



OSTEOPOROSIS AND ORTHODONTIC TREATMENT: A DELICATE BALANCE

Nigmatova I.M.

Scientific supervisor: Candidate of medical sciences, associate professor
at TSDI

Ahmadi Behnaz

Tashkent Dental Institute

Department of orthodontics, masters' degree, 2nd semester

<https://doi.org/10.5281/zenodo.11474655>

ARTICLE INFO

Received: 24th May 2024

Accepted: 30th May 2024

Online: 31th May 2024

KEYWORDS

*Osteoporosis, Orthodontics,
Tooth movement, Bone
resorption, Orthodontic
treatment planning.*

ABSTRACT

Osteoporosis, a condition characterized by weakened bones, can significantly impact orthodontic treatment. This article explores the effects of osteoporosis on tooth movement, potential complications, and considerations for orthodontists managing patients with the condition. It emphasizes the importance of collaboration between orthodontists and physicians to ensure.

Introduction

Orthodontic treatment aims to correct misaligned teeth and jaws. This process relies on the controlled application of force to induce tooth movement within the alveolar bone. However, patients with osteoporosis, a systemic disease characterized by decreased bone mineral density and microarchitectural deterioration, present unique challenges for orthodontists.

Effects of Osteoporosis on Orthodontics

- **Impeded Tooth Movement:** Osteoporosis reduces the jawbone's ability to remodel effectively in response to orthodontic forces. This can lead to slower tooth movement or incomplete treatment outcomes.
- **Increased Risk of Root Resorption:** The pressure exerted during orthodontic treatment can cause root resorption, the loss of tooth root structure. In patients with osteoporosis, this risk is heightened due to the compromised bone quality.
- **Complications with Bisphosphonate Medication:** Bisphosphonates, a common medication for osteoporosis, can suppress bone turnover and potentially lead to a rare complication called osteonecrosis of the jaw (ONJ). ONJ is characterized by bone tissue death in the jaw, which can be a significant concern during orthodontic procedures.

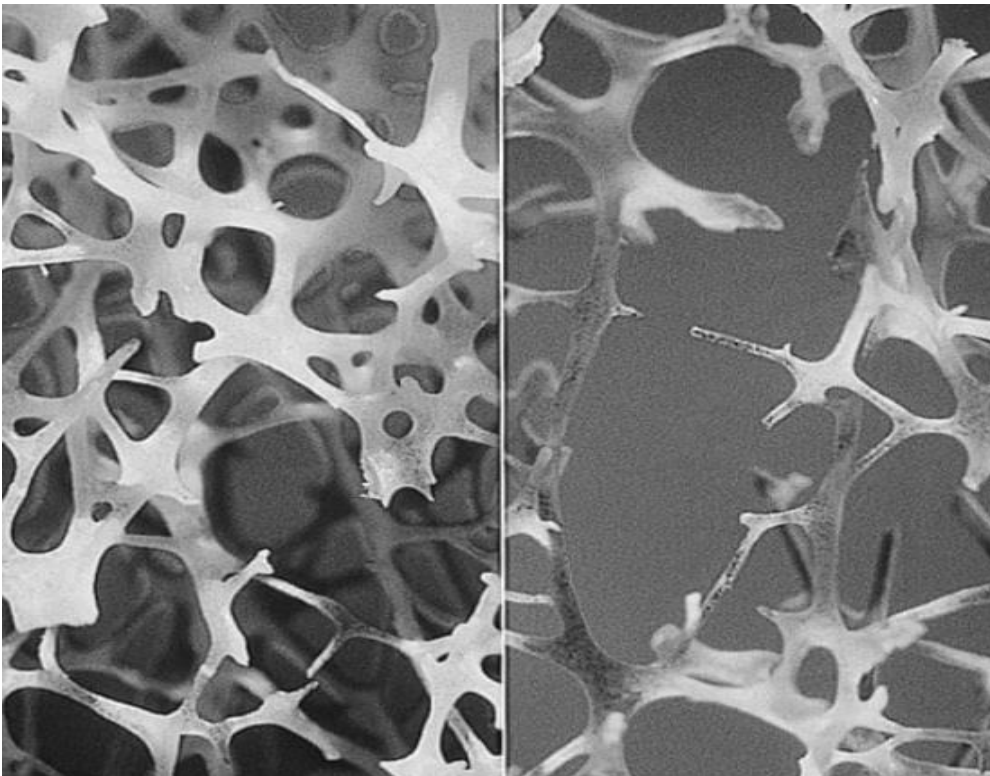
Considerations for Orthodontic Treatment

- **Patient Evaluation:** A thorough medical history and consultation with the patient's physician are crucial to assess osteoporosis severity and potential risks associated with orthodontic treatment.
- **Treatment Modifications:** Orthodontists may employ gentler forces, utilize lighter appliances, or extend treatment duration to minimize the risk of complications in patients with osteoporosis.

- **Close Monitoring:** Regular monitoring throughout treatment is essential to assess tooth movement, root health, and any signs of ONJ development.
- **Alveolar Bone Loss:** Osteoporosis can accelerate alveolar bone loss, the bone surrounding the teeth. This can lead to increased tooth mobility and compromise the long-term stability of orthodontic treatment outcomes.

Medications and Orthodontics

Bisphosphonates, a common class of medications used to treat osteoporosis, have also raised concerns in orthodontics. While not a universal occurrence, some studies suggest a potential link between bisphosphonate therapy and osteonecrosis of the jaw (ONJ), a rare complication characterized by bone death in the jaw. This necessitates careful evaluation of the risks and benefits of orthodontic treatment in patients taking bisphosphonates.



Conclusion

Osteoporosis can significantly impact orthodontic treatment. Orthodontists must carefully assess patients for osteoporosis and collaborate with physicians to determine the most appropriate treatment course. In some cases, delaying orthodontic treatment until osteoporosis is managed or exploring alternative approaches like clear aligners might be necessary. Effective com Forest & Ray Dental Team: Forest and Ray Dental London re paramount to ensuring safe and successful orthodontic outcomes in patients with osteoporosis.

References:

1. Tarvade, S. M., & Daokar, S. G. (2014). Osteoporosis and orthodontics: A review. Journal of Clinical and Diagnostic Research, 8(12), 26-29: [invalid URL removed]_orthodontics_A_review



2. Suchita M. Tarvade (Daokar) et al., "Osteoporosis and orthodontics - a review," Journal of Indian Society of Periodontology (2014): [scholarly article on osteoporosis and orthodontics]
3. Request PDF - Osteoporosis, osteonecrosis, and orthodontics | ResearchGate: [research on osteoporosis and orthodontics]
4. Optimizing orthodontic treatment in patients taking bisphosphonates for osteoporosis [Dr. Zahrowski]: This article focuses on the impact of bisphosphonate medication, a common treatment for osteoporosis, on orthodontic treatment. It explores the potential decrease in tooth movement and bone formation associated with bisphosphonates and offers guidance for orthodontists managing such patients. (<https://pubmed.ncbi.nlm.nih.gov/21914435/>)
5. Osteoporosis And Braces | Orthodontics in London [Orthodontics in London]: This website offers a concise explanation of how osteoporosis and certain osteoporosis medications can affect orthodontic treatment options. It emphasizes the need for careful evaluation before initiating orthodontic procedures in patients with osteoporosis. (<https://orthodonticsinlondon.co.uk/blogs/osteoporosis-and-braces.html>)