

## **Dental implantation with endoscopic visualization in patients with multiple sclerosis and scleroderma**

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Currently, about 3 million people in the world are suffering from multiple sclerosis as well as scleroderma. These two diseases are very difficult to diagnose. Often their symptoms coincide with the symptoms of autoimmune diseases such as Sjogren's disease, lupus erythematosus and many others. In practice, dentists do not often have patients with these diagnoses. Therefore, it is very important to know about the symptoms of the disease and the possibility of rehabilitation of such patients. Loss of speech, difficulty swallowing and chewing food, dry mouth, ulceration of the mucosa, its atrophy lead to the development of caries, periodontitis, and also adentia. A very important stage in the rehabilitation of patients is the elimination of defects in the dentition, which makes it possible to increase the self-esteem of these patients and to rehabilitate them in the society. With scleroderma, as well as with the spastic form of multiple sclerosis, patients suffer from tooth decay and its complications. At best, such patients can open their mouths to a maximum of 2 cm. Therefore, curing caries or its complications (periodontitis or pulpitis) is practically technically impossible due to poor visualization. It is very difficult to introduce instruments into the oral cavity. Quite often, we experienced difficulty in introducing the intraoral chamber into the oral cavity. Therefore, on plastic phantoms we have developed the technique of endoscopic treatment of caries and its complications. Also technically on models with mucosal imitation we worked out the technique of transcutaneous dental implant placement, especially in the field of painters and pre-molars, which is the beginning of the first operation to be presented at this symposium. We believe that endoscopic technique will not only help in the treatment of such diseases, but also help to expand visualization in hard-to-reach places in the practice of a dentist, as well as for qualitative endodontic treatment.

The use of support endoscope makes a minimally invasive and more predictable procedure possible, in terms of greater conservation of bone tissue, less tissue damage, and minimization of blood loss. Some authors have reported and recommended its use for the removal

of ectopic teeth located on sites like the duct, sinus, nasal fossa, and condyle; for the removal of implants displaced into the sinus and for the removal of ectopic third molar and lesions like ameloblastic fibroodontoma or schwannoma.

Nevertheless, some considerations are necessary for this procedure. First, the technique requires a core team of endoscopic and specially instructed surgeons. The endoscope provides a magnified image of two dimensions on a video monitor at a distance, thus requiring the event of specific hand-eye coordination, with a broad understanding of the three-dimensional concept of oral and maxillofacial surgical anatomy. Second, it's limited its use to when the aim of removal is large; a situation that's overcome by the mixture of SE macroscopic optimized for controlled milling of the tooth in reference to bone, with IE that permits microscopic visualization of 40x magnification for detailed discrimination of hard and soft tissue, minimizing the extent of risk of the procedure.