Adipose derived stem cells (ADSC) treatment of two cases of bilateral coxarthrosis in dogs – preliminary results

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In 2014, for the first time in Romania, two dogs with bilateral coxarthrosis were treated using adipose derived stem cells (ADSC). The two patients were one Labrador 5 years old and one Crossbreed 9 years old which presented osteoarthicular degenerative conditions, diagnosed by clinical and radiographic examinations and treated with antiinflammatories for 4, respectively 5 months.

On clinical examination, the patients presented pain during walking, when adopting and leaving decubitus position and persistent lameness. The radiographic findings confirmed bilateral coxarthrosis secondary to hip dysplasia of stage III-IV, with the presence of degenerative phenomenons – severe ramollissment of articular cartilages of the femoral head and thickened femoral neck with exaggerated development of the acetabular roof for the correction of the capsular ligament.

The treatment with ADSC represented a challenge for the specialists team. The lumbosacral region was elected for harvesting the adipose tissue, using Khouri cannulas (of 2 mm, with 12 orifices). A quantity of 120 ml of adipose tissue was harvested and was processed for intraarticular, periarthicular and intravenous administration. The adipose tissue suspension was mixed with Ringer’s Lactate and collagenase type enzyme (Matrase 2.5 ml), using the Ingeron equipment (USA). 6 ml of ADSC were reconstituted after processing. 5 ml of ADSC were mixed with 1 ml of „nanofat”. ADSC were administered intraarticularly (1 ml), periarthicularly (2.5 ml) and intravenously (1 ml of ADSC in 59 Ringer’s Lactate, slow iv infusion).

The patients tolerated very well the harvesting of adipose tissue from the lumbosacral region and the administration of ADSC, no special care was needed.

Postoperatively, the antiinflammatory therapy was interrupted and on the clinical examination the dogs no longer presented pain and lameness. The radiographic aspect of the coxofemoral joints, 2 months after the administration of ADSC, showed the line shaping of the articular surfaces of the femoral heads.

Preliminary results suggest that ADSC therapy seems to be a novel and effective treatment for osteoarthicular degenerative conditions in dogs. Further studies are necessary.
The use of absorbable collagen eye shield (VetShield™) in corneal diseases in dogs

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Corneal collagen shields act as biogradable bandage lenses that dissolve after a specified period of time and promote epithelial and stromal healing. VetShield™ is a veterinary corneal shield that dissolves in 72 hours and is recommended for use in cases of ocular surgery, traumatic or non-traumatic corneal ulcers and chronic corneal epithelial defects.

The aim of this paper is to present the advantages of using collagen shields in deep corneal ulcers, melting corneal ulcers and in indolent corneal ulcers in dogs. The study was conducted in the Ophthalmology Department of the Faculty of Veterinary Medicine in Bucharest between October 2013 and March 2015. Of the 21 dogs included in the study, 7 cases had a deep corneal ulcer, 6 cases had melting corneal ulcer and 8 cases had an indolent corneal ulcer.

The most representative breeds were Shih-Tzu, Bichon, Pekingese and Cross-breed dogs. Males were more affected than females, aged between 6 months and 16 years. All the dogs with indolent ulcers underwent a corneal debridment before the collagen shield was applied. For 3 dogs that had also an iris prolapse, a corneal suture was performed. All the cases were antibiotic therapy for 10 days. Tarsorrhaphy was done in all the cases. The sutures were removed after 4 weeks. In all cases the corneal healing was "ad integrum" with minimal scars.
Human amniotic membrane transplantation (AMT) in corneal chemical burns in dogs and in corneal sequestrum in cats

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Human amniotic membrane represents a good choice for reconstructive surgery in veterinary ophthalmology, acting as a wound bandage and providing healing properties. AMT can be used in several ocular diseases, including chemical burns, severe corneal ulcers, symblepharon secondary to feline-herpesvirus and sequestrum in cats.

This study was conducted in the Ophthalmology Department of the Faculty of Veterinary Medicine in Bucharest and aims to evaluate the use of AMT in corneal chemical burns in dogs and in feline corneal sequestrum. Two dogs and three cats were designated to this method of treatment between December 2014 and March 2015. The two dogs with corneal burns were represented by one female Bichon Maltese and one female Pekingese, while the feline patients were represented by two Persian cats and one European cat.

Clinical examination, medical and surgical treatment, as well as ocular outcome are described. The follow-up period was 3 and 6 months respectively for the dogs and between 2 and 14 months for the cats. For one of the dogs a second surgical intervention was necessary because she developed a descemetocele, while for the other dog the cornea regained 40% of its transparency. AMT had a better success rate in feline sequestrum, with a very good visual outcome and no recurrence in the follow-up period.