AMPUTATION OF HIND LEG IN BLACK BENGAL GOAT – A CASE REPORT

Pal SK¹, Baral S², Chakraborty S³*, Haldar A³
1. Research Associate, ICAR, Lembucherra, Tripura, India
2. SRF, ICAR, Lembucherra, India.
3. Senior Scientist, ICAR, Lembucherra, India.

Correspondence
Dr. Sandip Chakraborty. ICAR, Lembucherra, India.
Email: sandipc_85@yahoo.com


ABSTRACT

A case of complicated fracture of hind leg in a Black Bengal goat and its successful surgical removal had been recorded. The aim of amputation of the hind leg was to save the life of the valuable animal which was maintained for research purpose and was suffering from compound fracture followed by severe necrosis and gangrene even after repeated treatment. The goat was subjected to anterior epidural anaesthesia and the amputation was performed successfully. The goat completely recovered within one month after the amputation.

Key words: Amputation, Black Bengal, goat

INTRODUCTION

Amputation of leg is rare in veterinary practice. In contrast, it is very common in medical science. The cost involvement for amputation in animals is apparently higher than the cost of the animal. However, amputation sometimes becomes very much essential for saving the life under certain circumstances like conservation of animal and other purposes. Considering fracture management in alpacas and llamas, Newman and Anderson suggested that when irreversible damage to the neurovascular bundle has occurred, limb amputation, with or without a prosthetic device may be an alternative to euthanizing the patient. Amputation of limb is indicated when the lower part of the limb is affected with conditions like necrosis, gangrene, extensive nerve injury of the limb, malignant neoplasm, frost bite and some incurable vascular diseases that would not respond to local treatment¹. The present report deals with a case of complicated fracture of hind leg of a doe and its successful surgical removal.

CASE REPORT

A. General information
The left hind leg of a Black Bengal doe (Goat No: G13, Indian council of Agricultural Research Goat Farm, Tripura, India) aged 11 months 15 days having 11.50 kg body weight was injured during the time of fighting with another doe. There was swelling and

Amputation of hind leg inflammation below the hock joint at the lower third of the metatarsal bone. The animal was treated with injection meloxicam (Melonex, Intas Pharmaceuticals Limited) @ 1 ml/day and neurotropic vitamin injection (Neuroxin-12™ V-Vet, Zydus Animal Health Limited) @ 3ml/day intramuscularly for three days. Animal showed improvement but few days later animal was again injured and developed a compound fracture in the same part of the leg. Again the animal was treated with antibiotic and analgesic and the fracture was immobilized using bamboo splints. After few days, it was observed that the fracture became complicated and the leg region below the fractured part had lost sensitivity, and developed severe necrosis and gangrene. However, the clinical parameters and feed intake were normal. It was decided to amputate the leg just below the hock joint to avoid spreading of necrosis and gangrene in the healthy tissue.

B. Preoperative preparations
The doe was fasted overnight to prevent regurgitation during anesthesia. 5 ml of 2% lignocaine hydrochloride (Xylocaine® 2%, Astrazeneca Pharma India Limited) solution was introduced into the epidural space between the last lumber and the first sacrum (anterior epidural) to produce local analgesia in both the hind legs. The doe was confined in lateral recumbency on the operation table after the anesthesia keeping the affected leg downward for few minutes and than the affected leg was kept upward during the whole operation. The operative area was prepared by shaving the hairs followed by washing with soap and water to remove all dirt and all the transient bacteria. Thereafter, the skin was allowed to dry. The cotton soaked with 70% alcohol was applied on the site of operation to destroy all the microorganisms, if any. Tincture iodine was painted on the operation site. Finally, a tourniquet was applied on the leg above the site of incision (just above the hock joint) to reduce blood loss during surgery. A slow intravenous drip of normal saline was provided to the doe during the time of operation.

C. Operation procedure
Two elliptical or V-shaped incisions were made through the skin 4 cm below the hock joint on both medial and lateral aspects of the leg with a sharp and sterilized BP -blade at the point of amputation to get sufficient skin flap for suture. After reflecting the skin flap, all arteries and veins were ligated using catgut to prevent bleeding. The skin incisions were continued through the muscle tissue. The muscle bundles were dissected away from the bone above the point where the bone was to be cut. The affected bone was cut by using a sterilized bone saw. Antibiotic powder (Intamox®, Intas Pharmaceuticals Limited) was spread on the wound to prevent bacterial multiplication. Then the ends of the muscle bundles were anastomosed by simple continuous suture using chromic catgut number 2-0 (Ethicon®, Johnson and Johnson). The edges of skin flaps were brought in apposition and edges were sutured finally with horizontal mattress sutures using nylon thread. The incision line was painted with tincture iodine. Finally, the sutured area was covered by using gauge.

D. Postoperative care
The animal was treated intramuscularly with antibiotics amoxicillin and cloxacillin (Intamox, Intas Pharmaceuticals Limited) @ 10mg/kg b.wt./day for 5 days. An antihistamine, chlorpheneramine maleate (Anistamin®, Intas Pharmaceuticals Limited)
Amputation of hind leg of the doe was performed successfully. The recovery after amputation was also satisfactory within one month.

DISCUSSION

Amputation of lower extremity is one of the oldest known surgically performed procedure as described by Murdoch et al.². In the present study, amputation of the left hind leg of the Black Bengal doe below the hock joint and subsequently saving the particular animal was very much essential as because the same doe was maintained exclusively for research purpose at farm. In accordance with Kumar³, the doe was subjected to anterior epidural (lumbosacral) anesthesia and than the amputation was performed successfully. Severance of blood vessels and lack of blood supply to depended portion might have lead to necrosis below the hock joint that demanded amputation of foreleg of a kid as reported recently by Satyanarayana and Mallika ⁴. Partial foot amputation was found to be helpful in the management of malignant tumors of canine foot ⁵. Foreleg amputation in some rare species like red deer was also reported in literature ⁶. In case of human, amputation is still considered as a failure of treatment. Amputations are traumatic experiences that reduce the quality of life for patients and is also expensive. A typical prosthetic limb costs in the range of $10,000-15,000 according

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Figure 1. Before amputation and after amputation.

<table>
<thead>
<tr>
<th>Before amputation</th>
<th>After amputation</th>
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<tr>
<td>(Complicated fracture of metatarsal bone)</td>
<td>(After amputation of the affected limb)</td>
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</table>

E. Results

The amputation of hind leg of the doe was performed successfully. The recovery after amputation was also satisfactory within one month.
to the American Diabetic Association. Preventing amputations is a critical task. But it is better not to consider it as a failure of treatment because it can save the life of the patient suffering from severe trauma, vascular disease and tumors.

ACKNOWLEDGEMENT

The authors are thankful to the Director of ICAR Research Complex for North Eastern Hill Region, Barapani, Meghalaya, India and the Joint Director of ICAR Research Complex Tripura centre, Lembucherra, Tripura, India for providing necessary facilities.

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