

*Saeed Khamseh zade*

**IMPLANT-ASSOCIATED VERTICAL ROOT FRACTURE IN ADJACENT ENDO  
TREATED TEETH. A CASE SERIES AND SYSTEMATIC REVIEW**

*Scientific advisor: assist. prof. PhD Malkovets O. G., Gubkina A. V.*

*Department of General Dentistry  
Belorussian state medical university, Minsk*

**Introduction.** This study aimed to report a possible effect of the presence of an adjacent implant on the development of a vertical root fracture (VRF) in endo treated teeth.

**Materials and methods.** A series of 8 cases in 7 patients with teeth diagnosed with VRF after the placement of implants in the adjacent area. The inclusion criteria for the selected cases and studies in the systematic review were as follows: the implants were placed adjacent to endo treated teeth with no periradicular pathology; there were occlusal contacts between the endo treated teeth and the opposing teeth; the VRF was diagnosed after implant loading based on a clinical and radiographic evaluation; the VRF was confirmed by microscopic evaluation of the extracted. To assess the data was used the program "Statistica". In defined group of 30 patients (20 males and 10 females between 23-65 years old) were evaluated:

**Results.** In maxillary first premolars the most common root number was two (52%) and most of these teeth showed Type IV canal configuration (53%), also was shown Type II (18%) and Type I (6.5%) ; in maxillary second premolars the most prevalent were one rooted teeth (83%) and most of these teeth showed Type I canal configuration (47,3%), also was shown Type II (8%); mandibular first premolars had a single root (94.5%) and most of these teeth showed Type I canal configuration (61.5%) also was shown Type II (8.5%) and Type III (6%); mandibular second premolars had a single root in 100%, the most common canal configuration was Type I (79%) also was shown Type III (9%)

**Conclusion.** The case series analysis revealed that the time from implant placement to the diagnosis of VRF was between 5 and 28 months (average=11 months). The majority of cases occurred in female patients who received 2 or more implants. Six of the 7 patients were older than 40 years, with an average age of 54 years. The majority of teeth with VRF were premolar or mandibular molar teeth (6/8 teeth). All fractured teeth had been restored with a canal filling was determined to be adequate. The systematic review revealed that implant-associated VRF has not been investigated or reported in the literature yet.