Epsilateral Versus Contralateral Usage of Cane in Elders with Hip Osteoarthritis

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ABSTRACT

Background and Purpose: Hip pain is a common problem affects hip join, people suffering from painful hip or Osteoarthritis (OA) often walk slowly, take shorter steps and lean to the side of the painful hip during the weight bearing phase (stance Phase) to reduce stresses on the hip joint. However, this pattern of walking would result in excessive loading on other joints (lumbar vertebrae). Therefore, physiotherapists have to work toward this problem by advising the patients to how such gait pattern could be avoided and also prolong the life span of arthritic joint. This could be achieved through the use of a walking aid (cane, crutch or walking frame). Therefore, the purpose of this study was to determine the effect of using cane ipsilaterally and contralaterally on some gait parameters of elderly people with hip pain. ***Subjects and methods:*** *Fifty Saudi subjects were randomly collected. Twenty five were the patients group with hip OA and other twenty five were healthy control group their age ranged between 60-75 years old. Patient group was 16 female and 9 male. However, control group was 18 female and 7 male. Gait parameters were measured by using foot print method. The measured parameters were step and stride length, velocity and cadence.* ***Results:*** *Statistical analysis showed that walking with cane ipsilaterally and contralaterally have a significant effect in improving step length, stride length and velocity, however, there was a significant reduction of cadence. Also, there was a significant improvement of gait parameters with using cane contralaterally compared to ipsilaterally.* ***Conclusion:*** *It was concluded that gait parameters were significantly improved with using a cane both on the same side of pain and on the opposite side. However, using cane contralaterally was more effective in improving gait parameters.*

Key Words: Hip pain, hip Osteoarthritis, cane, gait parameters, foot print.

INTRODUCTION

The hip joint is the most important joint of the lower limb as it is the most proximal joint that provides stability and gross control in space for reminder of the leg[1]. It is the second link in the chain of weight transfer from the trunk to the ground. The structure of this joint allows for wide ranges of limb movement. These characteristics are necessary because of the mechanical conditions of normal daily activities place on the joint. The hip joint must distribute body weight and contribute to smooth, efficient ambulation. Therefore, physical therapists commonly see patients with problems related to the hip joint due to repetitive loading with resultant degeneration of the articular structure[2].

Patients with hip problems tend to assume postures that diminish the force through the joint. For example, to avoid pain, the patient tends to lean the body weight towards the affected side during walking to reduce the force upon the affected hip. This relatively extreme motions require high energy expenditure and in turn results in excessive wear and tear in the lumbar spine[3,4,5]. It was found that nearly 16% of people, whose age was 65 years and older reported that their activities were limited because of OA. This number is likely to grow proportionally as elderly people increasing. OA affects at least 6% of adults older than 30 years. Radiographic evidence of this disease is present in the majority of persons by 56 years of age and in about 85% of persons more than 75 years of age[6,7,8,9].

Osteoarthritis (OA) now is one of the most prevalent disabling diseases affect hip joint. Patients with hip OA often have gait abnormalities such as asymmetry in weight bearing and in step length. Patients with hip