Report

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ABSTRACT

Subcutaneous emphysema is an entity that occurs when air is forced beneath the soft tissues, leading to swelling, crepitus on palpation and potential to spread along fascial planes. Once beneath the dermal layer, the air can remain at the surgical site or continue to spread, passing through the muscular space to the subcutaneous and periphery of the neck, and reaching the mediastinum. If the inflowing air contains bacteria, serious infection may ensue. Cervicofacial emphysema and pneumomediastinum can be complications associated with surgery in the head and neck, infectious diseases, trauma, iatrogenic and spontaneous. The occurrence of this complication after dental extraction is uncommon. Methods: A case report is presented and the literature reviewed.

RESULTS:A twenty-five-year-old man presented to the emergency department complaining of swelling and pain in the face and neck after dental extraction one day earlier. He denied odynophagia, dysphagia and dyspnea. He was otherwise healthy, with no significant past medical or surgical history. At examination, the patient was hemodynamically stable, with no fever or signs of respiratory distress. His voice was normal. His swallowing was normal and he was able to swallow all food without difficulty. He had crepitus on cervical palpation without thoracic complaints. Fiberoptic laryngoscopy did not reveal glottic abnormalities. Computed tomography scan (CT) of the head and neck showed extensive accumulation of air in the subcutaneous spaces of the neck, face and mediastinum and the diagnosis was extensive subcutaneous emphysema and pneumomediastinum. The patient was admitted for observation and intravenous antibiotics, being discharged in the sixth day with resolution of the clinical symptoms and radiological improvement.

DISCUSSION

The etiology of subcutaneous emphysema and pneumomediastinum can be iatrogenic, traumatic, infectious, or spontaneous. The most common cause is iatrogenic, usually secondary to head and neck surgery, radiation, mechanical ventilation and dental extraction. Traumatic etiology often relates to facial bone fractures, infraorbital, subangloid, mastoid or chest wall trauma. It can also occur spontaneously in those with previous pulmonary disease with increased intra-alveolar pressure or weakened alveolar walls. A dental extraction complication, it is a rare cause and usually results from the use of high-speed dental drills or air and water dental syringes. ‘Postoperative subcutaneous emphysema and pneumomediastinum’ after a dental procedure were first reported 100 years ago when a man died a few hours after surgery. The signs of subcutaneous emphysema are sudden cervical swelling without significant tenderness, and crepitus on palpation. The features that suggest a pneumomediastinum are dyspnea with a brassy voice, chest or back pain, and Hamman sign. However, in the majority of cases, the clinical picture is limited to mild swelling and discomfort, and many cases go unrecognized. Different diagnosis should include allergy and infection. ‘Cases with more diffuse involvement are admitted for airway observation, 100% oxygen and intravenous antibiotics.’

REFERENCES

1 - Capes J, Salon J, Wells D, Bilateral Cervicofacial, Axillary, and Anterior Mediastinal Emphysema: A Rare Complication of Third Molar Extraction, J Oral Maxillofac Surg, 1999, 57:996-999
3 - Cases with more diffuse involvement are admitted for airway observation, 100% oxygen and intravenous antibiotics.
4 - Conclusions: Cervicofacial emphysema and pneumomediastinum are possible complications from dental procedures and once the otolaryngologist is often called to evaluate such a condition he should remember this possible cause. Early diagnosis and management is essential in preventing further complications.

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