**DEXA Bone Density Scan: A Lateral Point of View**

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**Introduction:**

Osteoporosis is a silent affliction. Though usually painless, it may lead to fragility fractures. Fragility fractures of the spine are particularly painful and disabling, often leading to deformity, loss of function, and increased mortality. The most common fragility fractures are vertebral body fractures. Nationwide, osteoporosis is significantly underdiagnosed and undertreated. One of the many reasons for inadequate treatment of osteoporosis is that the traditional anteroposterior (AP) method of dual-energy x-ray absorptiometry (DEXA) bone density evaluation significantly overestimates bone density due to the presence of superimposed osseous structures and sclerotic degenerative changes.

**Purpose:**

The purpose of this study is to determine if the lateral lumbar spine DEXA is more sensitive than the traditional AP view in diagnosing osteoporosis. The authors hypothesize that these lower T-scores will result in a more realistic representation of bone composition, and thus, be a more sensitive predictor of future fragility fractures.

**Methods:**

Lateral lumbar spine views have been included in the DEXA scan protocol at St. Joseph Mercy Oakland since January 2019. In this retrospective study, an analysis of DEXA scans completed between January 2019 and January 2020 was performed. All patients who met the criteria for DEXA scan screening studies were included. The T-scores for both the lumbar and AP lumbar spine were analyzed using the SPSS statistics software version 25.0.

**Results:**

A total of 69 patients with a mean age 72.4 years ± 8.7 were included. Sixty-three (63) of the 69 patients were female. The T-scores of lateral lumbar spine views (mean, -2.8 +/- 1.6) were found to be significantly lower ($p<0.0005$) than that of AP views (mean, -1.2 +/- 1.4) on DEXA scans. This resulted in more frequent diagnosis of osteoporosis, with 62% (43/69) of patients being diagnosed with osteoporosis based on lateral view, compared to 17% (12/69) on AP view.

**Conclusion:**

Given the significant difference in T-scores between the AP and lateral lumbar spine views, lateral images resulted in a better estimate of bone density, leading to a more frequent diagnosis of osteoporosis. This is an untapped opportunity which may lead to dramatic changes in the standard of healthcare and has the potential to close the gap between prevention and treatment of fragility fractures.

**Author Photos:**


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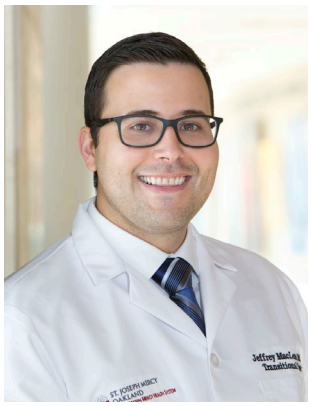

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