

Conservative Management of Hip Dysplasia



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KEYWORDS

- Osteoarthritis • Nonsteroidal anti-inflammatory drugs • Physical therapy
- Weight management • Conservative management

KEY POINTS

- When developing a conservative management protocol for dogs with hip dysplasia (HD), a multimodal approach, which is tailored to the individual pet, should be used.
- Conservative management plans should be re-evaluated periodically and adjusted as needed, because a patient's needs change with time.
- Immature dogs with HD presenting with acute lameness at 3 months to 6 months of age can have spontaneous improvement in hind limb function once they reach maturity.
- Conservative management of HD often primarily involves treatment of osteoarthritis (OA). Nonsteroidal anti-inflammatory drugs (NSAIDs) are the mainstay of treatment of hip OA.
- There are many nonpharmacologic treatment options available for the conservative management of HD. Client education is an important component of the management protocol.

INTRODUCTION

HD is a common orthopedic condition seen in dogs characterized by laxity of the coxofemoral joint.¹ This can lead to significant pain and lameness due to subluxation, stretching of the joint capsule, and microfractures of the acetabulum in immature patients and OA in the mature patients.^{1–3} Both conservative and surgical options are available to treat immature as well as mature patients with clinical signs attributed to HD.^{1,2} Immature patients typically display hind limb lameness acutely between 3 months and 6 months of age. Spontaneous improvement in hind limb function, however, occurs in a large number of immature dogs with HD once they reach maturity.^{2,4,5} In a study comparing long-term results of conservative treatment to 2 surgical procedures (triple pelvic osteotomy and femoral head and neck excision), the investigators did not find a marked difference in ground reaction forces between

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dogs in the conservative treatment group and those in the triple pelvic osteotomy and control groups.⁵ Barr and colleagues⁴ also evaluated the long-term results of conservative management of 68 immature dogs in which HD was diagnosed at an early age. They found that 76% had minimal gait abnormalities at a mean of 4.5 years later. This spontaneous improvement may have been due to healing of microfractures of the dorsal acetabular rim as well as improved joint congruity and stability secondary to remodeling of the articular components and thickening of the joint capsule.⁶ It is, therefore, reasonable to initially manage immature patients conservatively and determine their response to conservative management. Mature patients tend to have a history of progressive hind limb lameness due to progressive OA and can also be managed conservatively.³ Conservative treatment is almost always the first step in management of patients with clinical signs attributed to HD. If they fail to respond, surgery should be considered. HD has a multifactorial mode of inheritance; therefore, even though a pet may be genetically predisposed to the disease, the severity and development of clinical signs can be altered by changing environment and lifestyle.^{2,7} In the immature dog, conservative management involves exercise restriction, weight control, analgesics, and physical therapy.⁸ In mature dogs, conservative management is focused on treating OA. The general goals of conservative treatment are to alleviate pain and discomfort, maintain function and range of motion (ROM) of the hip, and regain normal activity, thereby restoring quality of life. Another goal is to slow the progression of the disease, if possible, without causing significant side effects that ultimately affect quality of life.^{3,9} To achieve these goals, conservative management focuses on weight and body condition score, pain control, strengthening periarticular muscles, limiting excessive joint stress, maintaining or improving joint ROM and proprioception, maintaining or improving cartilage health, and limiting inflammation.⁹ Treatment can be divided into different phases depending on the age at presentation (ie, alleviating either acute or chronic clinical signs).³ Treatment in the acute phase involves strict rest, anti-inflammatory medications, and additional analgesics as needed. Introduction to physical therapy modalities, in particular those that alleviate pain and inflammation, can also be instituted.¹ Long-term management includes dietary, activity, and lifestyle changes to maintain quality of life and function.

PATIENT EVALUATION OVERVIEW

Management protocols for HD should be designed for the individual patient. Therefore, a comprehensive clinical evaluation, including gait assessment, neurologic evaluation, and evaluation for other orthopedic disease, is necessary prior to making treatment recommendations. NSAIDs are commonly used to manage the pain and inflammation associated with HD; therefore, comprehensive health panels are needed to screen pets prior to implementing NSAID treatment. Radiographs are important for assessing the severity of hip laxity/incongruity and the severity of secondary OA; however, decisions on treatment should be based predominantly on history, clinical signs on presentation, and the results of physical examination because there is poor correlation between radiographic findings, joint lesions, and clinical function in dogs with HD.^{4,10,11} Factors to consider when developing a treatment plan include age at initial diagnosis, level of discomfort, physical examination findings, radiographic findings, breed and temperament, client expectations for the pet, and owner finances.^{3,12} Conservative treatment can be divided into short-term treatment and long-term treatments.¹ Short-term treatment is aimed at the acutely affected patient to quickly address pain and decrease inflammation.³

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