CASE REPORT

An unusual case of surgical emphysema

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Case report

A 40-year-old lady presented to our accident and emergency department, 24 h after sustaining a laceration to her left elbow on falling in a local car park. She applied a bandage to the area after the injury and subsequently developed swelling of the left hand and forearm over the next day. Her arm was not immobilised and she had been using it normally. On examination, there was a small abrasion to the left elbow (Fig. 1) and surgical emphysema was noted in the left arm and hand. All of her vital signs were normal. X-rays of her left elbow showed extensive surgical emphysema (Fig. 2). There was no evidence of a pneumothorax on chest X-ray (Fig. 3). Importantly, there was no

Figure 1 Left elbow abrasion.

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microbiological evidence of gas-forming organisms. A dressing was applied and her arm was put into a sling. On review two days later, her signs had started to recede.

Discussion

The history suggests that the initial application of a bandage and subsequent mobilisation created a ‘ball-valve’ effect at the elbow, hence resulting in extensive surgical emphysema throughout the patient’s left arm.

Extensive review of the literature shows that a mechanism of injury like this, with resultant surgical emphysema, has not been described before. A previous report has identified similar clinical and radiological signs in a 13-year-old boy, who presented with a small puncture wound to the forearm and extensive surgical emphysema of the entire upper limb and chest wall. He had created the puncture wound with a safety pin and had injected air into the tissues with a syringe.¹ Many other cases of surgical

Figure 2 Anteroposterior and lateral X-rays of the left elbow showing surgical emphysema.

Figure 3 Chest X-ray showing surgical emphysema.
Emphysema have occurred post dental surgery with high-powered drills. A thorough history and examination is essential in such cases, and appropriate microbiological investigations are necessary if any signs of infection are present. Any infection should be treated via local antibiotic guidelines. Dressings and immobilisation should be applied to prevent a ‘ball-valve’ mechanism from occurring, especially around a hinge joint like the elbow. It is also important to exclude a pneumothorax if there are any chest signs.

Reference