

7. Summary

This study was carried out on 140 horses of different sexes, ages and breeds which were admitted to the Equine Clinic at the Free University, Berlin between January 2000 and May 2004. A total of 158 phalangeal joints underwent successful fluoroscopic guided minimal invasive surgery using the mobile C-arm fluoroscope (Philips BV212 Rlease 4).

The indications in all horses were:

- 1-Surgical removal of isolated shadows (radiopaque bodies) from the region of the common digital extensor tendon insertion at the extensor process of the pedal bone (28 horses).
- 2- Surgical removal of isolated shadows (radiopaque bodies) from the dorsal aspect of the pastern (3 horses).
- 3-Surgical removal of isolated shadows (radiopaque bodies) from the dorsal or the palmar/plantar aspect of the fetlock joint (76 horses).
- 4-Surgical repair of intra-articular fractures associated with the phalangeal joints (25 horses).
- 5-Surgical managements of subchondral bone cysts (8 horses).

All personnel in the operating room wore standard radioprotective aprons and every one had a portable dosimeter. Each surgeon wore an additional ring dosimeter. At monthly intervals, the radiation doses were measured for every one in mSv and were very low and did not exceed the legal limits permitted in Germany.

From the technical point of view all the operations were easily performed and no intraoperative complications encountered.

In equine orthopedic surgery, minimal invasive techniques should be more applied to improve wound healing by a minimal access and consequently to shorten the convalescence period. Phalangeal joints are from the joints that can be successfully operated with the aid of fluoroscopic guided C-arm technique as a minimal invasive technique. The possibility now exists to operate these joints only under fluoroscopic control which constitutes a further step in the replacement of arthroscopy and arthrotomy techniques by fluoroscopy (especially in case of the small joints or in case of isolated shadows which located in the joint vicinity and are embedded or buried within the joint capsule, tendons or ligaments). The use of a combination of fluoroscopy and arthroscopy techniques is also possible.

Fluoroscopic guide C-arm technique is practical from the technical and cosmetic point of view. The technique is not sophisticated, quick, and easy to perform. Following fluoroscopic guided surgery the cosmetic appearance was improved and the convalescent time decreased.