EMERGENCY CASEBOOK

Case of the month: "Bugs are eating my soul" – sternal abscess, osteomyelitis, and mediastinitis complicating a closed sternal fracture

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Wound complications of closed sternal fracture are rare, but may have serious consequences if not effectively managed. We report a case of a patient who presented to the emergency department with a sternal abscess, osteomyelitis, and mediastinitis complicating a closed sternal fracture. It is hypothesised that in our patient bacteraemia post intravenous drug use resulted in seeding of the haematoma with *Staphylococcus aureus*. Early diagnosis and a multidisciplinary team effort were important in ensuring a favourable outcome.

A 30 year old female presented to the emergency department (ED) complaining that bugs were eating her soul. She was initially assessed at triage and a request was made for an emergency physician to clear her medically before review by the psychiatric team. She was known to suffer from schizophrenia but had stopped taking her olanzapine. There was a history of intravenous drug use and she was known to be hepatitis C positive. She described seeing and feeling bugs crawling over and eating her body, particularly over her chest which was causing her pain. There was no history of chest trauma. On initial examination she was agitated and had a pulse of 104, blood pressure of 116/64, and a temperature of 36.7°C. Examination of the chest revealed a large, warm, tender, erythematous mass overlying much of the sternum. The mass was not obviously fluctuant and there was no evidence of recent trauma or wounds. The rest of the examination was unremarkable. Laboratory investigations showed a CRP of 296 and WCC of 16.7. A chest x ray revealed a proximal sternal fracture and a diagnosis of cellulitis with sternal abscess was made.

Over the next few hours the patient became more unwell and her temperature spiked at 38.7°C. She was referred to the infectious diseases team who commenced broad spectrum antibiotics. Later that evening she was taken to theatre for wound exploration by plastic surgeons who drained a large sternal abscess. Computerised tomography of the chest post-operatively revealed air in the upper mediastinum extending from the aortic arch to the great vessels within the neck (fig 1). Abnormal soft tissue was noted behind the manubrium and sternum within which there were small gas bubbles. No definite collection was identifiable. The findings were consistent with severe mediastinitis and there were also features suggesting osteomyelitis of the sternum at the level of the fracture. Cultures later isolated methicillin sensitive *Staphylococcus aureus*. Virological studies confirmed the hepatitis C status and also revealed previous hepatitis B infection. Treatment was continued with a prolonged course of intravenous antibiotics, but no further surgical intervention was needed.

DISCUSSION

This case highlights the importance of a thorough medical evaluation of all patients attending the emergency

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department, even when the cause of the presentation is thought to be psychiatric in aetiology. Medical causes of agitation and psychosis are numerous and can have serious adverse consequences if not addressed.

Although rare, this case illustrates a serious complication of a closed sternal fracture. Osteomyelitis, sternal abscesses, and mediastinitis have been previously reported in the literature after blunt trauma or cardiopulmonary resuscitation.^{1–4} Cuschieri *et al*¹ identified the presence of haematoma, intravenous drug use, and a source of staphylococcal infection as risk factors for developing a post-traumatic mediastinal abscess. In our patient bacteraemia post intravenous drug use was thought to be the most likely cause of the *S aureus* seeding to a haematoma at the site of the sternal fracture. It is also important to remember that immunocompromised patients can present atypically and with unusual pathology. They also have the potential to deteriorate rapidly. In our patient a subsequent HIV test was negative.

Early diagnosis, surgical debridement, appropriate antibiotic therapy, and psychiatric evaluation were vital in achieving a successful outcome in our patient. This was facilitated by the collaboration of a number of different specialities.

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Informed consent was obtained for publication of the person's details in this report

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Figure 1 Postoperative CT scan of the chest.

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IMAGES IN EMERGENCY MEDICINE

Cutaneous myiasis of the eyelid masquerading as periorbital cellulitis

Figure 1 Recently extracted parasite (foreground) and host (background).

A 49 year old man was referred to the internal medicine service at St Joseph's Hospital in Hamilton, Ontario, Canada. The patient had a six day history of pain and redness of his right lower eyelid, which started following a puncture wound sustained while welding. His only recent travel was a hunting trip to Northern Ontario. There was

right eye periorbital redness and swelling, and there was a small fluctuant lesion on the lower eyelid. On close examination of the lesion, movement beneath the skin was observed. At this time the diagnosis of cutaneous myiasis was considered. The lesion was occluded with antibiotic ointment to encourage the parasite to emerge; within 30 minutes the larva was extracted with forceps. It was identified as an early instar larva of the genus *Cuterebra*, a North American botfly. The patient received antibiotics for secondary bacterial infection, and made a complete and uneventful recovery.

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