

**ELECTRONIC GUIDE TO THESES APPROVED BY
PHYSICAL THERAPY DEPARTMENT FOR MUSCULOSKELETAL
DISORDER AND ITS SURGERY
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Physical Therapy Department for Musculoskeletal Disorder and Its Surgery

Doctoral Degree
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Title	:	Hip kinetic and kinematic analysis during unaided and aided gait after total hip arthroplasty.
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Abstract	:	
<p>This study was established to recognize three dimensional impairment of hip and pelvis occurs during the unaided and aided gait of total hip arthroplasty patients. This was done by three dimensions kinematics (hip and pelvis angular motion); and kinetics (force plate form, and Gluteus Medius activity) gait analysis. The results gained form 20 total hip arthroplasty patients were compared with that of 20 healthy matched volunteers. The patients walked with reduced stride length and frequency, resulting in reduced speed and increased stance ratio. Patients walked with decreased hip flexion, compensated by increased anterior pelvic tilt. The patients walked with delayed hip extension, with decreased extension moment. In addition, exaggerated lateral rotation of the affected hip, compensated by exaggerated internal rotation of the contralateral pelvis was detected. Increased hip adduction with massive pelvic drop was compensated with ipsilateral trunk lean towards the operated side. Using contralateral cane improved hip and pelvis impairments into three dimensions, but to a level still lower than normal.</p>		
Key words	1.	Gait analysis.
	2.	hip arthroplasty.
	3.	kinetics.
	4.	kinematics.
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