Iatrogenic post-pulpectomy cervicofacial subcutaneous emphysema in a paediatric patient

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DESCRIPTION

A 9-year-old boy with no medical history presented to the emergency department (ED) directly from the dental clinic with a main problem of left-sided facial swelling following a dental procedure. An hour prior, he underwent a pulpotomy procedure for tooth J. He received local infiltration of lidocaine with epinephrine between teeth I and J and nitrous oxide via face mask. A dental handpiece was used to section the tooth and a stainless-steel crown was placed. During this procedure, the patient was noted to have progressive left-sided facial swelling to the point of being unable to open the left eye. He was given diphenhydramine and sent to the ED. He was found to have swelling and crepitus in the periorbital and maxillary regions. This was concerning for subcutaneous emphysema, and confirmed on facial imaging (figure 1). At re-examination 1 hour later (figure 2), there was spontaneous partial resolution of symptomatology. At 1-week follow-up, he had near-complete resolution of facial swelling with no further complications.

Iatrogenic subcutaneous emphysema in dental procedures is a rare but well-documented phenomenon. It occurs when interruption of intraoral epithelium combined with positive pressure forms a tract that can reach the periorbital area and travel down to the mediastinum. Air-driven handpieces have been implicated in the majority of such documented cases, with positive pressure ventilation also contributing. Most cases resolve within 7–10 days with no complications. In a literature review

Figure 2 Water's view facial radiograph demonstrating subcutaneous emphysema in the left retro-orbital area.

Patient's perspective

I (patient's mother) was concerned my child was having an allergic reaction, and that he might stop breathing. The swelling scared me. I was very relieved and grateful for the care from the emergency room doctors!

Learning points

- ▶ Subcutaneous emphysema is a rare but well-documented phenomenon that may occur secondary to routine dental procedures, most cases self-resolve within 7–10 days
- ▶ There is no evidence in favour of routine antibiotics for infection prophylaxis or steroids for inflammation

Figure 1 Patient photographed at re-examination with partial resolution of facial swelling.

of 32 cases, 5 resulted in significant complications—3 of which were associated with intubation or extubation. The two cases of complications in non-intubated patients were a focal alveolitis in a patient undergoing an extraction, and air emboli, seizures, and memory deficit in a patient undergoing an extraction. There is no consensus on treatment. Some treat with prophylactic antibiotics and/or steroids, while with others they adopt only watchful waiting.¹

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