

Hip Spine Syndrome: Cross-Sectional Study Of Spinal Alignment In Patients With Coxalgia

Orthopaedics / Spine / Epidemiology, Prevention & Diagnosis

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Background

Multiple patients presenting with hip diseases also have coexisting spine diseases, that is called "Hip Spine Syndrome". Multiple spinal surgeons focused on the relationship between hip diseases and lumbar diseases. However, there are few reports which are evaluated total spinal alignments in patients with coxalgia. In recent years, spinal deformity patients with total spinal malalignments can be treated with correction and fusion surgery due to development of instrumentation. Further, these spinal deformity patients often also have hip diseases. When we plan treatment strategy, it is challenging to determine whether spine diseases have impacted hip joints or hip diseases have impacted spinal diseases.

Objectives

The objective of the current study was to evaluate the relationship between hip joints and spinal alignment in patients with coxalgia.

Study Design & Methods

A total of 100 patients with coxalgia (24 men, 76 women; average age, 60.0 years; age range, 16-88 years) were included. We retrospectively evaluated clinical findings and X-ray findings of hip joints and total spinal alignment as follows, 1) Range of Motion (ROM) score and Pain score from Japanese Orthopaedic Association (JOA) Hip Score, 2) Leg length discrepancy, 3) The stage of osteoarthritis (OA) of the hip, and 4) Spinal coronal balance (Cobb angle and C7-central sacral ventral line (CSVL)), 5) Spinal sagittal balance (sagittal vertical axis (SVA), pelvic tilt (PT), and pelvic incidence (PI))

Results

There were significant positive correlations between Cobb angle, C7-CSVL (spinal coronal balance) and the leg length discrepancy. ($r=0.21, 0.35$) There was also a significant negative correlation between Cobb angle and Pain score of the Hip. ($r=-0.22$) Further, there was a significant positive correlation between SVA (sagittal balance) and the stage of OA of the hip. ($r=0.35$) There was also a significant negative correlation between SVA and ROM score of the Hip. ($r=-0.37$)

Conclusions

In the current study, increasing the leg length discrepancy and hip pain might tend to influence spinal coronal malalignment. In addition, progressing the stage of OA and decreasing the ROM of the hip might tend to influence spinal sagittal malalignment. When

we evaluate spinal alignment, we should pay attention to OA, the leg length discrepancy, pain and ROM of the hip joint.