



Statement by the American Association of Oral and Maxillofacial Surgeons Concerning the Management of Selected Clinical Conditions and Associated Clinical Procedures

Oral and Craniomaxillofacial Implant Surgery

Section 1: Parameters of Care as the Basis for Clinical Practice

Introduction

This statement is intended to summarize the procedures used in the management of patients presenting for care by oral and maxillofacial surgeons. The definitive guide to the management of such patients is *Parameters of Care: AAOMS Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParCare) Sixth Edition 2017*. Any references used in the development of this statement can be found in *AAOMS ParCare 2017*. This statement is not intended as a substitute for *AAOMS ParCare 2017*, but rather as a synopsis of the information contained in *AAOMS ParCare 2017*.

Section 2: Oral and Craniomaxillofacial Implant Surgery

Preface

The successful replacement and restoration of missing or dysfunctional structures necessitates knowledge and understanding of the complex interrelationships of function and form in the oral and maxillofacial region. The overall goal of treatment is to allow replacement and improved function of the defective or missing structures.

The magnitude of tooth loss in the United States remains excessive despite the reduction in dental caries and increased availability of care. Some 24.4 percent of the population 65 years of age and older is edentulous¹. In the past, these individuals have been treated with either removable (partial or complete dentures) or fixed (crowns and bridges) prostheses. Often these treatments are inadequate and actually contribute to additional tooth and supporting bone loss due to the influence of overloading stresses, underlying metabolic dysfunction, etc. Neurologic dysfunction and facial pain often occurs from overloading stresses caused by removable appliances (partial or

complete dentures) on various nerve foramina of the mouth.

When teeth are lost, added stresses are transferred to the remaining dentition, which further accelerate this destructive process. As the patient ages, these stresses typically result in the loss of additional teeth and/or bone. As masticatory function diminishes, such individuals suffer nutritional disturbances due to the inability to properly chew a healthy diet. Others are in jeopardy of pathologic jaw fracture from progressive bone loss. Tooth loss also contributes to bite disturbances, which may manifest as either acute and/or chronic facial pain in the form of temporomandibular joint dysfunction.

Definitions

Oral implant reconstructive surgery involves the use of dental implants to restore function to the edentulous or partially edentulous maxilla or mandible. Implants may also be placed in other facial bone structures to support a maxillofacial prosthesis such as eyes, ears, nose or other missing structures.

Indications

Indications for treatment, according to *AAOMS ParCare 2017*, may include one or more of the following:

- Masticatory dysfunction from maxillary and/or mandibular partial or complete edentulism with alveolar atrophy.
- Speech impairment.
- Behavioral or psychological impairment.
- Neurologic dysfunction from nerve compression.
- Soft-tissue irritation.
- Esthetic deficiency and/or compromise.
- Hard- or soft-tissue defects resulting from tumor surgery and/or trauma.



- Craniomaxillary deformities.
- Reaction to conventional restorative materials.
- The inability to tolerate conventional prosthetic appliances such as obturators and/or full or partial prostheses.
- Neuromuscular disorders that make it difficult or impossible for patients to tolerate their prostheses (e.g., hyperactive gag reflexes, orofacial dyskinesias and CVA).

Functional impairments resulting from tooth loss are well-defined and commonly mitigated with the use of dental implants and subsequent prosthetic restoration. These impairments may include:

- Masticatory dysfunction.
- Speech and articulation errors.
- Dysphagia.
- Pain secondary to chronic mucosal irritation and ulceration.
- Recurrent and multiple mucosal ulcerations.
- Xerostomia.
- Pain secondary to chronic compressive neuropraxia.
- Pathologic jaw fracture.
- Hyperactive gag reflex.

The causes of bone and/or tooth loss may include congenital deformities (e.g., cleft palate, dentoskeletal deformities, amelogenesis or osteogenesis imperfecta, ectodermal dysplasia). Acquired metabolic disorders (e.g., hyperparathyroidism, Sjögren's Syndrome, renal failure, diabetes mellitus and osteoporosis) may be manifested in the jaw with accelerated bone loss, thus requiring special consideration. Tumor resection may result in hard- and soft-tissue loss in the oral and facial area with possible functional impairment.

Treatment Goals

The goals of implant reconstructive surgery are to restore function, improve mastication, speech, deglutition and appearance as well as to preserve the remaining natural structures whether bone, soft tissue or tooth. Limitation of pain, prevention of gagging, improved stability of obturators and prostheses, and limitation of any period of disability also are benefits of such reconstruction. In addition, implants may improve patients' social and psychological well-being.

The placement of implants may also require the use of hard-tissue and/or soft-tissue grafts. The type of graft material as well as the grafting technique varies based on the indications for treatment and/or the degree and type of deformity present.

Summary

Extensive research has documented the long-term success of implant reconstruction in revolutionizing the restoration and replacement of missing body parts. Experience to date demonstrates extremely high success rates with a variety of implant systems and applications (89 to 98 percent). In addition, it has been demonstrated that bone loss may be arrested in the region of implants because the normal stress distribution of the bone is restored.

¹ 1999 data from the BRFSS (Behavioral Risk Factor Surveillance System, www.cdc.gov/brfss and also from the National Oral Health Surveillance System, www.cdc.gov/nohss) AAOMS, Rosemont, IL.