CUNEIFORM ULNAR OSTEOTOMY FOR VALGUS DEFORMITY OF RADIUS AND ULNA IN A GREAT DANE PUP

S. Ravikumar, V. Mahesh and L. Ranganath
Department of Surgery and Radiology, Veterinary College, KVAFSU, Bangalore – 24.
[Received: 20.2.2014; Accepted: 06.6.2014]

A six month old Great Dane pup was presented to Veterinary College Hospital, KVAFSU, Bangalore with the history of valgus deformity of right forelimb since two months. Clinical examination revealed lateral deviation of right forelimb and improper weight bearing. Radiograph revealed retained endochondral cartilage in the ulnar metaphysis which resulted in valgus deformity. Hence it was decided for surgical correction. The forearm was prepared for aseptic surgery and the animal was positioned in lateral recumbency. Under general anaesthesia ulna was exposed and wedge ulnar ostectomy (1.5 cm) was performed at the maximum curvature of the ulna in order to alleviate restraining effect of ulna. The limb was immobilized with wooden splint bandage for a period of one month and regular surgical wound dressing. The posture and gait returned to normalcy after three months.
Keywords: Valgus; Osteotomy; Ulnar; Carpus.

Introduction

Carpus valgus is the deviation of carpal axis from a position parallel to the elbow to one angled abaxially. With continued radial growth, the radius begins to rotate externally, around the short ulna, resulting in external rotation of paw (Newton 1985). Valgus deformity of lower limb is due to either improperly managed cases of fracture or growth plate disorders. Newton *et al.* (1984) and Weigel (1987) recommended the technique of cuneiform osteotomy for the correction of such deformities.

History and Diagnosis

A six month old Great Dane pup was presented to Veterinary College Hospital, KVAFSU, Bangalore with the history of valgus deformity of right forelimb since two months. Clinical examination revealed lateral deviation of right forelimb and improper weight bearing on the same limb. Radiographic examination revealed healing fracture at distal epiphysis of radius with malunion which resulted in valgus deformity (Fig. 1) hence it was decided to surgical correction.

Fig. 1 healing fracture at distal epiphysis of radius with malunion

Fig. 2. Post operative radiograph showing the ulnar ostectomy

Surgical treatment

The dog was premedicated with Atropine Sulphate at the rate of 0.04 mg per kg body weight and Diazepam at the dose rate of 0.5 mg per kg body weight. Genaral anaesthesia was induced and maintained with 2.5% thiopentone sodium given to effect. The region from elbow to carpal joint was prepared for aseptic surgery and the animal was positioned in lateral recumbency. Ulna was exposed through lateral approach by separating all the underlying soft tissues. Ulnar ostectomy (1.5 cm block) was performed at the maximum curvature of the ulna in order to alleviate restrainig effect of ulna. Autogenous fat graft has been successfully used to prevent bony union following ulnar usteotomy. The incision was closed in a routine manner. Post operatively AC - Vet[a] (Ampicillin + Cloxacillin) @ 500 mg IV given for seven days and Melonex[b] (Meloxicam) @ 0.3 mg per kg SC, SID was administered for three days. Splint bandage was applied and regular surgical wound dressing was done for ten days. Surgical wound healed without any complications. The splint was maintained for about 45 days. The posture and gait returned to normalcy by about three months.

Discussion

Cuneiform (wedge) osteotomy provided wide flat surfaces for bony union and therefore significantly contributing to more fixation stability (Rudy 1971 and Egger 1993). The surgical approach adapted to the ulna was as described by Piemattei and Greedy (1979).

References

Egger, E. L (1993) fractures of radius and ulna. In : Slatter, D. (ed.) Text book of small animal surgery . vol. II. 2nd edn., W.B.Saunders, Philadelphia. P. 1736.

Newton , C. D., Nunamaker, D. M. and Prieur, W. D. (1984). Osteotomy. In: Manual of internal fixation in small animals (eds.) Brinker, W. O., Hohn, R.B. and Prienr, W.D., Newyork, Springer, Verlag, p. 255.

Newton , C. D. (1985). Radial and Ulnar osteotomy. In: Textbook of small animal orthopaedics. J. B. Lippincott, p. 533-544.

Piemattei, O. C. and Greedy, R. G. (1979). An atlas of surgical approach to the bone of the dog and cat. 2nd edn., W. B. Saunders. p. 106.

Rudy, R. L. (1971). *Vet. Clin. North. America*, **1**:549.

Weigel, J. P. (1987). *Vet. Clin. North Am. : Small Anim. Pract.*, **17**:905.

*****