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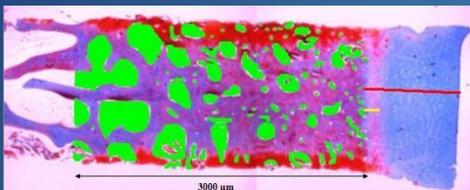
## Introduction

Osteoarticular pathologies in horses cause pain, handicaps and also economic losses particularly in race horses. Many of these pathologies are the result of lesions or inappropriate remodeling of osteochondral tissues.

## Material and Methods

Samples were taken from the interphalangeal joints of the four limbs of one warmblood horse aged of 1,5 year.

A squaring standardized was carried out using a graduated rubber band giving place to 9 intake points by articular surface. Osteocartilaginous samples, of a fixed diameter of 2,5 mm over a length of 8 mm, were taken at the distal articular surface of phalanx I, proximal and distal articular surfaces of phalanx II and articular surface of phalange III and navicular bone.



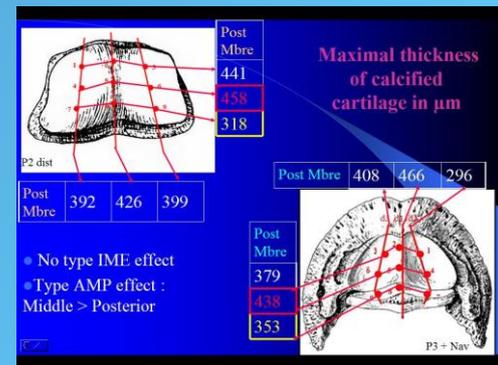
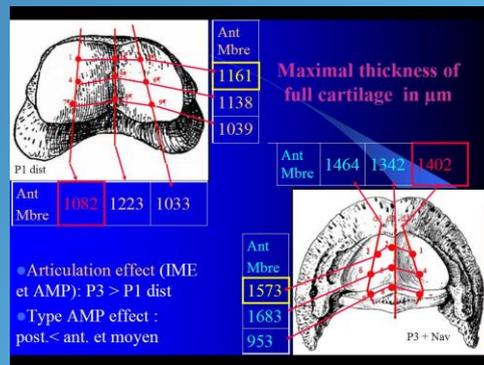
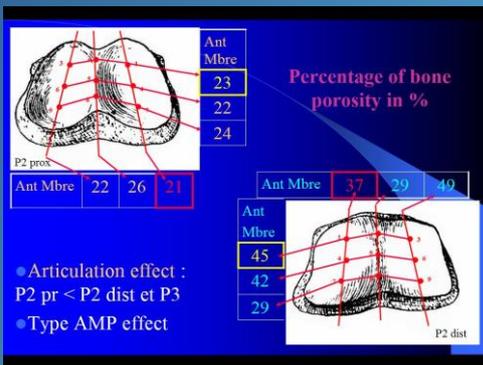
The samples were decalcified with commercial mixture of HCl and EDTA and then, stained with Toluidine Blue or Azan of Heidenhain.

An histomorphometric study was driven to estimate the **thickness of full cartilage**, the **maximal thickness of calcified cartilage** and the **percentage of bone porosity**.

Analysis of variance (ANOVA test) :

For each of the three variables, the effect of the following factors was studied: **member** (two levels: anterior and posterior), **joint** (four levels: P1 distal, PII proximal, PII distal, PIII and navicular bone), **site** (lateromedial: inner, middle, outer and front rear: dorsal, middle, caudal).

## Results



## Conclusions

Significant differences were observed for the three variables for the parameters joint and site which are related to different strains zones within and between joints. However, no significant effect was observed between fore and hind limbs which was surprising. It is well known that distribution of body weight and efforts during locomotion are quite different for hind and fore limbs.

This study permitted to lay down the base of subsequent studies which will concern a large number of horses of various morphologies, different ages, healthy or concerned by interphalangeal degenerative joint diseases.