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Short Communication

Long-Term Follow-Up Information of a Three-Tract Arthrodesis Technique for Treatment of Carpometacarpal Osteoarthritis

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ABSTRACT

Carpometacarpal osteoarthritis (CMC-OA) is a crippling lameness that has been treated successfully by arthrodesis with a technique using fanning of a drill bit. Our objective was to conduct a long-term retrospective study, based on a telephone survey of owners, of horse treated with a three-drill-tract arthrodesis technique. The three-drill-tract arthrodesis technique was used on nine limbs of six horses, and the subjective outcome was determined by questions regarding postoperative pain, return to use, and owner's subjective opinion regarding "soundness" and success of treatment. Follow-up time was 52.8 months (range, 31 to 59 months). Immediate postoperative lameness was mild in two horses, moderate in three horses, and severe in one horse, and never improved in three which did not return to exercise. Three owners considered the surgical treatment successful, which included one broodmare thought to be free of lameness and two riding horses that were markedly improved but had slight lameness after use. Three considered the treatment a failure with two being lamer than before treatment, one of which required euthanasia. In conclusion, this technique had a low number of horses that were considered "sound" and successful, and it resulted in increased lameness in some horses. This has clinical relevancy as there are no other reports on the success of the thee-drill-tract arthrodesis technique in clinical cases of CMC-OA. The three-drill-tract arthrodesis technique described in this article is not recommended for treatment of horses with CMC-OA.
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1. Introduction

Carpometacarpal (CMC) osteoarthritis (CMC-OA) in horses is a degenerative joint disease of the CMC joint that involves primarily, but not exclusively, the second metacarpal and/or second carpal bone (MC2/C2) articulation and is characterized by narrowing of the MC2 and/or C2 joint space and MC2 and/or C2 subchondral bone lysis, a swelling on the medial aspect of the carpus and lameness [1] (Fig. 1). Horses with untreated CMC-OA have a poor prognosis for athleticism and reduced life expectancy [1]. Treatment of CMC-OA by arthrodesis was first described [2] using a 3.2- or 4.5-mm drill bit and a fanning technique at three to five entry points. This technique has been shown to be successful with 83% of horses with CMC-OA returning to soundness, based on owner evaluations [2]. However, variability in the amount of fanning of the drill bit between surgeons, and, hence, variability in the quantity of cartilage removed by each surgeon were listed as potential limitations of the fanning technique. It was felt that a technique that produced a more standardized amount of damage to the articular cartilage and subchondral bone and that was less invasive and quicker would be a benefit [3]. A cadaver

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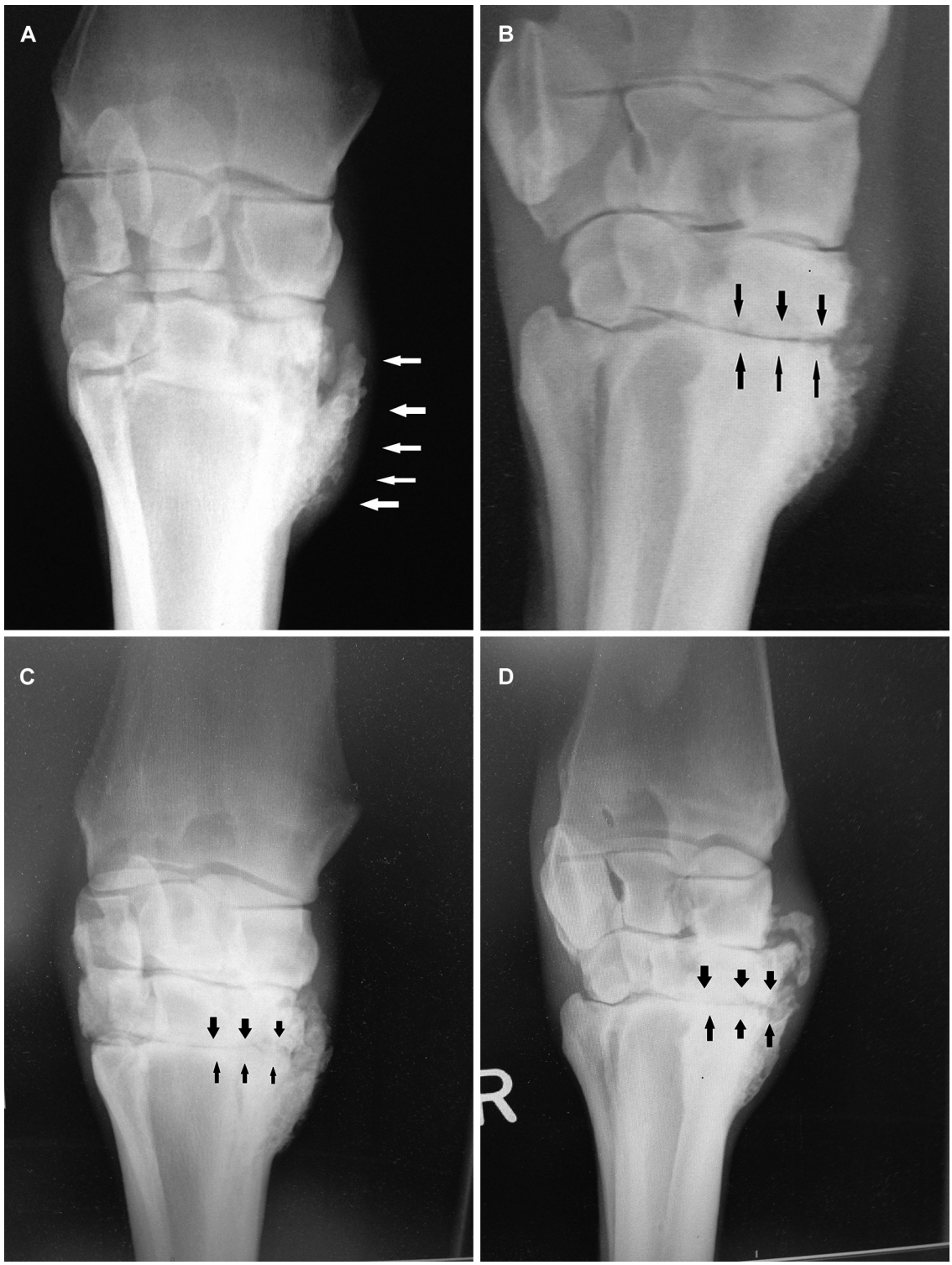

Fig. 1. Radiographs of horse F, which did not improve clinically after surgical treatment, 2 years after treatment but 23 months before its final evaluation via telephone follow-up. (A) Dorsopalmar view of the right carpus of horse F on presentation. Notice the extensive PNB formation medially (arrows) and difficulty observing the second metacarpal and/or second carpal articulation. (B) Dorsolateral–palmaromedial oblique view of the right carpus of horse F on presentation. Notice the proliferative new bone formation and the easily visible carpometacarpal joint space (arrows). (C) Dorsopalmar view of the right carpus of horse F 2 years after surgical treatment. Note that the carpometacarpal joint is still readily visible (arrows). (D) Dorsolateral–palmaromedial oblique view of the right carpus of horse F 2 years after surgical treatment. Note the extensive proliferative new bone formation extending to the middle carpal joint and the carpometacarpal joint which is clearly not fused (arrows).

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