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Case Presentation and Initial Management

Ajjekay, a 3-year-old Domestic Shorthair, presented to our emergency service following a fall from the fourth floor, which resulted in thoracic and pelvic injuries.

An initial ultrasound also revealed pulmonary contusions.

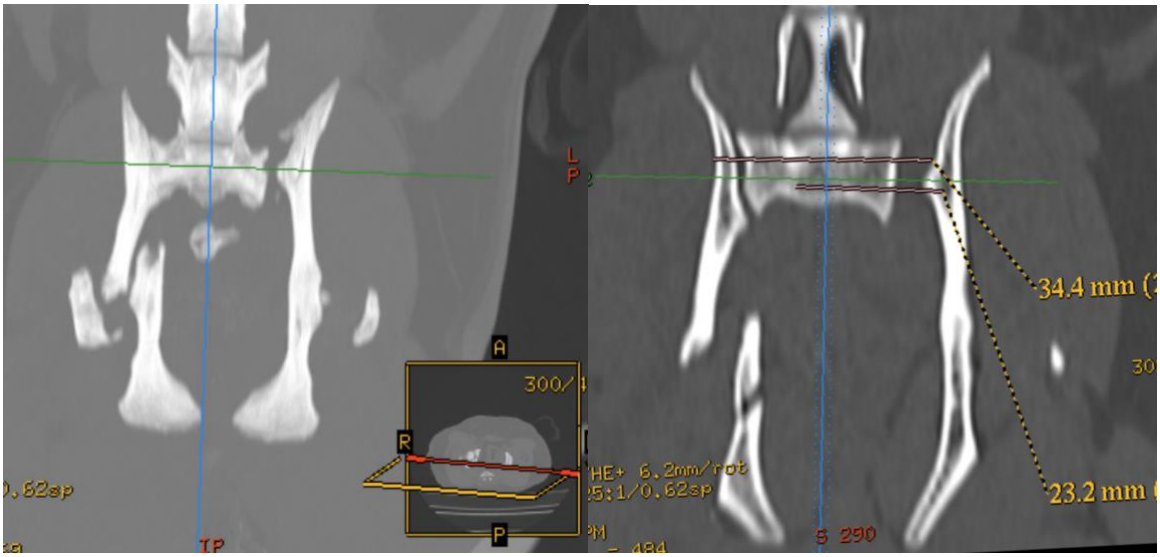
When patients sustain significant systemic trauma, immediate orthopaedic management may not be advisable. In Ajjekay's case, the thoracic injuries posed a more immediate threat than the pelvic trauma.

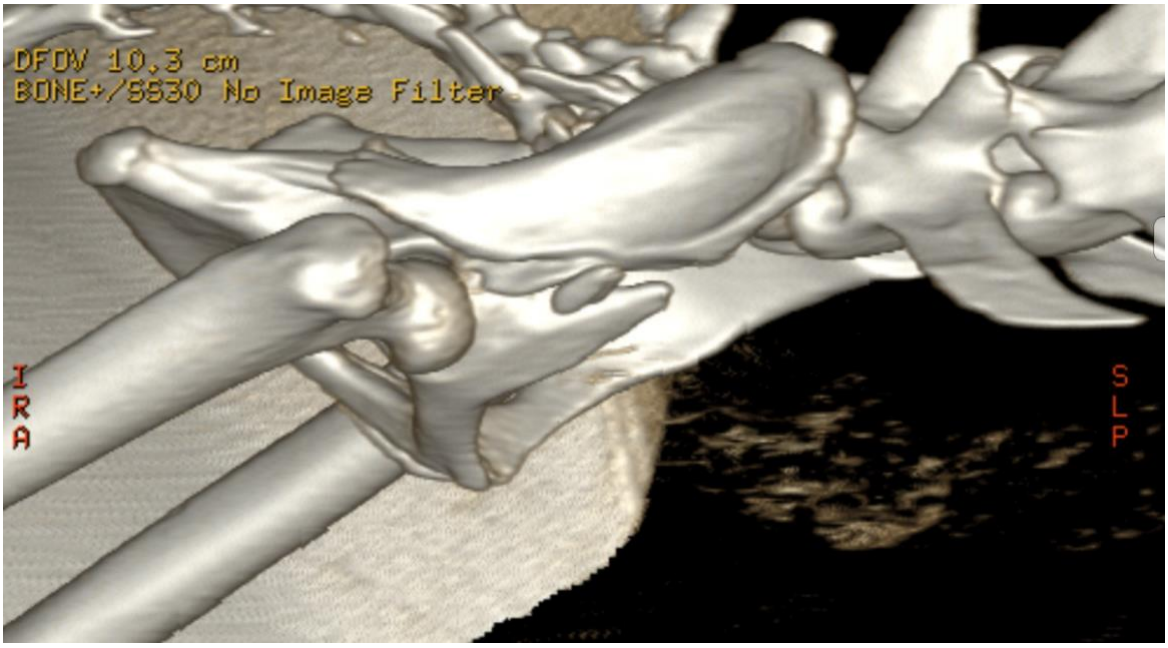
Administering extended anaesthesia too early, whether for imaging or surgery, can increase the risk of complications such as decompensation or the development of a systemic inflammatory response syndrome.

Therefore, stabilisation was our priority as we focused on shock management through fluid management and oxygen therapy.

Further diagnostics following stabilisation

The next day, a CT scan was performed to evaluate the extent of the pelvic injuries. The imaging revealed a comminuted fracture of the right ilium.





Before Repair CT images of the Fracture Pelvic Bone

CT proved invaluable for surgical planning, as the fracture was located quite caudally, raising the possibility of extension into the acetabulum—a region challenging to evaluate with radiographs. Reconstruction of the acetabular medial wall or dorsal rim, if required, would significantly increase the complexity of the surgery and alter the approach.

CT also allowed us to determine the optimal placement of bone screws for stabilisation. While radiographs can depict fractures, long transverse fractures like these can make precise implant positioning challenging.

Fortunately, Ajjekay's right pelvic fracture did not involve the joint, which was favourable.

On the left side, however, imaging showed a sacral wing fracture with ilium displacement. Additionally, a caudal tail fracture or displacement was observed.

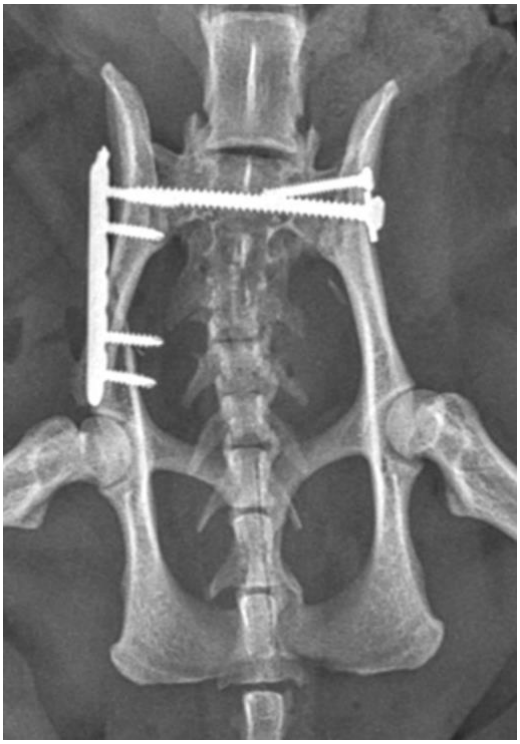
Surgical Management

We performed surgery two days after admission. This timing allowed sufficient stabilisation without the onset of extensive fibrosis or early healing that might complicate pelvic repair. Pelvic disruptions often risk the narrowing of the pelvic canal, which can lead to chronic constipation or obstipation. Thus, we aimed to repair the fractures while the segments remained adequately mobile.

In this case, we utilised intraoperative fluoroscopy, which provides real-time video radiographs, enabling minimally invasive stabilisation of the sacroiliac fracture luxations.

We first stabilised the left sacroiliac area to achieve a relatively anatomic reduction, indirectly aligning the right iliac fracture. Using fluoroscopy, we placed a trans-sacral screw with a washer and added a smaller anti-rotational screw into the left iliac wing.

Our focus on the right side was less on achieving anatomic alignment and more on ensuring stability due to its role in weight-bearing. We employed a locking plate with two screws placed cranially and two caudally. During the procedure, we confirmed adequate pelvic canal width via rectal examination. Given the lack of dorsal bone over the acetabulum, the plate was positioned ventrally to optimise its purchase. Preoperative CT confirmed an intact dorsal acetabular bone.



Radiograph Post Pelvic Fracture Repair

Outcome and Recovery

Ajjekay's recovery was excellent. There were no primary neurological injuries; we could reduce and stabilise the fragments without further injury. Anal tone and urination remained normal, and within a short period, Ajjekay was able to ambulate comfortably with good function in the hind limbs. This outcome was particularly gratifying, as pelvic trauma cases can be challenging.

This case reinforces the importance of thorough preoperative planning and appropriate surgical timing in complex pelvic trauma. The combination of detailed CT imaging for planning and intraoperative fluoroscopy for precise implant placement proved crucial to the successful outcome of this challenging case.