Malunions

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A malunion is a healed fracture in which anatomical bone alignment was not achieved or maintained during healing. If the appendicular skeleton is affected there is usually an angular deformity. It is important to know the difference between varus, valgus, pronatus, and supinatus.

Introduction

1) Minor angular deformities- < 10% in any plane or 10% or less of the original length
2) Anything else is a major angular deformity. This usually results in functional impairment
3) Pelvis is very common site for malunions and can lead to narrowing of pelvic canal

Causes:

- Usually due to improper treatment of original fracture
- May be caused or further complicated by physeal fractures in young animals

Diagnosis

Take radiographs and determine extent of varus, valgus, rotational and length discrepancies:

a. Varus - deviation of the segment axis towards the median sagittal plane
b. Valgus - deviation of the segment axis away from the median sagittal plane
c. Procurvatus (cranial bowing) - deformity of sagittal plane
d. Recurvatus (caudal bowing) - deformity of sagittal plane
e. Pronatus (internal rotation) - deformity of the axial plane
f. Supinatus (external rotation) - deformity of the axial plane

Valgus deviation of the antebrachium

Treatment

A) Corrective osteotomy if they cause a functional problem
   a. Osteotomy and acute realignment
   b. Preoperative planning is mandatory
   c. Consider ring fixator for bone lengthening and angular corrections. Can help with stretching out muscles, vessels, nerves, and skin over time