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Plating a Compound Fracture of the Right Metatarsus in the Equine

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On April 5, 1958, the patient’s temperature was 102.6°F. Bowel movements were normal and the appetite was returning to normal. The sutures were in place, edema was evident at the incision site, and abdominal pain was manifested by the reluctance of the mare to move. The patient’s hooves were soaked in cold water for 20 minutes (repeated on April 7 for a total of two treatments) and 20 cc. of A-H solution were given subcutaneously to avert a secondary laminitis.

The normal electrolytes and 5 per cent dextrose, as well as 500 mgs. Terramycin, were administered again and repeated at 12 hour intervals for a total of four treatments. Ten cc. of B-Sol were administered intramuscularly. Five cc. of Combiotic were given intramuscularly and repeated every 24 hours until the temperature was normal. The uterus was palpated per vaginum and found to be distended with a thick bloody exudate. Five hundred mgs. of Polyotic were infused into the uterus. Sulfathiazole ointment was liberally applied to the hot, inflamed and edematous birth canal.

On April 6, 1958, the mare’s temperature was 101.6°F. and she appeared more alert than the day before. She readily accepted freshly-pulled green grass and responded to brushing. Upon palpation the uterus was palpated per vaginum and found to be distented with a thick bloody exudate. Five hundred mgs. of Polyotic were infused into the uterus. Two Tetracycline bolets were placed in the uterus. The inflammation and edema of the birth canal were greatly reduced and sulfathiazole ointment was applied to this area. Edema of the underline was evident, the sutures were still in place and no symptoms of laminitis were noticed.

On April 7, 1958, the mare’s temperature was 101.5°F., appetite was nearly normal, and bowel movements were normal. The mare was turned loose in a bluegrass pasture for approximately 6 hours daily to provide ample exercise and to help reduce the edematous swelling of the underline.

On April 14, 1958, some of the skin sutures were removed. The incision remained in apposition and an area of drainage along the ventral border of the incision was noted.

On April 16, 1958, the remaining sutures were removed and the patient was discharged from the clinic.

—James Maxted '59

2. Equitol, Allied Laboratories Inc., Indianapolis, Ind.; each 500 cc. contains chloral hydrate, 21.3 Gm., pentobarbitol, 48 Gm., and magnesium sulfate, 10.6 Gm.
3. No. 3 Chromic cat gut, Jensen-Salsbery Laboratories Inc., Kansas City, Mo.
4. No. 3 Permalon, Diamond Laboratories, Des Moines, Iowa., synthetic suture material.
5. Tetanus antitoxin, Allied Lab. Inc., Indianapolis, Ind., 1500 units per vial, equine origin.
6. Combiotic, Corn States Lab., Omaha, Nebr.; each 2 cc. contains 400,000 units procaine penicillin G and 5 Gm. dihydrostreptomycin.
7. Normal electrolytes and 5% dextrose, Jen-Sal Lab. Inc., Kansas City, Mo.; each 1000 cc. contains meq. of: Na, 144.7, Ca, 4.93, K, 10.2, Mg, 3.2, Cl, 103.5, acetate, 48.4, bisulfite, 19.2, and 5 Gm. dextrose.
8. Terramycin, Pfizer, New York, N. Y.; contained 500 mg. oxytetracycline.
10. B-Sol, Fort Dodge Lab., Ft. Dodge, Iowa; each cc. contains thiamine HC1, 10 mg., riboflavin, 2 mg., panthenol, 50 mg., nicotinamide, 100 mg., and pyridoxine 2 mg.

5 Plating a Compound Fracture of the Right Metatarsus in the Equine. On February 7, a 1-year-old Shetland pony was admitted to the Stange Memorial Clinic with a history of being found in the pasture with a fractured leg.

Upon examination, the animal was found to have a compound fracture of the right metatarsus, the site of the fracture being approximately at the center of the shaft. The distal end of the proximal fragment was protruding through the skin at the medial side of the metatarsus. Radiographic examination showed
that the fracture was comminuted, with three small fragments loose in the tissues between the proximal and distal portions of the shaft. A Thomas splint was applied to the fractured leg and an elevator hoof of wood blocks was placed on the left rear hoof. The hair was clipped and a bichloride of mercury pack (1:3000) was placed over the leg from the hock to the hoof. The patient was given a tranquilizer and placed in a stall.

The following day the animal was anesthetized with Equitol® (Pitman-Moore) and placed on the operating table. The pack and splint were removed from the leg and a routine surgical preparation performed. A 6-inch incision was made on the medial side of the metatarsus centered over the site of the fracture. The fracture was reduced, and two of the loose fragments of bone were removed. A stainless steel plate, 6 inches long, was used to keep the proximal-distal portions of the shaft in alignment. Three stainless steel screws were used in the proximal end of the plate and two in the distal end of the plate to anchor it to the metatarsus. The subcutis and the skin were sutured in separate layers. A bandage was placed over the area and the Thomas splint was applied to limit movement of the leg. A Plaster of Paris cast was placed on the leg from the hock to the sole, and this cast was taped to the Thomas splint. On the 4th day following the operation, the Thomas splint was removed because of pressure necrosis and decubital ulcers caused by the splint. A window was cut in the plaster cast over the site of the incision to facilitate drainage. The cast was replaced by another on the 6th day, and again a window was cut in the cast. A pressure pack was applied over the window to attempt to reduce the edema and the granulations protruding through the window. From the 1st through the 8th postoperative day, the animal received 1,500,000 units of aqueous penicillin daily, intramuscularly. This was discontinued after the 8th day. The wound was dressed.

Fig. 1. Radiograph showing comminuted fracture of right metatarsus.

Fig. 2. Radiograph showing shaft held in alignment with a 6-inch stainless steel plate.
daily for 16 days. Sulfanilamide powder was dusted on the incision daily through the window. No other medicinal treatment was employed.

X-rays of the leg were taken weekly to follow the course of healing.

On the 17th postoperative day the patient was given Sparine® (Wyeth) and a new Plaster of Paris cast was applied. No window was placed in this cast although the wound was still draining. On the 28th day the cast was split lengthwise and removed. The leg showed no anterior-posterior motion but some lateral motion was present. There was a small abscess on the lateral side of the leg. The medial side of the leg and the suture line were healed. The old cast was replaced and taped into place.

Three days later there was no lateral movement and radiographic examination showed the ends of the bone were in good apposition and a callus was forming. There was some necrosis around the screws due to electrolysis.

The cast was removed and not replaced on the 46th day. The patient’s progress was considered good although no attempt was made by the animal to use the leg.

The pony was discharged on March 30 with instructions to the owner to return in 30 days so that the plate could be removed.

The animal was returned to the clinic on May 8, 1958. On May 9, the animal was placed under surgical anesthesia with Equitol® (P-M) and the plate was removed. At this time it was found that a firm callus had almost entirely surrounded the plate, and that the callus had united the fractured ends of the bone so that when the plate and screws were removed very little motion could be detected at the site of the fracture. The incision made to remove the plate was closed, and a Plaster of Paris cast placed on the leg for 10 days to limit any motion and to aid healing.

—Paul Bessire '59

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