

# CANINE HIP DYSPLASIA AND ITS MANAGEMENT

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## Introduction

The term Hip Dysplasia denotes a badly formed hip joint due to developmental abnormalities. It causes unequal wear and tear of different components of hip joint and predisposes to development of degeneration and arthritis of the joint. Most important reason for this condition is heredity. It is normally seen as a disease of heavy breeds of dogs like German Shepard, Rott weiler, Labrador etc.

## Etiology.

The normal Coxo-Femoral angle is 140-150 degree. According to the differences in this normal angle, we can classify hip dysplasia into Coxa Magna

(Unusually broad Head and neck of femur), Coxa Plana (Flattened articular cartilage), Coxa Valga (The angle is increased) and Coxa Vara (The angle is decreased) type. Increased body weight is the most important reason for the development of the disease and initial cartilage lesion occurs periphery suggestive of abnormal magnitude of load results in focal stress in that area. Abnormal weight bearing continues to cause excessive wear on the articular cartilage and damages the underlying bone possibly causing painful micro fracture and sclerosis. Joint pain, articular cartilage degeneration and bone remodeling characteristic of osteoarthritis results.

## Symptoms.

There will be abnormal gait, lameness noticed as limping, wincing on pressure over the hips and sitting in abnormal position. Outward rotation of stifle joint and prominent greater trochanter are also noticed. There will be difficulty in climbing stairs and the limbs will be used in rabbit like fashion

while running. All these symptoms will give a characteristic "Bunny Hopping Gait". When viewed from behind the hips will be wide and flat. There will be over development of thoracic limb musculature giving the animal a "Body Builder Appearance".

## Diagnosis.

The condition can be confirmed by a VD radiograph of the pelvis.

Ortolani's test: Keep the animal in lateral recumbency. The stifle is grasped with one hand, while the dorsal spine and greater trochanter are stabilized and identified with the other hand. The limb is forced dorsally to subluxate the joint. As the limb is abducted, reduction of the joint will be felt with a click. The click sound is interpreted as positive ortolani sign and suggestive of hip laxity.

Orthopaedic Foundation for Animals (OFA) grade HD by scoring system as Normal (Excellent, good, fair), Borderline dysplasia and Dysplastic (Mild, moderate and severe).

Pennsylvania Hip Improvement Programme (Penn HIP). They use compression or distraction views of the pelvis. The amount of femoral head displacement is quantified using a Distraction Index (DI). It is obtained by measuring the distance the centre of femur head moves laterally from the center of the acetabulum and dividing it by the radius of the femur head. DI ranges from 0 to 1. A DI of Zero indicates a very tight joint and 1 indicates complete luxation of the joint. DI 0.6 means 60 % luxated joint.

## Treatment

As this is primarily an inherited condition there is no specific product to control the disease. The following steps can be undertaken to decrease the progression of the degeneration of the joint.

- a. Weight Management: Control overweight the animal should not be obese.
- b. Exercise: Exercise that provides good range of motion and muscle building and limits wear and tear on the joint is the best. Too little exercise is detrimental than too much exercise and wrong exercise is also harmful. Daily exercise is mandatory.
- c. Warmth and good sleeping areas: Arthritis will be worsened in cold and damp weather and joint should be kept warm.
- d. Massage and Physiotherapy.

## Medical Treatment.

Oral Disease Modifying Osteoarthritis agents.

- a. Glucosamine and Chondroitin: Tablets like L ubrijoint are available.
- b. Tetracyclines: Drugs like Doxycycline have shown to inhibit enzymes that break down articular cartilage.
- c. S-Adenosyl L-Methionine.
- d. Methyl Sulphonyl Methane (MSM): it is a natural Sulphur containing compound.
- e. Omega 3-fatty acids, Vitamin C, Creatinine etc also can be used.

## Anti inflammatory Drugs

- a. NSAID: Ketoprofen, Meloxicam Aspirin etc.
- b. Corticosteroids

## Surgical Treatment

1. Triple pelvic Osteotomy: It is usually done in young puppies of less than ten months of age

and showing hip laxity but do not developed damage to the joint. Surgery involves breaking of the pelvic bones and a realignment of the femoral head and acetabulum restoring the coxo femoral weight bearing surface area and correcting femoral head subluxation.

2. Total Hip Replacement: It is the best treatment for chronic hip dysplasia. It is a salvage procedure that can produce a functionally normal joint, eliminate degenerative changes and alleviate pain. The procedure involves removal of the existing joint and replacing it with a prosthetic one.

3. Femoral Head and Neck Excision: Here the head of femur is surgically removed and a fibrous pseudo joint is formed. It is commonly done where degeneration of the joint has occurred and where total hip replacement is not possible.

4. Pectineal Myotomy: It is a controversial treatment. The pectineus is one of the muscles attaching the femur to the pelvis. By cutting and removing this muscle the tension of the joint and joint capsule are reduced. This will allow some pain relief but it will not slow down the pace of the disease.

5. Juvenile Pubic Symphysiodesis: This surgery prematurely fuses two pelvic bones together, allowing the other pelvic bone to develop normally. This changes the angle of the hip and lessens the likelihood of arthritis.

## Conclusion

Even though so many surgical methods are available for treatment of this condition, medical management is found to be beneficial as the symptoms will slowly disappear as the animal attains maturity. As this disease is having a genetic predisposition selective breeding is crucial in controlling this disease.

## VIEWS

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