

Stem cell procedure treating dogs with arthritis

Osteoarthritis – we know it as a chronic, painful and debilitating disease for which there is no known cure and it's hard to believe that one in five dogs in Australia suffer from it.

Until now, treatments for arthritic dogs have usually consisted of various medications and supplements to help manage joint pain. As with most medications, there are possible side effects for the dog such as liver toxicity and reduced kidney function. The only other alternative has been a total hip or knee replacement, which can be painful for the dog and costly for the owner.

A new breakthrough stem cell treatment for dogs with arthritis is now available in Australia and is producing some remarkable results. AdiCell™, a regenerative procedure for dogs, turns on the body's own ability to heal itself.

AdiCell has been used to treat painful arthritic joints such as knees and hips, and has even proved successful in treating dogs with hip dysplasia. It has been shown to lessen pain, reduce reliance on medication and improve the general wellbeing of dogs both young and old, which had previously struggled to walk, run, jump and get in and out of the car.

A lot of dog owners attribute their dog's limping to old age and often fail to recognise the seriousness of the condition. Arthritis is actually one of the most common causes of chronic pain in adult dogs and can severely impact the animal's quality of life.

Osteoarthritis is characterised by the deterioration of cartilage that cushions the ends of bones. The loss of cartilage causes pain, inflammation and loss of mobility. Osteoarthritis may be caused by general wear and tear, or in some cases may result from injury.

Like the hundreds of thousands of Australians who suffer from osteoarthritis, arthritic dogs experience excruciating pain, swelling and stiffness. This normally results in behavioural changes, with the dog no longer able to feel comfortable without medication.

Arthritic dogs suitable for the AdiCell procedure fall into two categories:

1. **Primary osteoarthritis – Mainly wear and tear. Not usually associated with other health problems**
2. **Secondary osteoarthritis – The result of an illness or injury**

Developed by Regeneus in collaboration with Ku-Ring-Gai Veterinary Hospital in Sydney, the one-day procedure involves the extraction of adult stem cells and other regenerative cells from the dog's own fat.

What most people do not realise is that fat is actually an abundant source of adult mesenchymal stem cells (MSCs). A mixture of cells, including MSCs, are isolated from fat and re-injected into the arthritic joint of the same animal. This approach known as autologous is safe and carries no risk of rejection.

MSCs from fat are simple to harvest and are found in much greater numbers than those found in bone marrow. This eliminates any need to amplify cell numbers with culturing. The procedure does not use embryonic stem cells, with which there are a myriad of ethical and legal issues associated.

AdiCell is a non-invasive and painless procedure, which normally starts with a complete health and wellbeing assessment in order to ensure all osteoarthritic joints are identified. This may include a variety of examinations, blood tests, diagnostic imaging via a CT Scan and a sophisticated gait analysis.

A pressure analysis system, known as GAITRite, measures the stride length, stance time, symmetry, and peak vertical pressure for each limb. The system comprises a 4-metre walkway made up of sensors and cameras that capture pressure readings from each step the dog takes together with video images. This system helps to identify which limbs are lame and thus affected by arthritis.

With the dog under general anaesthetic, the fat or 'adipose' tissue as it is also known is removed by an accredited veterinarian either via liposuction or excision of a fat pad from the groin area. Following extraction, the sample undergoes a purification process that takes less than 2 hours whereby the regenerative cell mixture is isolated from the fat and then re-injected into the damaged joint or multiple joints.

Beyond the risks of anaesthesia, bruising and irritation, the AdiCell procedure is well tolerated by animals. Most dog owners are generally surprised at the degree of recovery the day after the procedure.

During clinical trials in 2008, 33 dogs were treated with the procedure. Within 10 days of being treated with AdiCell, some arthritic dogs showed a significant and even dramatic improvement. At the six-month point, results showed all dogs that suffered from osteoarthritis and joint pain, improved in mobility levels after the AdiCell treatment. According to the veterinary and client survey undertaken, no dogs have had their conditions worsened by the procedure to date.

There are a number of reasons as to why AdiCell produces such dramatic improvements. These include the replacement of the damaged or lost cells of cartilage, anti-inflammatory effects, and immune modulation. Research has shown that when adult mesenchymal stem cells are transplanted into damaged joints, the cells are observed to embed into the surrounding tissue and generate new cartilage.

These results are evident when watching the vibrant seven-year old Border Collie Tully play soccer with his owner. The young champion agility dog had been suffering from osteoarthritis in his knees.

Tully could no longer continue taking anti-inflammatory drugs for his condition as he developed renal issues. With invasive knee replacement surgery as the only other option, Tully was put forward for AdiCell therapy. Almost a year on Tully is back to his old self, competing in agility competitions again and all without relying on medication.

So far, more than 90 dogs of all types of breeds have been treated with AdiCell in Australia. Although only currently available in Sydney, AdiCell will be made available nationally in the coming months. For more information visit www.regeneus.com.au

Images (Gait analysis, CT Scan, x-rays, fat cell removal, stem cell injection)



The RNBT looks after the welfare and needs of both Service and retired sailors, Royal Marines and their dependents. Sadly only last week it was reported a Royal Marine was killed in action.

Ironically many folk do not fully appreciate the role the Royal Navy plays in current operations, personnel from Fleet Air Arm, Royal Marines, RN medical teams all playing a major roll in the theatre of war.

WHAT A TEAM THEY ARE TURNING OUT TO BE AND SO EARLY ON IN THEIR YOUNG PARTNERSHIP!

Gulf war veteran Allen Parton and EJ (Endal Junior) have thrown themselves into raising funds and awareness for one of the many Services charities very close to Allen's heart, on this occasion it was in aid Royal Naval Benevolent fund (RNBT).

"In those very early days when I was not long out of hospital" said Allen "and then having only just met Endal.... it was only through RNBT supplying me with my very first power chair that it was agreed i could have Endal." So it was incredibly poignant for Allen to have been asked to be the key note speaker at this year's prestigious RNBT Annual Clay pigeon shoot held in Haslemere Surrey.

"To be able to share with the guests how RNBT had helped not only me but most importantly my family as well in our greatest hour of need" Allen explained "It was a privilege to be able to explain in detail to the guests where the funds go and what an incredible difference it makes and why more funds are needed to meet an ever increasing demand".

Every day in the newspapers we read of the fatalities of war, sadly today's news tomorrow's fish and chips paper, we hear though so very little of the casualties or families left to struggle on. When the guns on the battle field fall silent the battle with disability, trauma and bereavement go on till one draws their last breath.

To feel EJ and I can play some small part in helping to raise desperately needed funds to support the serving and those that have served Queen and Country in their hour of need is an absolute honour.

EJ is slowly clocking up a string of appearances and has risen to every challenge with an astounding professionalism far beyond that expected of such young dog. "He is still delightfully mischievous and keeps me on my toes" said Allen "but when the chips are really down and the need is there his focus and maturity come to the fore!"