

# A REVIEW OF THE MANAGEMENT OF CANINE HIP DYSPLASIA

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# INTRODUCTION

- Canine hip dysplasia is a deformity of the coxofemoral joint or joints which may be characterized by a shallow acetabulum, flattening of the femoral head, coxofemoral subluxation, or secondary degenerative joint disease.
- Canine hip dysplasia (CHD) is a developmental malformation of the hip joints resulting in secondary joint disease (arthrosis, arthritis) and corresponding clinical symptoms such as pain and lameness (Flückiger, 2007).

# Aetiology

- It generally affects medium to large breed dogs such as German shepherds, labradors, rottweilers etc.
- In a study done by Roger Cap (2011) it was found that GSD is the most commonly affected breed in Kenya.

# AETIOLOGY CONT

- The disease is heritable, environmental influences are also said to play a role. Non-genetic factors which influence the progression of hip dysplasia.
- Rapid growth - especially between the 3rd to 8th month of life.
- Over nutrition - This is related to rapid growth e.g. excess of Calcium, Vit D, high protein and high calories for puppies under 18 months.
- Obesity – weight reduction highly effective in reducing or preventing onset of osteoarthritis. Injury at a young age, overexertion on hip joint or ligament tear at a young age, repetitive motion on forming joint (for example jogging with a puppy under 1 year of age) (Foster, 1996)

# TREATMENT

- **Medical Management**
- In this case the treatment is to alleviate the pain related to the synovitis early in the disease and the OA as the disease progresses.
- Mild exercise such as walking, swimming, or slow running is beneficial, but excessive activity such as jumping and prolonged running should be avoided.
- Supplementing the diet with the nutraceuticals chondroitin sulfate and glucosamine sulfate, as well as Omega 3 fatty acids. These natural products can prevent pain and aid in remodeling to improve the contour of the hip joint.
- NSAIDs like Caprofen, Phenylbutazone
- Applied heat, massage, good bedding, exercise and weight management as well as nutrition and physiotherapy also play a part in caring for a dog affected by HD.

- Several long-term studies have evaluated the results of conservative management. These studies have been conducted by Barr and others (1987), Farrell and others (2007), (Kealy and others 2000, Smith and others 2006) and (Impellizeri and others 2000, Mlacnik and others 2006).
- Majority of the studies don't take into account calcium supplementation in the diet.

# SURGICAL OPTIONS

- Triple pelvic osteotomy (6-12 months)
- Femoral head excision
- Total hip replacement
- Pectineus tenectomy

# FEMORAL HEAD EXCISION

- It is useful in relieving the osteoarthritic pain caused by contact of the roughened articular surfaces. It is done in young animals and may also be performed in mature dogs.
- Small dogs perform better after surgery than large dogs (Duff and Campbell 1977, Gendreau and Cawley 1977, Montgomery and others 1987).

- Unfortunately most of the dogs that presented with clinical problems with HD at any age are over 20 kg, where outcome following femoral head excision is more variable compared to lighter dogs. Plante (1997a,b) reported that bilateral excision arthroplasty was a more effective treatment for HD compared to conservative management but the results were not as good when compared to dogs subjected to TPO

# PECTINEUS TENECTOMY

- This is excision of part of the pectineus muscle at its tendon of insertion. This causes an immediate relief of pain and lameness due to relief of tension on joint structures.

# TOTAL HIP REPLACEMENT

- In this procedure, the hip joint is completely replaced with a prosthetic joint made of stainless steel and surgical grade polyethylene. This procedure provides the most normal long term limb function, although it is the most expensive and requires the greatest commitment from the owners regarding aftercare and postoperative rehabilitation. Postoperative physical rehabilitation is absolutely necessary with THR. With appropriate rehabilitation, total hip replacement results in excellent return to normal pain free function unless complications occur. Complications after total hip replacement may include infection, implant failure, hip luxation, and fracture.

# Triple pelvic osteotomy

- Dogs less than one year of age with no arthritic changes (identified on x-rays) in the hip joint may be candidates for a Triple Pelvic Osteotomy (TPO). During this procedure, the pelvic bone is cut in three places and then rotated to create a more appropriate angle to stabilize and hold the femoral head in place. Surgical steel implants are placed to hold the remodeled bone in place, thus stabilizing the hip joint. This may provide increased stability and comfort for the dog. This procedure will not help any dog with advanced arthritic changes already present in the hip joint.

- Early reports of TPO suggested that the procedure halted or even reversed radiographic signs of osteoarthritis (Slocum and Devine 1987). More recently a number of studies have shown that TPO does not stop the development or progression of osteoarthritis particularly if case selection is inconsistent or lacking strict criteria (Johnson and others 1998, Rasmussen and others 1998).

# CONCLUSION

- Generally in terms of management of HD the conservative treatment is usually focused on reducing weight, reducing intake of high energy and calorie diets and giving nutraceuticals and NSAID. There is need to look at the effects of supplementing calcium and the effect of other conservative management in the diet for both puppies and adult dogs to see how it can actually help in reducing the severity of the signs of HD.
- Surgical management has its draw backs with most of the procedures not been performed in Kenya due to lack of equipment and facilities and the cost of the treatment as well as lack of owner compliance in terms of after care.

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