

Cutting Edge

Hip dysplasia is the most common cause of arthritis in the hip joint. There are multiple surgical procedures to not only prevent the progression of arthritis but to salvage the hip when this progression cannot be stopped and becomes life altering. Total hip replacement (THR) along with femoral head/neck ostectomy (FHO) are considered salvage procedures because the joint cannot be repaired.

DVSC

TREATING HIP DYSPLASIA AT DVSC

Performs

Total Hip Replacement is superior in medium to large dogs for return to normal function. Traditionally, THR was performed as late in life as possible based on the concept that a prosthetic joint is in a constant state of degeneration therefore decreasing the potential need for revision/replacement surgery. The traditional THR was performed by cementing the femoral stem and cup in place. It is generally strongest within two days of implantation but may weaken and loosen over time because the cement cannot adapt to changes in the bone or alteration of loads. The development of cementless THRs has altered the philosophy of when a THR can be performed. Cementless total hip replacements initially are stabilized through either press fit or monocortical screws. Long term stabilization is then achieved through bony in-growth into the implant itself. With this advancement in THRs, cementless implants are much less susceptible to loosening with time. Therefore, their use in younger patients is more common and acceptable, giving the younger

Multiple

Procedures

for Hip

Dysplasia



DVSC

Setting the standard for surgical care

There are currently three cementless systems to go along with the most common cemented system. BioMedtrix LLC makes both the cemented system (CFX TM) along with a non-cemented system (BFX TM) (Figure 1). In the cemented system the cement serves as a mortar between the implant and the bone. Medical grade bone cement (polymethylmethacrylate), is used and locks into irregularities in the implant and bone for security. In the non-cemented system the femoral component is stabilized through careful press fit into femoral canal. Precise preparation is needed in the femur for exact fit. The acetabular cup is secured through press fit as well by impacting the cup into an acetabular bed that has been prepared to have a smaller diameter than the cup resulting in a very high friction between the cup and the bone after it has been impacted into the bone bed. The second cementless system is made by Kyon. The stem in this system is secured to the femur through monocortical and bicortical screws (Figure 2). Again, this is for short term stability and the stem relies on bony in-growth for longterm stability. The preparation of the femoral canal in this system is much less precise than that of Biomedtrix. The acetabular cup is secured in a similar fashion as previously described.



Figure 1

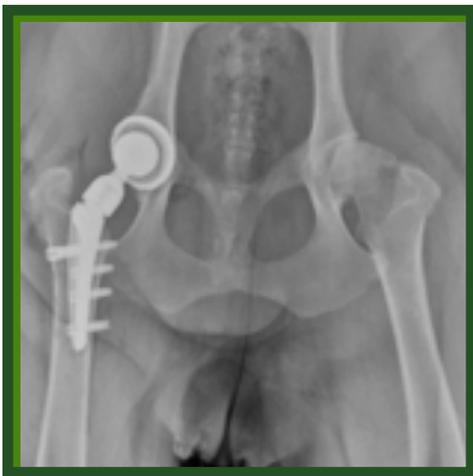


Figure 2

The third system, HELICA-endoprosthesis (Figure 3), is the newest of the cementless systems. This system has a similar acetabular cup but the femoral component is inserted in a screw type manner into the prepared femoral neck in contrast to the other systems that are inserted into the femoral canal.



Figure 3



Figure 4

Currently at the DVSC we have the cementless Kyon (Figure 4) system to go along with both cemented (Figure 5) and cementless BioMedtrix (Figure 6) systems. Implant selection is based primarily on both surgeon preference and patient age. There are obviously some exceptions however, older patients are generally good candidates for cemented implants (CFX) (Figure 6) as their limited life expectancy and lower level of activity suggest that the cemented implant will outlast the patient's life. In addition, older patients have slower rates of bone ingrowth and a higher risk of fracture. Younger patients are great candidates for cementless implants due to their higher bone metabolism resulting in a more rapid and secure bone in-growth. On occasion the patient may receive a hybrid THR consisting of an uncemented acetabular component with a cemented femoral stem. There continues to be advancements and new systems available to veterinary surgeons. With these new additions and improvements in technology, the DVSC can offer more patients early relief from this disease and improve their quality of life for longer periods of time. At Dallas Veterinary Surgical Center we are committed to offering the most current surgical procedures available and collaborating with referring doctors so as to design a plan that benefits both the patient and the client.



Figure 6



Figure 5

References

Fossum TW. Small Animal Surgery, Third Edition 2007; 1238-1240.

Hach V, Delfs G. Initial experience with a newly developed cementless hip endoprosthesis. Vet Comp Orthop Traumatol 2009; 22:1-6.

DVSC Performs Cementless Kyon and BioMedtrix Procedures

The DVSC will be opening a new location within the next several weeks. We will now have a location in east Dallas that will be in the Veterinary Specialists and Animal Cancer Center. The new telephone number for this location will be 972-267-8200. We will send out additional information regarding the opening date in the next couple of weeks. We are very excited to be moving into this location and will be able to offer our full services while partnering with other disciplines of specialty medicine.

