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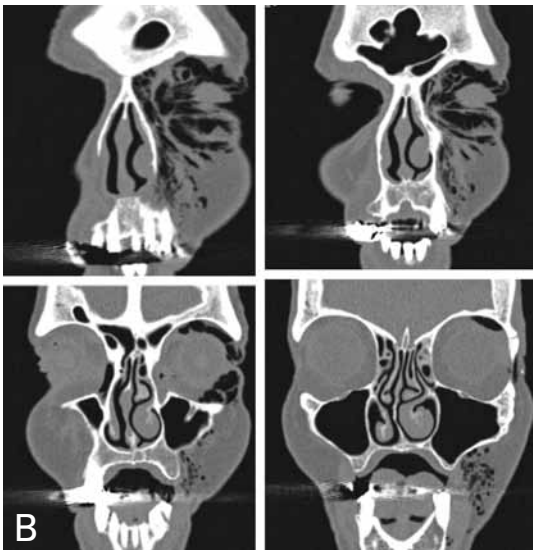
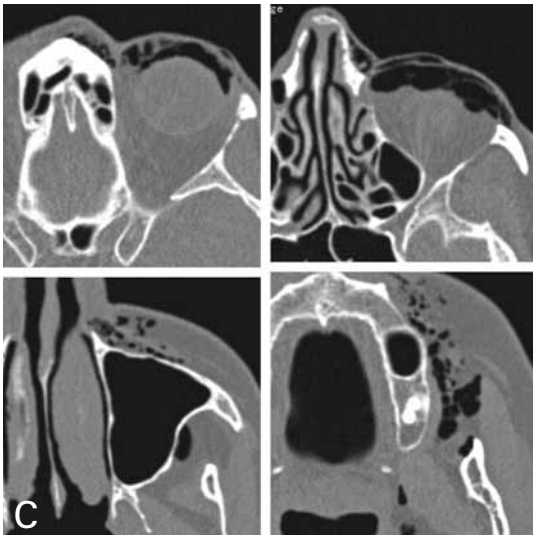
IMAGES IN CLINICAL RADIOLOGY





Iatrogenic facial subcutaneous emphysema after endodontic treatment

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A 74-year-old woman was referred to the ophthalmologic department by her dentist, for an acute left facial swelling after extraction of the left higher canine (tooth n° 23).

Patient presented left superior and inferior palpebral oedema extending to left periorbital subcutaneous tissues (Fig. A – CT surface rendering). The skin appeared normal without any erythema and palpation revealed typical subcutaneous gaseous crepitations. Dysphagia and dyspnea were absent. Complete extensive ophthalmologic examination was also normal.

Unenhanced facial CT was performed and revealed diffuse left facial subcutaneous emphysema involving both left eyelids, the left malar Bichat fat and left peribuccal subcutaneous fat but also the left infratemporal, pterygomandibular and parapharyngeal space**s** (Fig. B – coronal views and Fig. C – axial views). No facial sinuses anomaly or bone interruption was observed on CT series, even in the left superior alveolar bones. These findings associated with recent dental extraction history allowed to diagnose iatrogenic left facial subcutaneous emphysema, caused by a high-speed dental hand-piece use.

Treatment consisted on short oral corticotherapy and antibiotherapy (amoxycillin/clavulanic acid).

Comment

Iatrogenic subcutaneous emphysema in the head and neck region may arise after various interventions, including anesthesia, maxillofacial procedures, head–neck surgery and, less commonly, dental surgery involving extraction, implants or other procedures. During dental treatment, the use of compressed air to dry the root canal (with air-cooled high-speed dental hand-pieces) occasionally let the air penetrate soft tissues, dissecting periodontal ligament and gingival tissue, leading to subcutaneous emphysema. Pneumothorax, pneumomediastinum or even pneumoperitoneum can be observed because of the relationship between the cervical prevertebral space and the mediastinum. Life-threatening or even fatal complications can exceptionally occur due to venous (pulmonary) air embolism or paradoxal arterial systemic air embolism.

After complicated dental surgery, air spreading occurs rapidly, within seconds to minutes. Patient senses immediate discomfort or pain in the affected area. Subcutaneous emphysema usually resorbs spontaneously within few days. Main complication is subcutaneous tissues infection due to oral flora.

Main differential diagnosis of facial swelling after medical procedures is hematoma, allergic reaction or angioedema, but subcutaneous crepitations palpation leads to correct diagnose. CT-scan is recommended to confirm and determine the extent of subcutaneous emphysema.

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