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Agrupación Estratégica de Investigación del  
Campus Terra de la USC **Biorrecursos:  
Desarrollo y Producción Sostenible ‘BioReDes’**

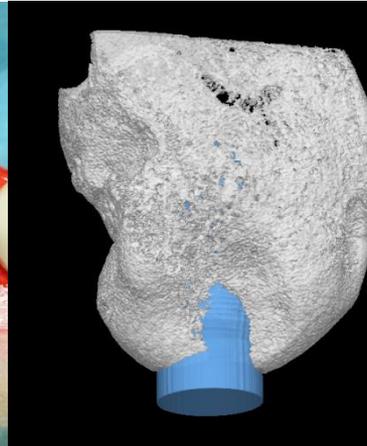
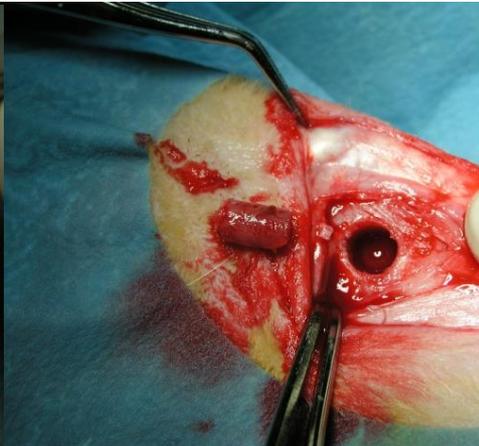
**Grupo de investigación:  
CIRUGÍA EXPERIMENTAL G1708  
“CIRUGIA, RADIOLOGIA Y  
ECOGRAFIA VETERINARIA”**

# CIRUGÍA EXPERIMENTAL G1708

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Valiño Cultelli, Maria Victoria

# CIRUGÍA EXPERIMENTAL G1708

Diagnóstico por Imagen  
Realización de Pruebas “in vivo”  
Laboratorio Investigación  
Actividad Asistencial



# ✓ Actividad clínica del servicio de DPI

## Fauna marina

## Fondos marinos (geología sedimentaria)

## Acuicultura

### Journal of Veterinary Diagnostic Investigation

<http://jvdi.sagepub.com/>

**Localized Pleural Mesothelioma Causing Cranial Vena Cava Syndrome in a Dog**  
Luciano Espino, Sonia Vazquez, Daniel Falde, Andres Barreiro, Natalia Miño and Ana Goicoa

*J Vet Diagn Invest* 2010; 22: 309  
DOI: 10.1177/1044563810362002B

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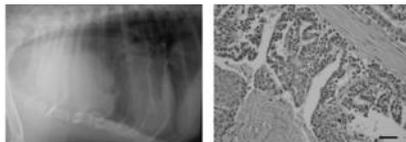
*J Vet Diagn Invest* 22(309-312) (2010)

#### Localized pleural mesothelioma causing cranial vena cava syndrome in a dog

Luciano Espino,<sup>1</sup> Sonia Vazquez,<sup>1</sup> Daniel Falde,<sup>1</sup> Andres Barreiro,<sup>1</sup> Natalia Miño,<sup>1</sup> Ana Goicoa<sup>1</sup>

**Abstract.** A 9-year-old female crossbred dog was presented to the Hospital Universitario Veterinario Ref Codina (Universidad de Santiago de Compostela, Lugo, Spain) for acute onset of severe, progressive swelling of the head, neck, and cranial/trunk. Survey radiographs and ultrasonography revealed a large, heterogeneous mass in the cranial mediastinum, compressing or growing into a large blood vessel within the cranial mediastinum and displacing the heart dorsocaudally. At postmortem examination, the mass was diagnosed as a large, localized mesothelioma. Localized mesotheliomas are rare neoplasms in dogs but should be considered as a possible differential diagnosis for cranial vena cava syndrome. The anatomic distribution and clinical features of mesothelioma in the present report are similar to other cases in humans.

**Key words:** Dogs; mediastinal neoplasia; mesothelioma; vena cava syndrome.



**Figure 1.** Right lateral thoracic radiograph (A) with defined cranial thoracic mass, approximately 4 cm in diameter is present. The heart is displaced dorsocaudally by the mass.

**Figure 2.** Light microscopy, mesothelial mass. Note the peripheral arrangement of the neoplastic mesothelial cells supported by fibrous connective tissue. Mesothelial cells display a high degree of pleomorphism with nuclear atypia and few mitotic figures. Hematoxylin and eosin. Bar = 50 µm.

#### ABDOMINAL ULTRASONOGRAPHIC FINDINGS IN DOGS NATURALLY INFECTED WITH BABESIOSIS

EDUARDO FRAGA, JOSÉ DANIEL BARRERO, ANA GOICOA, LUCIANO ESPINO, GEMMA FRAGA, ANDRÉS BARRERO

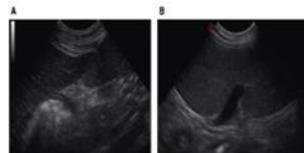
Canine babesiosis is a tick-borne disease with a worldwide distribution that can involve multiple organs and result in a wide variety of clinical manifestations. Our goal was to describe the sonographic changes occurring in 72 dogs naturally infected with babesiosis. Seven healthy Beagle dogs were used as a control group. The most common finding in all dogs was splenomegaly with a diffuse heterogeneous parenchyma and generally reduced echogenicity. Diffuse hypoechoic hepatomegaly and bilaterally increased cortical echogenicity of the renal parenchyma were found more frequently in severe uncomplicated and complicated babesiosis groups. Mean renal resistive index (RI) values were 0.66/1.35, 0.73/1.91, and 0.71/1.73 for mild uncomplicated, severe uncomplicated, and complicated babesiosis groups, respectively. A markedly increased RI for complicated and severe uncomplicated groups correlated with anemia and severity of renal damage. Ultrasonography can be an adjunct for diagnosis and monitoring canine babesiosis and its systemic complication. The detection of diffuse heterogeneous splenomegaly can support the diagnosis of *Babesia* infection, because of the high prevalence of this lesion in these patients. © 2010 *Veterinary Radiology & Ultrasound*, Vol. 52, No. 3, 2011, pp 323-329.

**Key words:** abdominal ultrasonography, babesiosis, dog.

Vol. 52, No. 3

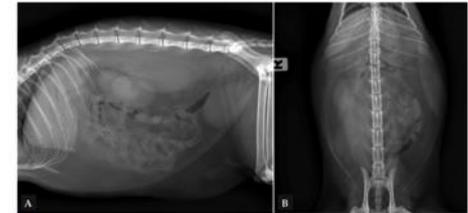
ULTRASONOGRAPHY IN CANINE BABESIOSIS

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**Fig. 2.** Diffuse splenomegaly (arrows) is to the left of the image (A) Sagittal image in the mid abdomen. The spleen is enlarged and has rounded edges. (B) Image in the left negative abdomen. Note the marked convexity beneath the splenic venous insertion, indicating splenomegaly.

### ¿CUÁL ES TU DIAGNÓSTICO?



**Figure 1.** (A) Radiografía lateral y (B) ventrodorsal de abdomen de un gato que se presenta con dolor abdominal.

#### Historia clínica

Se presenta en consulta un gato macho, no castrado, de 1,5 años con historial de anorexia y apatía de aparición aguda (hace 2 días), sin vómitos ni diarrea, que tiene acceso al exterior. Las vacunaciones y las desparasitaciones están al día. En la exploración física el único hallazgo relevante es fiebre con dolor de origen indeterminado en la palpación abdominal. En la analítica sanguínea se observa leucocitosis marcada en el hemograma ( $18,6 \times 10^9/l$ ), rango  $0,8-7 \times 10^9/l$ ), con bioquímica normal.

Se realizan radiografías de abdomen lateral (L) y ventrodorsal (Fig. 1) para investigar posibles causas del dolor abdominal y la fiebre asociada.

#### Describe las anomalías radiográficas que se observan.

¿Cuáles son los posibles diagnósticos diferenciales que plantearías en este caso?

¿Qué otras técnicas realizarías para llegar a un diagnóstico definitivo?

J. D. Barreiro-Vázquez,<sup>1</sup> M. Vila-Pastor,<sup>1</sup> A. Seoane-Mojón,<sup>1</sup> A. Barreiro-Lois,<sup>1</sup>  
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# Actividad clínica del servicio de DPI

## Fauna marina

### Fondos marinos (geología sedimentaria)

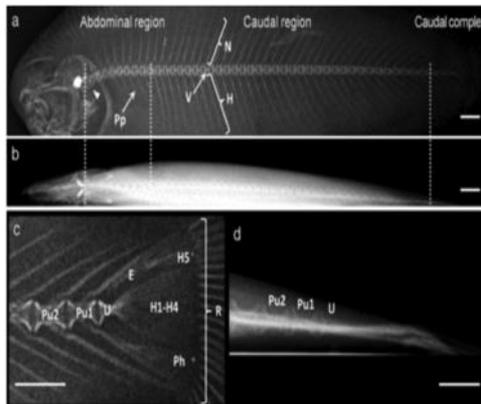
✓ Acuicultura

Vol. 124, 117–128, 2017 https://doi.org/10.3354/dm124117	DISEASES OF AQUATIC ORGANISMS Dis Aquat Org	Published April 20
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### Skeletal anomalies in reared Senegalese sole *Solea senegalensis* juveniles: a radiographic approach

A. M. de Azevedo<sup>1</sup>\*, A. P. Losada<sup>1</sup>, A. Barreiro<sup>1,2</sup>, J. D. Barreiro<sup>1,2</sup>, I. Ferreiro<sup>1</sup>,  
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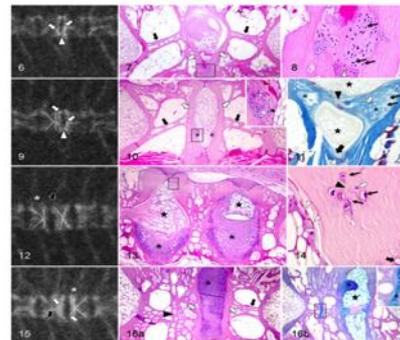


Original Article  
**Skeletal Anomalies in Senegalese Sole (*Solea senegalensis*), an Anosteocytic Boned Flatfish Species**

Ana Manuela de Azevedo<sup>1</sup>, Ana Paula Losada<sup>1</sup>, Andrés Barreiro<sup>1,2</sup>, Sonia Vázquez<sup>1</sup>, and María Isabel Quiroga<sup>1</sup>

**Abstract**  
Skeletal anomalies affect animal welfare and cause important economic problems in aquaculture. Despite the high frequency of skeletal problems in reared *Solea senegalensis*, there is lack of information regarding the histological features of normal and deformed vertebrae in this flatfish. The aim of this study was to describe the histopathological and radiographic appearance of vertebral body anomalies. Sixty-seven juvenile fish were radiographically assessed 104 to 109 days after hatching. Through radiographic images, vertebral segments were selected and processed for histopathological examination from 7 normal and 2 affected fish. Alterations in bone shape and mineralization were the most significant anomalies in the vertebral bodies. These alterations occurred most frequently between the last 3 abdominal vertebrae and the first 10 caudal spines. Radiographically, deformed vertebrae showed flattening of the endplates and narrowing of the intervertebral spaces. The radiographic findings concurred with the histological lesions where affected vertebrae exhibited irregular endplates and changes in trabecular bone. Radiolucid cartilaginous tissue was evident in the endplates of the deformed vertebrae and, in some cases, the cartilaginous material extended from the growth zone into the intervertebral space. These changes were likely the primary alterations that led to vertebral fusion. Fused vertebrae were often radiopaque and showed a morphogenesis of the vertebrae. The formation of metaplastic cartilage is frequent in a variety of anomalies affecting teleost species.

**Keywords**  
osteocytic bone, fish, histopathology, *Solea senegalensis*, skeletal anomalies, vertebrae



**Figures 2–10.** Deformed vertebrae. *Solea senegalensis*. **Figure 2.** Lateral radiographic projection (L) of deformed caudal vertebrae (black arrows) that were found finally (white arrowheads). The intervertebral space (Pp) is narrowed and radiopaque (Pp). **Figure 3.** Histological section of the same segment as Fig. 2. Flattened and radiopaque endplates (black arrows) in a ventral view, forming a lamina rotatoria. The endplate (black arrow) is an anosteocytic bone in the cranial-rod and in the dorsal-rod part. Note the presence of radiopaque tissue in the proximity of the growth zone (arrowhead). Hematoxylin and eosin (H&E). **Figure 4.** Magnification of the area of the vertebra from Fig. 2. Cartilage near the growth zone (white arrowhead) and the vertebrae. Chondrocytes (black arrows) are evident in lacunae, surrounded by abundant cartilaginous extracellular matrix (ECM). **Figure 5.** L1 showing alterations of the vertebral intervertebral structures. **Figure 6.** The vertebra (black box) and opposing flattened and radiopaque endplates (white arrowheads). The Pp is radiolucid and, in 2 parts, the endplate (black arrow) and radiopaque intervertebral matrix (white arrowheads). **Figure 7.** Oblique longitudinal radiographic projection (black arrows) of deformed vertebrae (black arrows) in being vertebrae, showing protrusion of the endplate (white arrowheads) toward the centrum (Pp). **Figure 8.** Transverse radiographic projection of the view of the vertebral changing of the intervertebral space (black arrows) and the vertebral body (black arrowheads) (ECM) (Figure 10, right side). **Figure 9.** Right side of the intervertebral joint in Fig. 10. A blue line marks indicators of fused (white arrow) towards chondrocytes (black arrows) in the

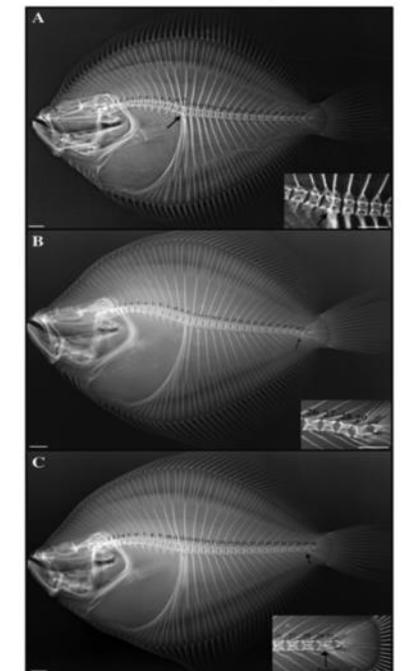
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Short communication  
**Induction of triploidy in turbot (*Scophthalmus maximus*) does not affect gross body morphology and skeleton characteristics**  
Jorge Hernández-Urcera<sup>a</sup>, Eva Torres<sup>a</sup>, Daniel Barreiro<sup>a</sup>, Andrés Barreiro-Luis<sup>a</sup>, Josep Alsius<sup>b</sup>, Rita Gal<sup>c</sup>, Josep Borriell<sup>a,\*</sup>

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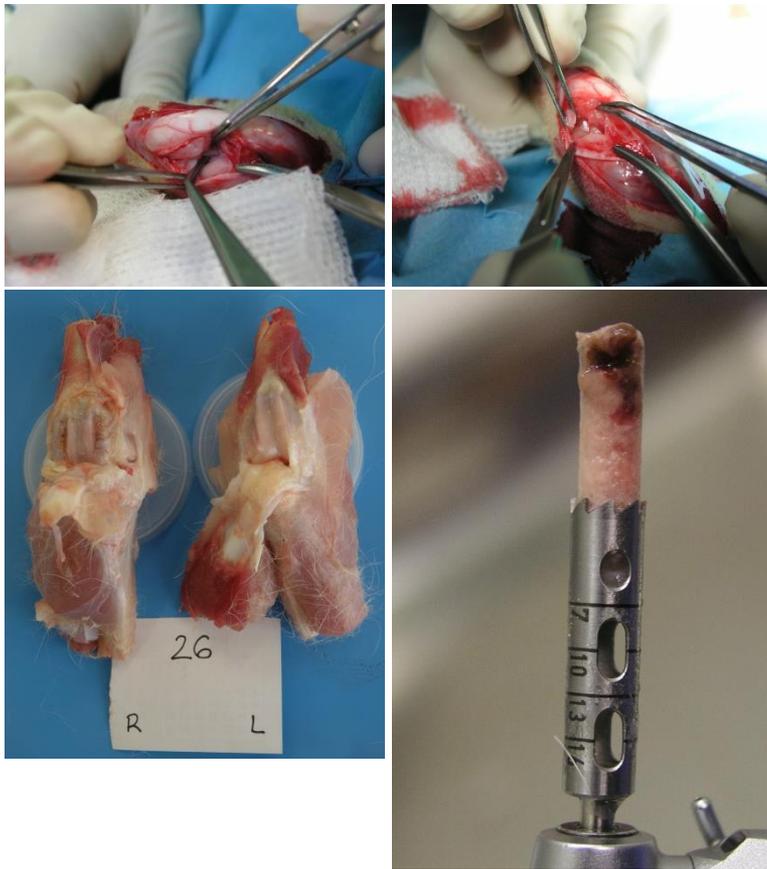
**ABSTRACT**  
Digital images (Scophthalmus maximus) produced by cold shock showed no differences in their gross body morphology and skeleton characteristics compared with their diploid fish.  
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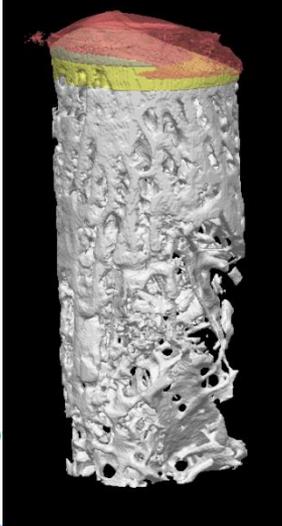
**Fig. 4.** Radiographic images of turbot at 12 months from the triploid group. Enlarged pictures (bottom to the right) corresponds to the most common malformed areas. Scale bar, 1 cm.

# Realización de pruebas in vivo:

## Osteoartrosis



Permuy et al. BMC Veterinary Research (2018) 12:1186  
DOI 10.1186/s12917-018-0458-x



-  Subchondral bone
-  Trabecular bone
-  Articular cartilage

BMC  
Veterinary Research

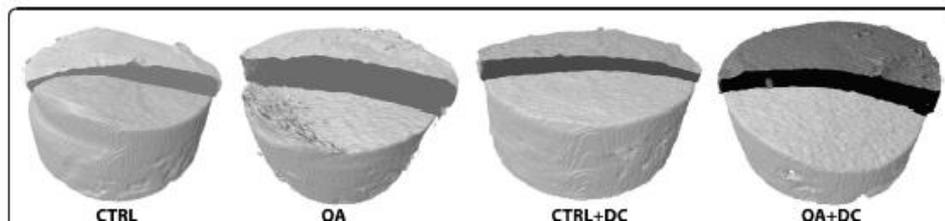
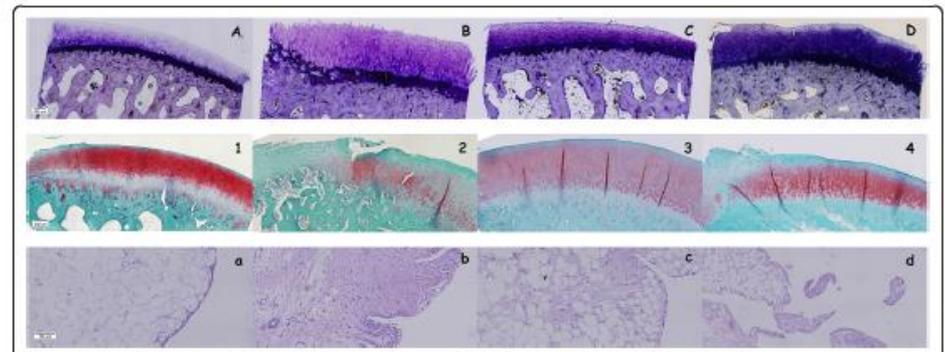
RESEARCH ARTICLE

Open Access



### Effects of diacerein on cartilage and subchondral bone in early stages of osteoarthritis in a rabbit model

María Permuy<sup>1\*</sup>, David Guede<sup>2</sup>, Mónica López-Peña<sup>1</sup>, Fernando Muñoz<sup>1</sup>, Jose-Ramón Caero<sup>3</sup>



**Figure 5** Micro-CT 3D models of a representative sample of each experimental group. Cartilage swelling characteristic of the first stages of OA can be clearly appreciated in OA samples, whereas diacerein-treated samples recover normal cartilage morphology like CTRL.

# Realización de pruebas in vivo:

## Cardiotoxicidad



### Subacute Cardiotoxicity of Yessotoxin: *In Vitro* and *In Vivo* Studies

Sara F. Ferreiro,<sup>†</sup> Natalia Vilarinho,<sup>\*†</sup> Cristina Carrera,<sup>†,§</sup> M. Carmen Louzao,<sup>†</sup>  
Antonio G. Cantalapiedra,<sup>‡,§</sup> Germán Santamarina,<sup>‡,§</sup> J. Manuel Cifuentes,<sup>||</sup> Andrés C. Vieira,<sup>†</sup>  
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Toxicol

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### Subacute immunotoxicity of the marine phycotoxin yessotoxin in rats



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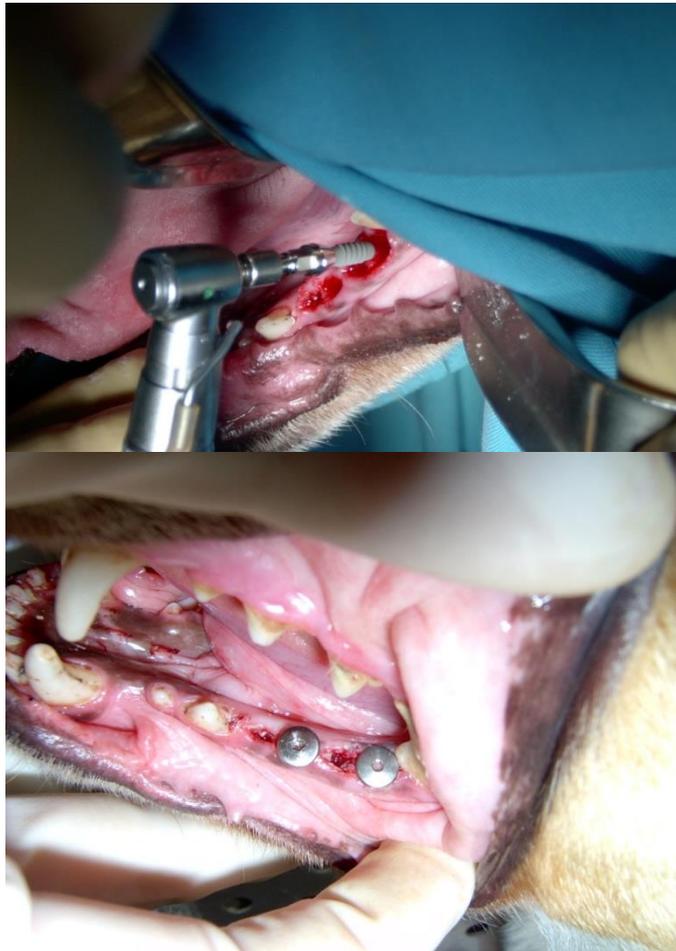
ORGAN TOXICITY AND MECHANISMS

### *In vivo* arrhythmogenicity of the marine biotoxin azaspiracid-2 in rats

Sara F. Ferreiro · Natalia Vilarinho · Cristina Carrera · M. Carmen Louzao · Germán Santamarina ·  
Antonio G. Cantalapiedra · Laura P. Rodríguez · J. Manuel Cifuentes · Andrés C. Vieira · K. C. Nicolaou ·  
Michael O. Frederick · Luis M. Botana

## Realización de pruebas in vivo:

## Osteointegración implantes dentales



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Ronald E. Jung  
Ignacio Sanz-Martin  
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## Guided bone regeneration with particulate vs. block xenogenic bone substitutes: a pilot canine beam computed tomographic investigation

**Key words:** alveolar ridge augmentation, alveolar ridge defect, animal study, block bone, bone graft, bone substitute, cone beam computed tomography, dental implants, guided bone regeneration, membrane

## Abstract

**Aims:** To test whether an equine bone substitute block used for guided bone regeneration (GBR) of peri-implant defects differs from bovine block or particulate bone substitutes regarding the hard and soft tissue contours of the augmented ridge.  
**Material & Methods:** Two semi-saddle bone defects were prepared in each side of the mandible of eight dogs, and one titanium implant was inserted into every defect. The defects were randomly allocated to receive one of the following treatments: bone augmentation by GBR using (1) particulate deproteinized bovine bone mineral (DBBM) + a collagen membrane (CM), (2) block DBBM + CM, (3) equine bone substitute block + CM, and (4) empty control. After 4 months, the jaws were scanned by means of cone beam computed tomography (CBCT). CBCT analysis was performed in one central and two lateral (anterior and distal) regions of interest (ROI) of each site evaluating the horizontal thickness of the augmented hard tissue (HT<sub>aug</sub>) and the total thickness of hard and soft tissue (HT<sub>total</sub>). The Wilcoxon-Mann signed rank test was used for statistical analysis.

**Results:** In the majority of ROIs, equine and bovine blocks rendered significantly higher values in HT<sub>aug</sub> and HT<sub>total</sub> than controls ( $P < 0.05$ ). Generally, equine blocks reached the highest values in HT<sub>aug</sub> and HT<sub>total</sub> followed by DBBM blocks and particulate DBBM. The differences in HT<sub>aug</sub> and HT<sub>total</sub> between GBR groups were not statistically significant ( $P > 0.05$ ). In the central ROI, HT<sub>aug</sub> at the level of the implant shoulder measured 1.7 ± 1.6 mm for equine blocks, 1.7 ± 1.0 mm for DBBM blocks, 0.9 ± 1.2 mm for particulate DBBM, and 0 ± 0 mm for control. The corresponding values in the lateral ROI reached 1.9 ± 1.1 mm for equine blocks, 1.2 ± 0.8 mm for DBBM blocks, 1.0 ± 0.9 mm for particulate DBBM, and 0 ± 0 mm for control. **Conclusions:** GBR with bone substitute blocks lead to higher ridge dimensions than empty control. The equine block with CM rendered the most favorable outcomes in hard and soft tissue contours followed by DBBM block and DBBM granulate with CM.

Guided bone regeneration (GBR) is the best method to augment bone in localized alveolar defects (Benic & Hämmerle 2014). There is a large body of clinical evidence documenting the long-term success of dental implants placed in combination with GBR (Hämmerle et al. 2002; Driess et al. 2006; Jensen & Terhøj 2009). In contrast, there is insufficient amount of information on the hard and soft tissue contour changes of the augmented ridge.

With regard to the choice of the biomaterial for GBR, currently, the use of particulate xenogenic bone substitutes in combination with collagen membranes (CM) is the most common and documented method for the augmentation of peri-implant defects (Chiapasco & Zanussi 2005; Jensen & Terhøj 2009). Recent cone beam computed tomographic investigations of peri-implant defects treated with particulate xenogenic bone substitute with or without collagen augmentation bone in combination with CM found

## CLINICAL ORAL IMPLANTS RESEARCH

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Goran I. Benic  
Fernando Muñoz  
Ralf Kobal  
Ignacio Sanz-Martin  
Antonio G. Cantalapiedra  
Christoph H. F. Hämmerle  
Ronald E. Jung

## Marginal bone-level alterations of loaded zirconia and titanium dental implants: an experimental study in the dog mandible

**Key words:** bone, crown, dental implants, titanium, X-rays, zirconium oxide

## Abstract

**Objectives:** The aim was to test whether or not the marginal bone-level alterations of loaded zirconia implants are similar to the bone-level alterations of a grade 4 titanium one-piece dental implant.

**Materials and methods:** In six dogs, all premolars and the first molars were extracted in the mandible. Four months later, three zirconia implants (BP, VC, 2D) and a control titanium one-piece (STM) implant were randomly placed in each hemimandible and left for transmaxillary healing (baseline). Six months later, CAD/CAM crowns were cemented. Sacrifice was scheduled at 6-month postloading. Digital X-rays were taken at implant placement, crown insertion, and sacrifice. Marginal bone level alterations were calculated, and intra- and intergroup comparisons performed adjusted by confounding factors.

**Results:** Implants were successfully placed. Until crown insertion, two implants were fractured (one VC, one 2D). At sacrifice, 5 more implants were (partly) fractured (one BP, four 2D), and one lost osteointegration (VC). No decementation of crowns occurred. All implant systems demonstrated a statistically significant (except VC) loss of marginal bone between baseline and crown insertion ranging from 0.29 mm (VC;  $P = 0.110$ ) to 1.80 mm (2D;  $P = 0.018$ ). The estimated marginal bone loss between baseline and 6 months of loading ranged between 0.80 mm (BP) and 1.11 mm (VC), being statistically significant for STM and VC only ( $P < 0.05$ ). The changes in marginal bone levels were statistically significantly different between zirconia implants and control implants (STM vs. BP;  $P = 0.007$ ; vs. VC;  $P = 0.001$ ; vs. 2D;  $P = 0.011$ ).

**Conclusions:** Zirconia implants were more prone to fracture prior to and after loading with implant supported crowns compared to titanium implants. Individual differences and variability in the extent of the bone-level change during the 12-month study period were found between the different implant types and materials.

Dental implants have become a predictable treatment modality for the replacement of single or multiple missing teeth (Patterson et al. 2012). Titanium and titanium alloys are considered a gold standard and the material of choice due to favorable physico-chemical properties and their biologic attributes (osteointegration) (Schroeder et al. 1976; Birkmeyer et al. 1977). Numerous preclinical and clinical studies have documented successful hard and soft tissue integration of titanium and titanium alloy implants with predictably high survival rates over 10 years (Buser et al. 1997, 2003; Abrahamson & Wen-

nerberg 2004; Attar & Zarb 2004; Ramonsson et al. 2005; Abrahamson & Carlsson 2007).

Some limitations apply, as it has been shown that during clinical function, soft tissue shrinkage, recession, and post-implant lesions can leave the implant head visible (Cinlar 2006; Cantalapiedra et al. 2006). In Birkmeyer et al. (1977), numerous preclinical and clinical studies have documented successful hard and soft tissue integration of titanium and titanium alloy implants with predictably high survival rates over 10 years (Buser et al. 1997, 2003; Abrahamson & Wen-

## Realización de pruebas in vivo:

### Osteointegración biomateriales en calota



**Realización de pruebas in vivo:**

**Daño axonal difuso traumático/isquémico**



# Realización de pruebas in vivo:

## Tejido adiposo blanco/marrón



Research

Z LÓPEZ-IBARRA and others

Adipose tissue energetic metabolism

54:2

105–113

### Metabolic differences between white and brown fat from fasting rabbits at physiological temperature

Z López-Ibarra<sup>1</sup>, J Modrego<sup>2</sup>, M Valero-Muñoz<sup>3</sup>, P Rodríguez-Sierra<sup>2</sup>, J J Zamorano-León<sup>2</sup>, A González-Cantalapiedra<sup>1</sup>, N de las Heras<sup>2,3</sup>, S Ballesteros<sup>2,3</sup>, V Lahera<sup>2,3</sup> and A J López-Farré<sup>2,4</sup>

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ARCHIVES OF PHYSIOLOGY AND BIOCHEMISTRY, 2017  
<https://doi.org/10.1080/13813455.2017.1360913>

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ORIGINAL ARTICLE

Check for updates

#### Really does temperature reduction and norepinephrine have similar effects on the energy metabolism in rat brown adipose tissue?

B. Sopena<sup>a,\*</sup>, Z. López-Ibarra<sup>a,b,\*</sup>, A. J. López-Farré<sup>a</sup>, N. de las Heras<sup>c</sup>, S. Ballesteros<sup>c</sup>, A. González-Cantalapiedra<sup>b</sup>, V. Lahera<sup>c</sup> and J. J. Zamorano-León<sup>a</sup>

<sup>a</sup>Department of Medicine, School of Medicine, Universidad Complutense de Madrid, Madrid, Spain; <sup>b</sup>Surgery Department, Hospital Universitario ROF-Codina, Lugo, Spain; <sup>c</sup>Department of Physiology, School of Medicine, Universidad Complutense de Madrid, Madrid, Spain

#### ABSTRACT

**Context:** Heat generation by brown adipose tissue (BAT) in response to temperature reduction seems to be entirely related to sympathetic nervous stimulation.

**Objective:** To analyse if temperature reduction and norepinephrine may differently affect the expression of proteins related to energy metabolism in BAT.

**Materials and methods:** Isolated rats BAT was incubated with/without norepinephrine (10<sup>-6</sup> mol/L, 24 h at 32 °C and 37 °C).

**Results:** In BAT, 32 °C increased the protein expression levels of carnitine palmitoyltransferase-I and -II, mitochondrial uncoupling protein-1 (UCP-1) and the expression and activity of lactate dehydrogenase. Mitochondrial F<sub>1</sub>-ATP synthase  $\alpha$ -chain expression was decreased at 32 °C compared to 37 °C. Norepinephrine and at 32 °C exposure, UCP-1 expression was increased but cytochrome-c oxidase and F<sub>1</sub>-ATP synthase  $\alpha$ -chain expression was reduced with respect to 37 °C.

**Discussion:** Sympathetic stimulation seems not to be the only factor associated with heat generation.

**Conclusions:** Temperature reduction by itself exerts some different effects on the expression of proteins related to the energy metabolism than norepinephrine.

#### ARTICLE HISTORY

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#### KEYWORDS

Brown adipose tissue;  $\beta$ -oxidation; mitochondrial oxidative phosphorylation; norepinephrine; temperature reduction

## Osteointegración

*J Clin Periodontol* 2015; 42: 967–975 doi: 10.1111/jcpe.12453

Journal of  
Clinical  
Periodontology

Odontology  
<https://doi.org/10.1007/s10266-018-0384-z>

ORIGINAL ARTICLE



### Evaluation of a new tricalcium phosphate for guided bone regeneration: an experimental study in the beagle dog

Mario Pérez-Sayáns<sup>1,2</sup> · Alejandro I. Lorenzo-Pouso<sup>1,2</sup> · Pablo Galindo-Moreno<sup>3</sup> · Fernando Muñoz-Guzón<sup>4</sup> · Antonio González-Cantalapiedra<sup>4</sup> · Mónica López-Peña<sup>4</sup> · Manuel Somoza-Martín<sup>1</sup> · Mercedes Gallas-Torreira<sup>1</sup> · Abel García-García<sup>1,2</sup>

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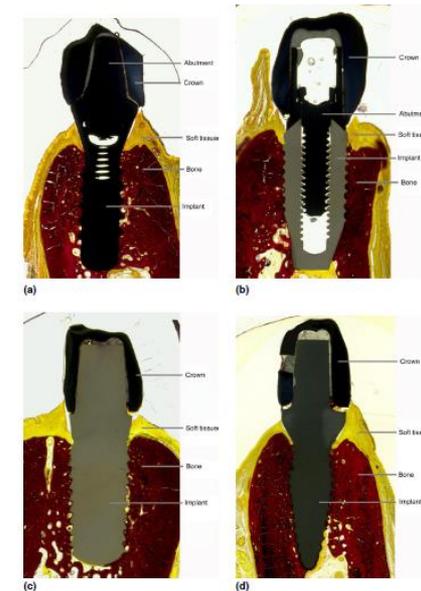
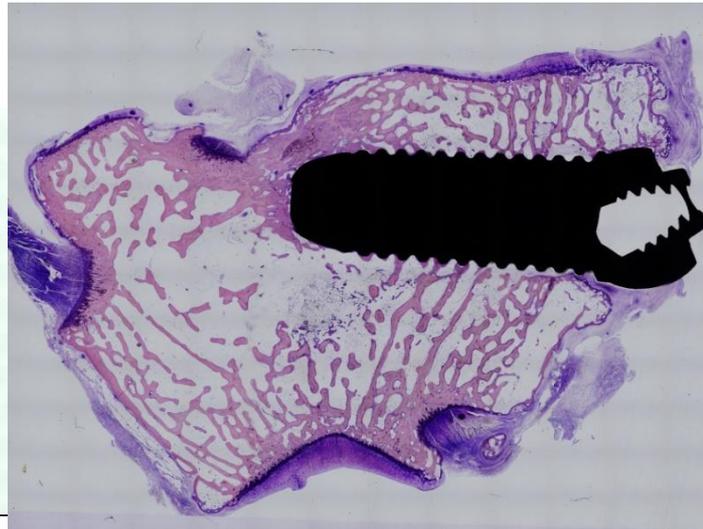
### Histological analysis of loaded zirconia and titanium dental implants: an experimental study in the dog mandible

Daniel S. Thoma<sup>1</sup>, Goran I. Benic<sup>1</sup>, Fernando Muñoz<sup>2</sup>, Ralf Kohal<sup>3</sup>, Ignacio Sanz Martín<sup>4</sup>, Antonio González Cantalapiedra<sup>2</sup>, Christoph H. F. Hammerle<sup>1</sup> and Ronald E. Jung<sup>1</sup>

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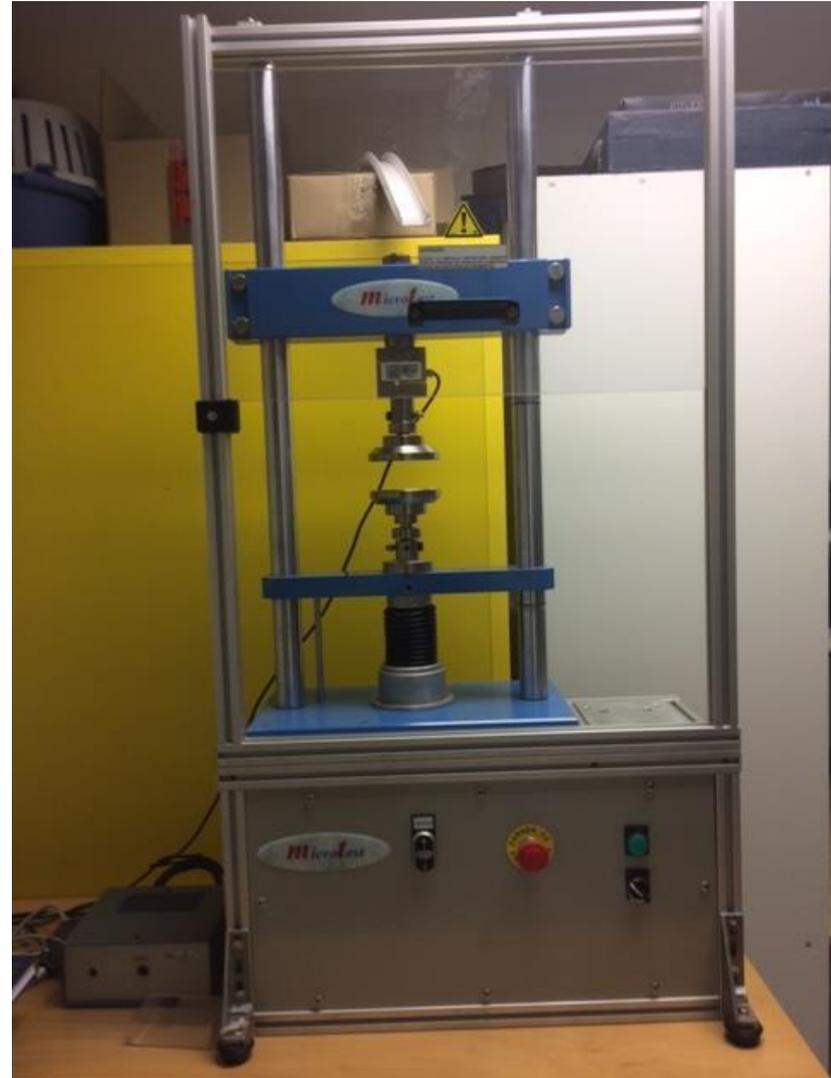
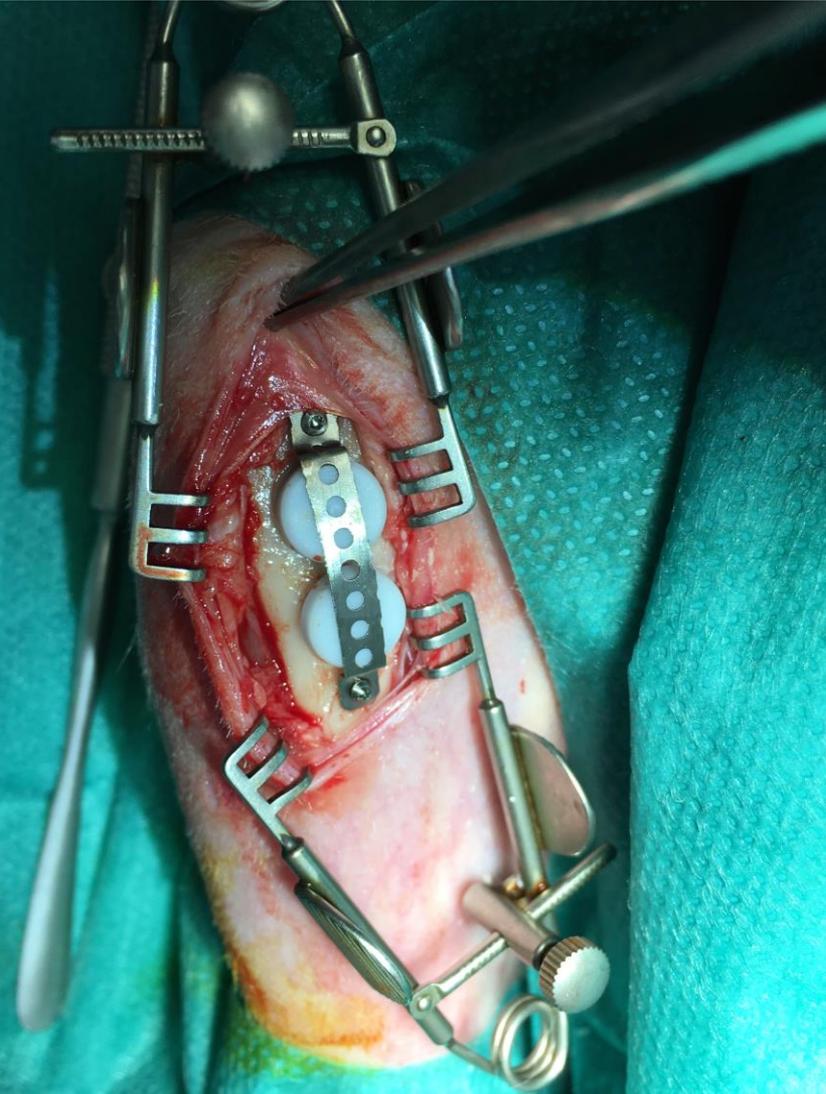
Thoma DS, Benic GI, Muñoz F, Kohal R, Sanz Martín I, Cantalapiedra AG, Hammerle CHF, Jung RE. Histological analysis of loaded zirconia and titanium dental implants: an experimental study in the dog mandible. *J Clin Periodontol* 2015; 42: 967–975. doi: 10.1111/jcpe.12453

972 Thoma et al.



# Laboratorio investigación:

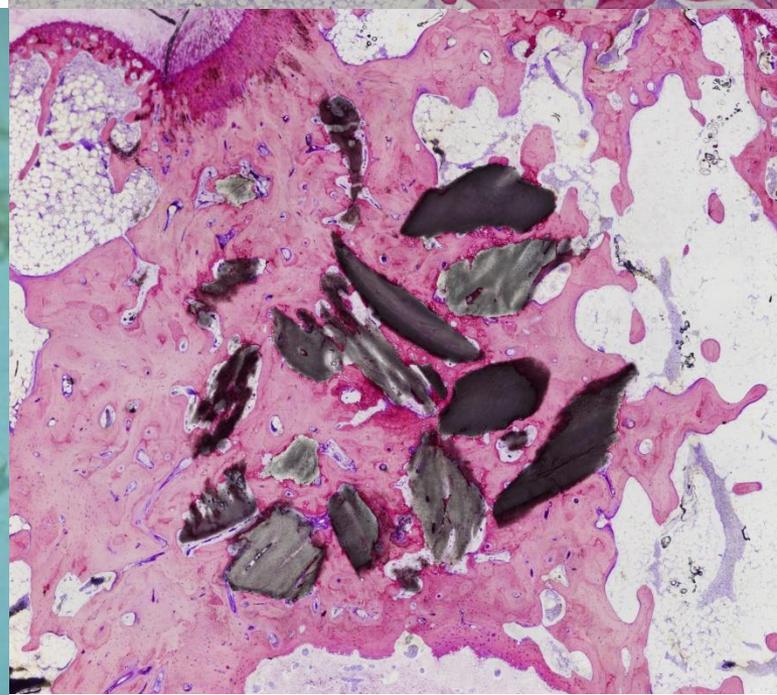
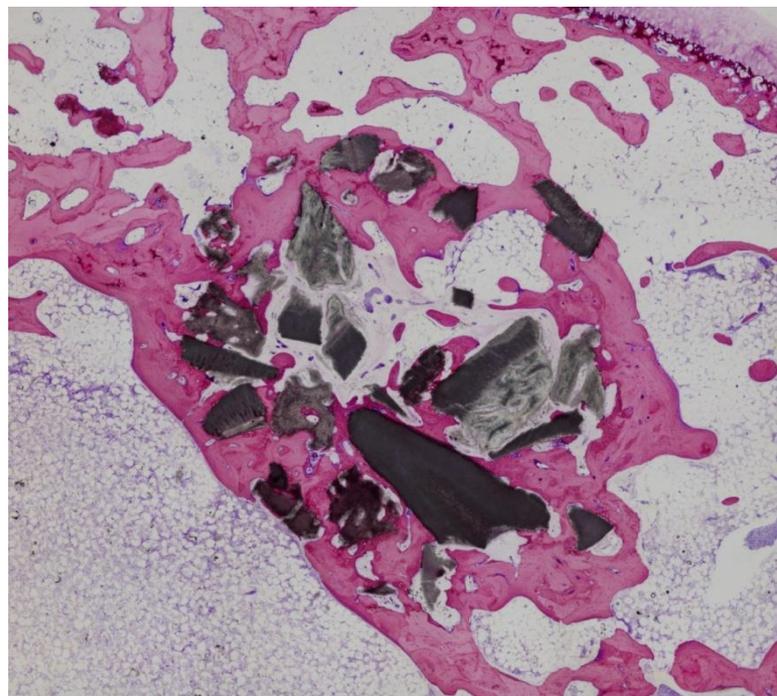
## Osteointegración: test de tracción



Laboratorio investigación:

## BIOMATERIALES

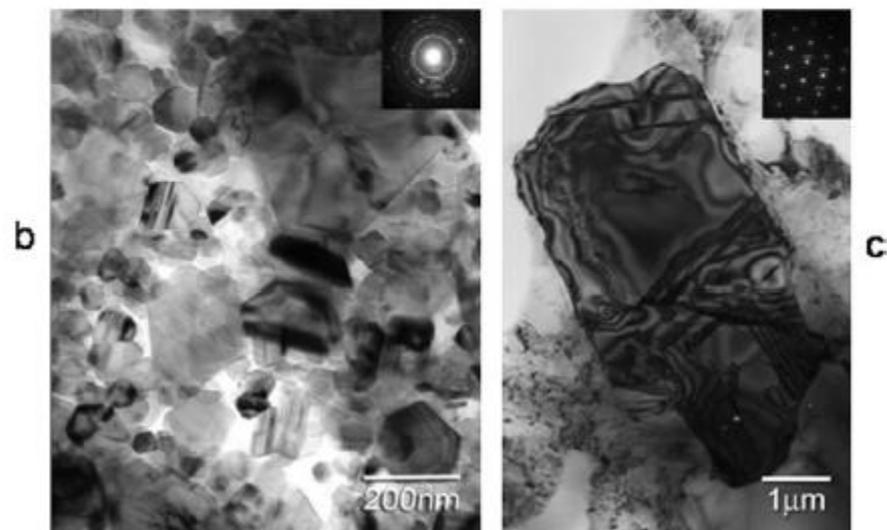
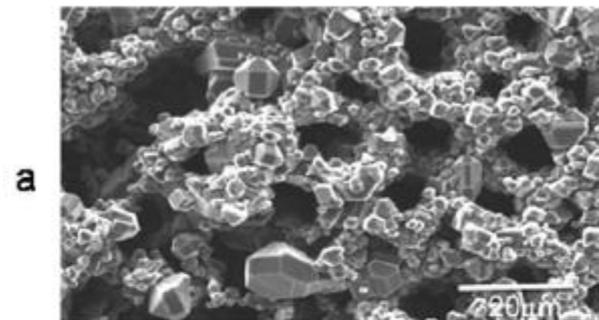
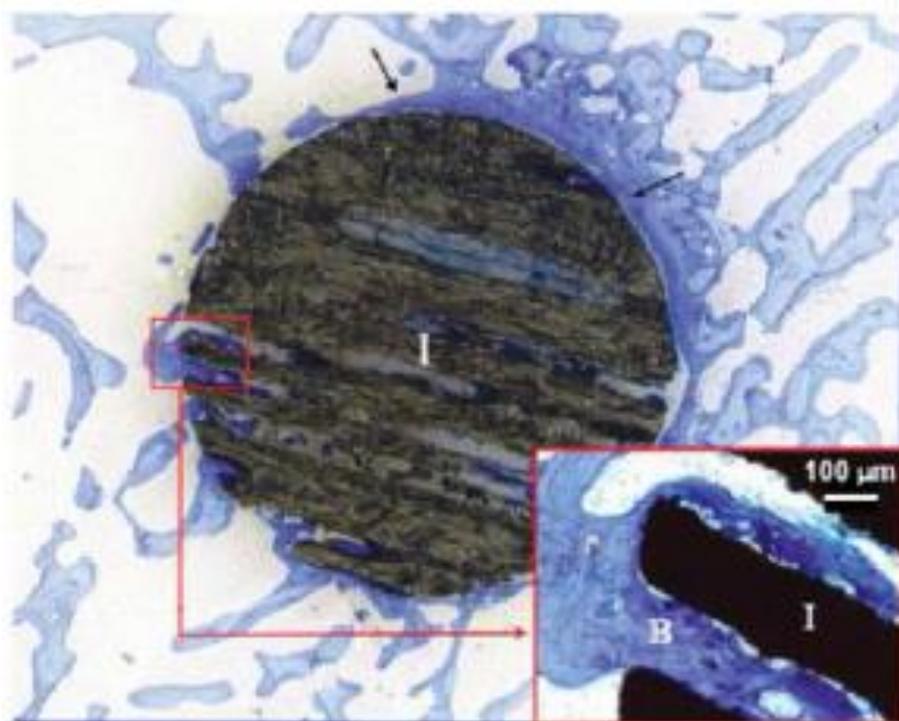
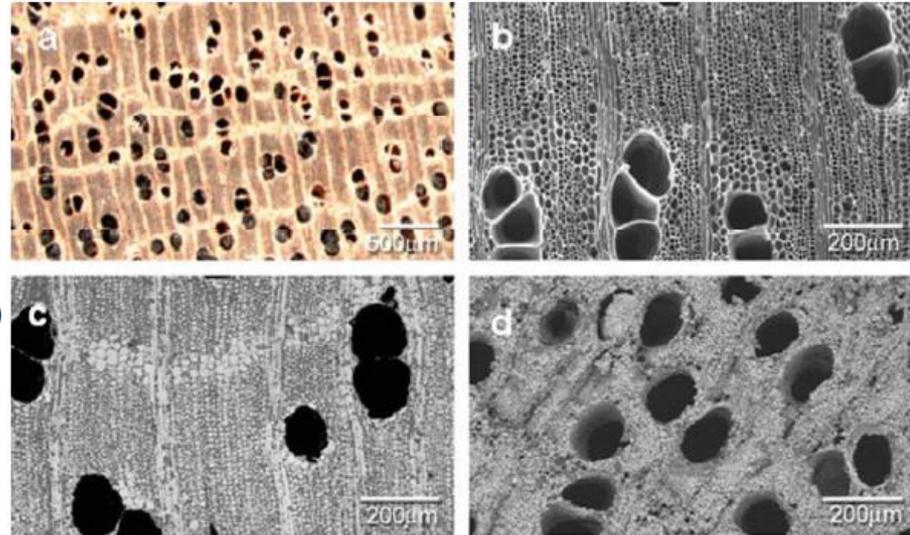
Hidroxiapatita (diente de tiburón)



Laboratorio investigación:

## BIOMATERIALES

Carburo de silicio (maderas, pirolización)



# ACTIVIDAD ASISTENCIAL:



*Veterinary Quarterly*, 2014  
<http://dx.doi.org/10.1080/01652176.2014.993094>



## CASE REPORT

### Intracranial epidural empyema due to *Cryptococcus neoformans* in a 5-year-old neutered male European short hair cat

L. Espino\*, J. D. Barreiro, A. Gonzalez, G. Santamarina, N. Miño and S. Vazquez

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(Received 22 May 2014; accepted 25 November 2014)

**Keywords:** cat; computed tomography; *Cryptococcus*; epidural empyema; intracranial infection

## Efusiones pleurales en pequeños animales

### Pleural effusions in small animals

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#### Resumen

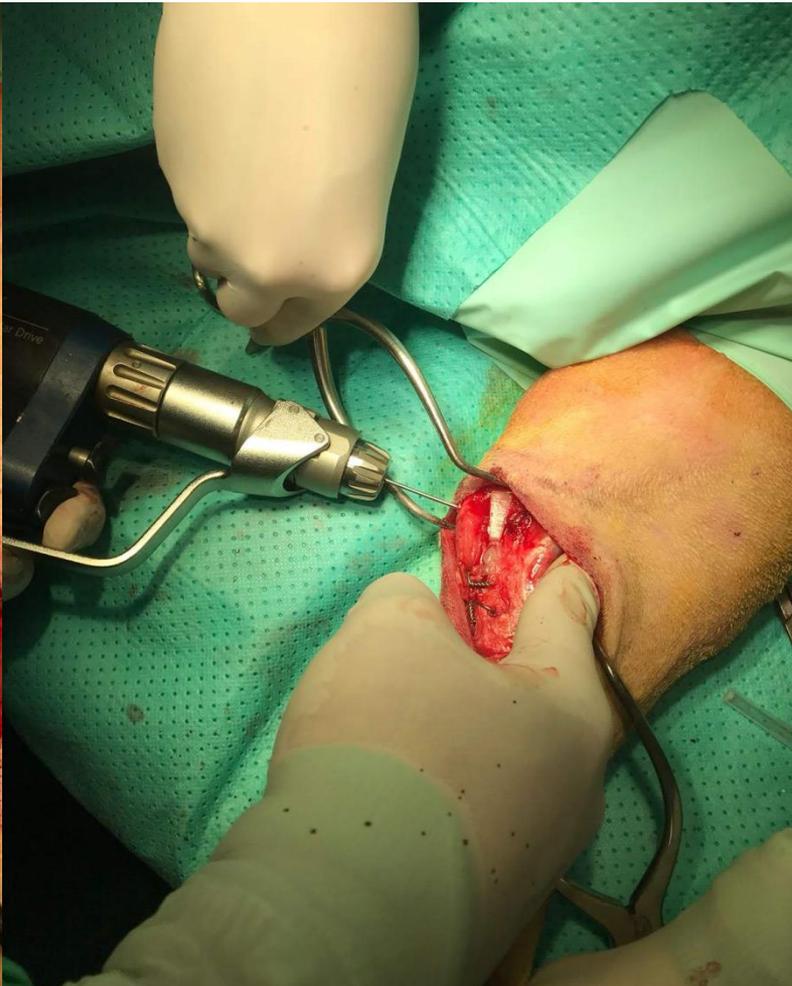
El derrame pleural es una acumulación anormal de líquidos en la cavidad pleural y constituye una manifestación clínica común a numerosos procesos. El derrame pleural es relativamente frecuente en perros y gatos. Su presentación clínica es variable, depende de la enfermedad subyacente, del volumen del derrame y de la rapidez en su formación. En ocasiones puede ser asintomático e identificarse como un hallazgo accidental, mientras que en otras es de tal magnitud que los signos de dificultad respiratoria dominarán el cuadro clínico. El planteamiento diagnóstico dependerá de las causas probables establecidas en función de la anamnesis y la exploración física de cada paciente en particular. La evaluación de un paciente con derrame pleural de causa no conocida comienza con la toracocentesis diagnóstica, excepto cuando la sospecha de derrame pleural es claramente secundaria a una enfermedad específica. El análisis del líquido pleural genera una información vital para el proceso diagnóstico, y en ciertos casos, suficiente para determinar la causa. El tratamiento es muy variable pues depende de la etiología subyacente. En ocasiones la causa puede no ser manejable. Los derrames neoplásicos generalmente tienen mal pronóstico y el tratamiento suele ser paliativo. Los pitorax tienen un pronóstico bueno, pero requieren de tratamiento con antibióticos riguroso y prolongado, y frecuentemente quirúrgico. Los trasudados, y derrames hemorrágicos son generalmente fáciles de resolver, pero las expectativas a largo plazo dependerán de la causa primaria. Los derrames quilosos pueden responder a tratamiento dietético y drenaje, pero si estos métodos fallan, será necesario realizar tratamiento quirúrgico.



Palabras clave: Líquido pleural, Efusión pleural, Pitorax, Quilotorax, Hemotorax.  
Keywords: Pleural fluid, Pleural effusion, Pyothorax, Chylothorax, Hemothorax.  
*Clin. Vet. Peq. Anim.*, 2012, 32 (2): 65-78

## ACTIVIDAD ASISTENCIAL:

Diseño de un nuevo implante para realizar el avance de la tuberosidad tibial (TTA), patente solicitada.



**GRACIAS**