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Educational Abstract

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Revealing The Forgotten Singh Index For Osteoporosis Screening: A Review With Illustrative Case

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Learning objectives

To visualize and evaluate femoral trabecular pattern using Singh Index (SI) for osteoporosis screening in different adult age through conventional imaging.

Background

Osteoporosis is a common bone metabolic disease due to aging. It is characterized by low bone density and disruption of bone micro architecture which leads to compromised bone strength and increase risk of fractures. Bone mineral density is the gold standard to diagnose osteoporosis; however it's rather expensive and limited in some remote areas. Therefore a simple femoral x-ray, using Singh Index (SI), can evaluate bone trabecular status in order to grade bone density and eventually osteoporosis.

Findings & Procedure details

Singh Index (SI), a method to describe trabecular bone loss in the proximal femur, has been used as an indicator of osteopenia for decades. This grading system uses a scale from 1 to 6 with 1-3 as a definite osteoporosis and 4-6 as osteopenia to normal. In this review SI was evaluated through 6 female pelvic x-rays with different ages. Our illustrative cases range from 36 – 92 years old patients with grade 1 being the oldest while grade 6 being the youngest.

Conclusion

There are various advance methods to evaluate osteoporosis, however in resource-limited settings where advance techniques are not available, SI can be an inexpensive diagnostic tool for early predictions of osteoporosis.