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Success Story

Management of compound fracture in long bone with economical ESF in Goats

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Fracture of long bones is one of the most common problems among orthopaedic condition encountered in goats and other small ruminants. It may treat either conservative management or surgical interference (Aithal *et al.*, 1998). In compound fracture conservative treatment is not applicable, so required surgical intervention. Most common constraints in management of fractures of these animals are the cost of the implants and postoperative management. Therefore, economical External Skeletal Fixation is one of most attractive choice as it is less invasive, requiring minimal equipment (kumar *et al.*, 2021) and relatively easy to perform. Economical external skeletal fixation device can be used in small ruminants as a successfully alternative to internal fixation. It is an external coaptation technique used to stabilize bone fragments or joints with percutaneous wires or pins held together by an external frame. Epoxy compound and acrylic material used rather than clamps and metallic connecting rods. Economical ESF device comes in less than 20% of the original price of the external skeletal fixator. So, economical skeletal fixations have emerged as boon to both farmer & ruminant veterinary surgery. Present study conducted to evaluate of epoxy ESF for the management of compound fractures of long bones in goats. Under university project on management of long bone fracture in goats with Economical External Fixators **was** performed in six clinical cases with objective to evaluate epoxy & acrylic ESF for the management of compound fractures in small ruminant.

All animals were sedated with inj. xylazine at dose rate of 0.05 mg/ kg body weight intramuscularly. Anesthesia was maintained with ketamine as per requirement. The fracture reduction and surgical procedure was performed in lateral recumbency in all the cases. Fracture fragments were reduced to their normal anatomical positions by application of traction and counter traction. The pins were drilled into the two cortices of the bone by using a low speed, high torque power drill from medial aspect to lateral aspect of bone after giving a small stab incision to the skin at their point of entry of pin. The most proximal and distal pins were drilled first then followed by others.

After pins insertion pins were bends & make a frame. Pins were supported with epoxy material. Post operatively all animals were treated with Ceftrixone in combination with tazobactum (Inj. Intacef-tazo) at the dose rate of 10 mg/kg body weight intramuscularly for 7-10 day depending on the healing of wound. The therapy was also adjunct with Meloxicam along with paracetamol (Inj. Melonex plus) at the dose rate 1ml/10kg body weight for 2-3 day as per required & regular dressing up to healing of wound. Economical external fixation device was well tolerated by all animals. However, pins tract infection was observed nearly all case, but they managed topical application of antiseptic and systemic application of antibiotic. All animal recovered within 45 days. So, economical external fixation device is effective in management of compound fracture in small ruminant. It was popularized by training of field veterinarian. Farmer also aware regarding economical external fixation device that it is not must costly and may save the life animals.

Clinical cases of compound fracture in Goats

Clinical cases of compound fracture

Medial insertion of intramedullary pins

Lateral insertion of intramedullary pins

Remodeling the frame

Completion of frame

Weight bearing by animals