

Rare complications of surgical emphysema and pneumomediastinum occurring post dental extraction

A 20-year-old woman presented with painful left sided facial swelling and discomfort following dental extraction for a left lower molar tooth that required local anaesthetic and an air turbine drill. The patient was initially diagnosed as experiencing an allergic reaction to the anaesthetic used. The discomfort began in the left side of her face postoperatively, radiating down her neck and to her sternum. There were no clinical signs of cardiorespiratory distress. Swelling was noted down the left side of her face and extended to the submandibular region bilaterally and left supraclavicular fossa. Crepitus was demonstrated by palpation of the left side of her neck. An anteroposterior facial view (fig 1) and posteroanterior chest radiographs (fig 2) revealed pronounced surgical emphysema in the soft tissues of the face, neck and chest, along with a small pneumomediastinum. Prophylactic intravenous antibiotics, steroids and analgesia were prescribed and the patient was admitted. The symptoms subsequently improved and she was later discharged from hospital with appropriate follow-up.

Surgical emphysema and pneumomediastinum complicating dental extraction is a very rare but documented event. The differential diagnosis in any patient presenting with facial and neck swelling following dental extraction and surgical emphysema should include infection, pneumothorax, pneumomediastinum, oesophageal rupture, local allergic reaction, angioedema and anaphylaxis. The potential complications arising from cervical emphysema and pneumomediastinum may include



Figure 1 Anteroposterior facial radiograph.

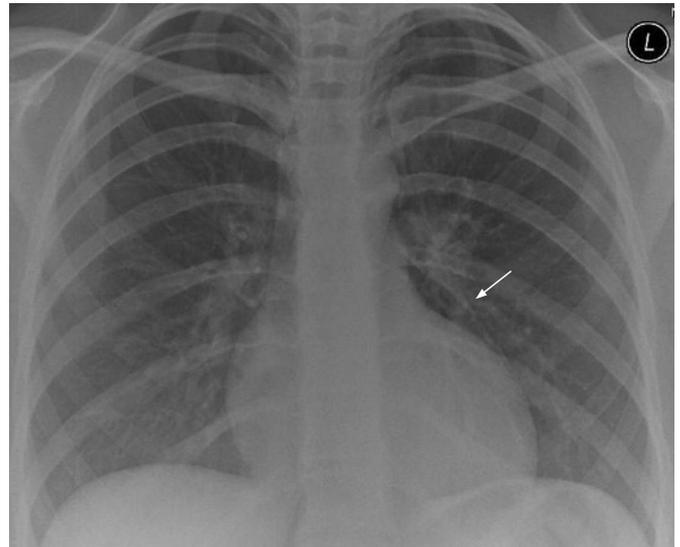


Figure 2 Posteroanterior chest radiograph (pneumomediastinum arrowed).

airway obstruction, mediastinitis and cardiac tamponade.¹ Facial and neck anatomy is complex but can demonstrate how the compressed air can track into these separate body cavities. Direct communications exist between the base of the first, second and third molar teeth roots and the sublingual and submandibular spaces. These two spaces in turn communicate with the parapharyngeal, pterygomandibular and retropharyngeal spaces. The air can then migrate into the pleural space and mediastinum from the retropharyngeal space. It is also important to note that swelling within the parapharyngeal or retropharyngeal spaces can lead to airway compromise.² Therefore, if compressed air from the air turbine drills is directed into the surgical field during the dental extraction it can potentially penetrate into the soft tissue planes that offer minimal resistance.

Many patients undergo safe and hygienic treatment at their dental practice and only a very small number of patients will experience the complications that have been presented and discussed here. Clearly, however, this small cohort of patients with these rare complications requires increased vigilance for prompt recognition and appropriate management as it is highly possible, as seen in this case, for the patient to be initially misdiagnosed.

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