

Results: The mean age of the patient was $41,58 \pm 2,17$ years. Six patients who had type B (Misch) atrophy, with the mean age $38,8 \pm 5,09$ years, were rehabilitated using synthetic bone grafts and immediate implant placement. This is a simple method which provides a good outcome. Three patients with the mean age $43,3 \pm 6,38$ years, were treated using autogenous and synthetic bone grafts with delayed implant placement, this method can provide a better understanding of patients force factors, but this procedure requires additional surgical interventions. The average age of 5 patients with available bone type B+, B-w by Misch, was $46 \pm 4,08$ years, the mean width of the alveolar crest before procedure was $3,56 \pm 0,44$ mm, they were treated using osseosplitting method, after the procedure the width of the alveolar crest was approximately 5 mm. This method is useful when a wider implant is needed to be placed to ensure a better stability with a predictable result. Two patients who suffered from type D atrophy were rehabilitated using alveolar distraction osteogenesis. Since its introduction in 1996, this procedure has been considered a viable technique for reconstruction of alveolar bone before implant placement. At the end of this procedure we increased the height of alveolar crest by 10 mm.

Conclusion: One should take in consideration the individual clinical situation, professional skills, the ratio between the risk, complications and expected results, and the psychological status of patient before choosing one of the modern methods of oral rehabilitation.

Keywords: Bone grafts, atrophy, prosthetically driven implants

14. EVOLUTION OF NON-REMOVABLE ORTHODONTIC APPLIANCES

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Introduction: The father of modern orthodontics is considered to be an U.S. orthodontist E.G. Engle (1855-1930), who authored the most famous classification (1898) and created universal orthodontic device. It was E.G. Engle who organized the first orthodontics association, the first scientific orthodontic magazine, the world's first institute of orthodontics. The main discovery of Professor Engle was the arc (sliding arc, fixed arc, expansive arc) and their use in various devices directed towards the treatment of most types of anomalies.

Purpose and Objectives: to analyze comparative assessment between Engle's devices and their contemporary modifications.

Materials and methods: Engle's sliding arc is effective in the sagittal plane. Stationary arc of Engle uses to move individual teeth or groups of teeth. If it is used on both jaws at the same time including elastic traction it can result in sagittal, vertical and transversal movement of the teeth. Engle's expansionary arc is used both in the sagittal and vertical planes. Engle's device "Pin and tube appliance", (1912)- vertical processes (pin) soldered to the arc, for each tooth bandage ring is fixed with soldered vertical pipe (tube) that is inserted in the vertical processes on wire arc. A.G.Engle constantly modified his devices that created the ejuas-technique. Engle's device "Ribbon arch appliance" (1920)- specially developed bracket (lock) with a vertical slot in which the wire arch was installed and was fixed by means of bronze pins, the ends of which were bended. In 1928 was designed the original building of locking arrangement-brackets and rectangular arc, i.e. ejuas-technique.

Results: Modern non-removable orthodontic appliances are mostly built on the principle of universal Engle's device: braces (metal, ceramic, sapphire), locks or rings with a lock on molars, orthodontic arc (steel and nickel titanium, round and rectangular), elastic or metal ligatures, elastic traction, as well as the opening and closing springs, and so on.

Keywords: non-removable orthodontic appliances, Engle's device