

Management of a complicated fracture by coxo-femoral disarticulation in a domestic short hair cat

K. Ravikumar^{1*}, G. Raja Murugan² and P. Sidder³

¹Veterinary Dispensary, Devakottai, Sivagangai- 630 302, Tamil Nadu, India; ²Veterinary Dispensary, Kanniappapillaipatti, Theni- 625 512, Tamil Nadu, India; ³Veterinary Dispensary, Keelasevalpatti, Sivagangai- 630 205, Tamil Nadu, India

Abstract

A two-year-old tom cat was presented with a history of road accident that resulted in sudden onset of non-weight-bearing lameness on the right hind limb. Upon physical examination, fractures on the right femur and tibia were revealed and found to lost its functional status. Amputation was performed by coxo-femoral disarticulation, and this surgery resulted in excellent resolution of the clinical signs.

Keywords: Amputation, Cat, Coxo-femoral disarticulation, Road accident

Highlights

- Road traffic accidents (RTAs) are a leading cause of death and injury in cats.
- Cats that survive an RTA may sustain serious impairments and may require extensive veterinary care.
- Coxo-femoral disarticulation technique offers better cosmesis and postoperative healing.
- Amputations normally have a positive prognosis, but a higher body condition score (BCS) has a negative correlation with the quality of life.

Road traffic accidents (RTAs) are a leading cause of death and injury in cats. A variety of factors influence the cat's risk of a road traffic accident. The majority of studies showed that cats aged 7 months to 2 years have the highest risk (Rochlitz, 2003). Spinal damage, abdominal injuries, and more injuries are linked to an increased risk of death. Cats that survive an RTA may sustain serious impairments, such as skeletal injuries or neurological deficits, and may require extensive veterinary care (Rochlitz, 2004a; 2004b). This extended patient care report will focus on the key interventions carried out on a tom cat that met with a road accident and lost the functional status of the right hind limb.

A two-year-old, intact domestic short hair tom cat was brought to the clinic after a road

accident with a history of non-weight-bearing lameness on the right hind limb and anorectic for the last two days. Physical examination revealed pink and moist mucous membrane, rectal temperature of 100.3°F, heart rate of 205 beats per minute, breathing rate of 41 beats per minute, and dehydration status of 5%. Auscultation of the chest revealed no abnormalities. The cat was dragging its right hind limb, with variable degrees of skin and subcutaneous tissue loss. Multiple complex fractures in the right femur and tibia were noticed, along with seropurulent discharge. Both the conscious proprioception and deep pain responses were negative. The limb had completely lost its functional status. To save the animal, amputation of the damaged limb was proposed. Venous blood was collected, and

*Corresponding Author, E-mail: kavinlkk@gmail.com

the estimated haematology and serum biochemistry values were within the clinical range except for a mildly elevated leucocyte count.

The cat was sedated with xylazine @ 1 mg/kg and buprenorphine @ 0.02 mg/kg, IM as cocktail injection. Anaesthesia was induced with propofol and maintained with 2 per cent isoflurane inhalant agent with oxygen supply. The surgical site was prepared aseptically. Skin incision was made around at the level of the middle third of the femur. On the medial side, the femoral triangle was opened by incising between the pectineus and caudal belly of the sartorius muscle. The deep femoral artery and vein were ligated. Approximately 2 cm from the inguinal crease, the muscles were transacted. Joint capsule was incised, and ligament of the head of the femur was severed from its insertion. Sciatic nerve was cut distal to its muscular branches. All the other muscles were severed. Rectus femoris muscle was elevated, and the right hind limb was removed. Joint capsule and muscles along with fascia were closed separately with PGA 2-0. Subcutaneous tissue was closed by interrupted suture pattern. Skin was closed with polyamide (monofilament) 2-0 by simple interrupted suture pattern (Fig. 1).

The cat recovered completely 10 minutes after surgery. The cat was hypothermic (95.5°F) postoperatively, and passive and active heating assistance was employed for faster recovery. Suspension meloxicam (1.5 mg/mL) @ 0.2 mg/kg, once daily for four days and amoxycillin (250 mg/5mL) @ 20 mg/kg twice daily for seven days was prescribed orally. Buprenorphine (0.3 mg/mL) was administered submucosally every six hours for three days. A highly palatable recovery diet was suggested to improve spontaneous food intake and fasten recovery. The wound was

dressed on every alternate day, and the sutures were removed on the 10th day. The cat recovered completely after three weeks, and no postoperative complications were observed (Fig. 2 & 3).

Complete orthopaedic and neurological evaluations are required before focusing on the amputation procedure. Animals undergoing hind limb amputation must adjust themselves by increasing the tarsal range of motion in the contralateral limb, combined with enhanced cervicothoracic and thoracolumbar vertebral range of motion (Hog *et al.*, 2013). Palliative salvage surgeries such as pelvic limb amputations are performed for end-stage conditions such as complicated fractures, appendicular neoplasia and neuropathies, and chronic non-healing wounds. There are different types of amputation techniques in small animals including mid-femoral amputation, coxo-femoral disarticulation and hemipelvectomy. In this report, amputation by coxo-femoral disarticulation was done in order to prevent delayed muscle atrophy and pressure sores. When compared to the mid-femoral method, this approach offers better cosmesis and postoperative healing (Howard *et al.*, 2021). It is critical to communicate to owners that, although amputations normally have a positive prognosis, a higher body condition score has a negative correlation with the quality of life (Dickerson *et al.*, 2015).

Conflict of interest: Authors have no conflict of interest in this study.

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Coxo-femoral disarticulation in a cat



Fig. 1. Immediate postoperative picture



Fig. 2



Fig.3

Fig. 2 & 3. Postoperative recovery picture on day 10

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