

REHABILITATION OF AGENESIA 2.2 WITH PRAM INVOLVEMENT. CASE REPORT

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Abstract

Dental implants in dental agenesis are an effective and sustainable solution for replacing missing teeth in patients who have not developed some or more teeth permanently. Dental agenesis is a condition in which one or more teeth do not form or erupt normally. In the case of dental agenesis, dental implants can be used to replace missing teeth, giving the patient an aesthetic smile and the necessary functionality during chewing and speaking. Here are some important discussions about dental implants in the dental agency: Individual evaluation: Each patient with dental agenesis will be evaluated individually by the dentist. Issues such as the number and position of missing teeth, bone quality, and patient orofacial structure will be analyzed. The personalized treatment of each patient with dental agenesis has a unique situation, and the treatment of dental implants is personalized according to the needs and anatomy of the patient. Dental implants offer a predictable and sustainable treatment option. The stability of dental implants is anchored directly in the jaw or mandibular bone, providing stability and functionality similar to natural teeth. This allows patients to chew and speak without discomfort or restrictions. Aesthetic dental implants can be designed to match the teeth and shape of the patient's face, thus contributing to the nature of the aesthetics of the smile. They can be made with high quality materials and can be customized according to the color and shape of the patient's teeth. Preserving the bone structure of dental implants helps maintain the health of the jaw bones

Keywords: dental implant; rehabilitation; dental agenesis; prama

Introduction

The use of dental implants in dental agenesis is an innovative and effective solution for patients who have lost one or more teeth as a result of a congenital condition or trauma. Dental agenesis is a condition characterized by the absence of the development of one or more teeth in the dental arch [1-3].

Throughout history, people have sought ways to replace missing teeth to restore the functionality and aesthetics of the smile. In ancient times, there are various primitive methods of replacing missing teeth, such as fixing artificial teeth used to use gold threads or iron wire. However, these methods were often temporary and posed risks to oral health [3-6].

Modern dental implants began to be developed in the 1950s by Swedish researcher Per-Ingvar Brånemark. Brånemark discovered that titanium integrates naturally with bone tissue, in

a process called osteointegration, this discovery paved the way for the development of modern dental implants [1-4].

In the 1960s, the first screw-shaped dental implant was successfully inserted into the mandible. Over the years, research and technological development have allowed the development of dental implant materials and techniques. Today, dental implants are made of titanium or other ceramic and are designed to provide a solid and durable base for tooth replacement [6-8].

The procedure for inserting a dental implant in case of dental agenesis involves several stages. First, the implant is inserted into the jaw or mandibular bone through minor surgery. After insertion, a healing period is allowed in which the implant integrates into the bone. This can take several months [8-12].

After the bone has healed and the implant has been integrated, the stage of fixing the dental crown or dentures on the implant follows. This is done by a dentist specializing in oral restoration. The dental crown or dentures attached to the implant will function as a natural tooth and will give the patient functionality and aesthetics [12-14].

Dental implants in dental agenesis have had a significant impact on patient's lives, allowing them to regain confidence in their smile and enjoy normal oral functionality. Dental implants are currently considered the most effective solution for replacement [14-18].

Dental agency, also known as dental agenesis, is a condition in which one or more teeth do not form or erupt normally. This can have several causes, and in this paper, we will explore genetic factors, environmental factors, and genetic syndromes associated with the emergence of the dental agency. We will also discuss the clinical implications of these conditions and available treatment methods [18,19].

Causes of the dental agency.

Genetic factors: One of the most important factors in the development of dental agencies is genetically predisposed. Research has identified several genes involved in tooth development, and mutations in these genes can lead to dental agency. For example, mutations in the *MSX1* and *PAX9* genes are associated with permanent tooth absence, while mutations in the *WNT10A* and *EDA* genes can cause dental agenesis accompanied by other ectodermal abnormalities [19,20].

Environmental factors: Certain environmental factors can influence the development of teeth and contribute to the emergence of dental agencies. For example, exposure to toxic substances during pregnancy, such as drugs or chemicals, can have negative effects on fetal dental development. Nutritional deficiencies and physical trauma can also play a role in the development of dental agencies [20,21].

Genetic syndromes: The dental agency can be associated with various genetic syndromes. Hypohydric ectodermal syndrome (HED) is one of the most common genetic conditions associated with dental agency [21,22].

Patients with HED often have a congenital absence of several teeth, especially permanent teeth. Other genetic syndromes that may be associated with the dental agency include Down Syndrome, Rapp-Hodgkin Syndrome, and Witkop Syndrome.

Clinical implications of the dental agency. Dental agencies can have a significant impact on health and oral functionality [20-22].

The absence of teeth can lead to difficulties in chewing and speaking and the aesthetic aspect can be affected, which can have consequences on the confidence and quality of life of patients. The absence of teeth can also cause problems with the alignment of neighboring teeth, as they can migrate to empty spaces [18-22].

Materials and methods

Implant insertion involves several steps, which may vary depending on the individual case and the procedures for using the dentist. In general, the main stages of inserting an intraosseous dental implant include:

Initial assessment: Your dentist will assess the general condition of your dental health and perform a detailed clinical examination, which may include radiographs and images with computed tomography to assess bone density and anatomical structure of the area where the implant will be inserted.

Treatment planning: Based on the initial assessment, the dentist will create a personalized treatment plan for the insertion of the dental implant. This plan will include details of the procedure, the number of implants required, and any other necessary additional interventions, such as bone augmentation or sinus elevation.

Anesthesia: Before starting implant insertion procedures, local anesthesia will be given to ensure comfort and the absence of pain during surgery.

Tooth extraction (if required): If there is a damaged tooth or one that needs to be replaced with an implant, the dentist may remove it before inserting the implant. This stage is not necessary in all cases.

Bone processing (if required): If the bone structure is not dense enough or does not provide sufficient support for the implant, bone processing may be required. This may involve the addition of bone growth material or sinus elevation in the case of dental implants in the upper jaw area.

Making the incision: The dentist will make an incision in the gum to reveal the underlying bone and create an access channel for inserting the implant.

Implant insertion: Using special tools, the dental implant will be inserted into the jaw or mandible bone. The implant is screwed or carefully beaten into the bone until it reaches the desired level.

Closing the gum: After inserting the implant, the gum is sewn to ensure adequate healing.

Healing period: After the surgical procedure, the dental implant needs time to integrate into the bone of the jaw or mandible, in a process called osseointegration. This healing period can take several weeks to several months, depending on the individual case.

Addition of prosthetic components: After the dental implant has integrated into the bone and the gum has healed, the protein component will be added.

Results and discussion

Dental implants in dental agenesis are an effective and sustainable solution for replacing missing teeth in patients who have not developed some or more teeth permanently. Dental agenesis is a condition in which one or more teeth do not form or erupt normally.

In the case of dental agenesis, dental implants can be used to replace missing teeth, giving the patient an aesthetic smile and the necessary functionality during chewing and speaking. Here are some important discussions about dental implants in the dental agency:

Individual evaluation: Each patient with dental agenesis will be evaluated individually by the dentist. Issues such as the number and position of missing teeth, bone quality, and patient orofacial structure will be analyzed.

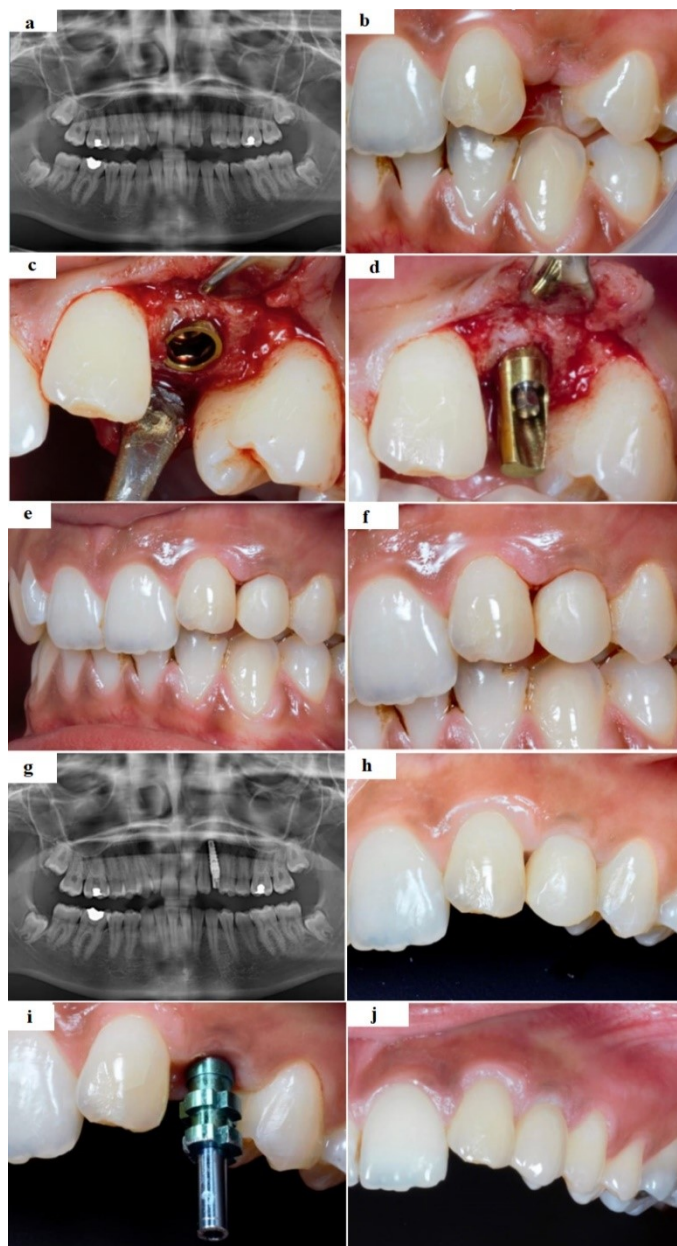


Fig. 1. Images taken during procedures: a. Initial OPT; b - clinical evidence; c - Implant insertion in site 2.3; d - Villar positioning; e - Insertion of the temporary crown, just 15 minutes after surgery; f - Temporary crown; g - OPT immediately postoperatively; h - Control after 30 days; i - Definitive fingerprinting; j - Final crown in situ

Treatment planning: Based on the initial assessment, the dentist will develop a personalized treatment plan. It will include the number and position of the necessary implants, possible bone growth procedures, or other interventions to ensure a solid implant load.

Use of dental implants with appropriate dimensions: Selecting implants with appropriate dimensions is essential to ensure stability and durability over time. The dentist will consider the anatomy and bone structure of the patient to choose the right implants.

Bone augmentation: If the patient has an insufficient amount of bone, it may be necessary to achieve a complete increase before inserting the implants. This may involve the addition of bone growth material to create adequate support for implants.

Aesthetics: Replacing missing teeth in dental agencies is not only about functionality but also about aesthetics. The dentist will work with the patient to obtain an aesthetic result of harmonies, taking into account aspects such as the shape, size, and color of the replaced teeth.

Postoperative care: After inserting the implants, the patient must follow the dental medical instructions regarding oral hygiene and postoperative care. Good oral hygiene and regular visits to the dentist are essential for maintaining the long-term health of implants and surrounding tissues.



Fig 2. CBCT control at 7 months

Long-term planning: Dental implants in dental agenesis can be a long-term solution, but it requires planning and a well-developed treatment plan but also regular check-ups.

A 20-year-old girl, a smoker, without a previous pathology, showed up at the office with the agenesis of item 2.2 and the transposition of the canine instead of the side incisor.

The treatment plan involves inserting a 4.25 x 11.5 Prama implant and a temporary crown for immediate loading.

Already at the 30-day control, it can be seen that the healing of soft tissues takes place in an extremely favorable manner, however, the papilla has not yet completed its maturation process.

The final crown is made 7 months after the operation: due to the intramucosal neck of the Prama implant, it was possible to optimally manage the various bone levels and achieve complete healing, in which the papillae have come to completely cover the spaces since their elimination, without the need to resort to any graft or additional material. Radiographic control confirms the perfect maintenance of the bone level.

Conclusions

The personalized treatment of each patient with dental agenesis has a unique situation, and the treatment of dental implants is personalized according to the needs and anatomy of the patient. Dental implants offer a predictable and sustainable treatment option.

The stability of dental implants is anchored directly in the jaw or mandibular bone, providing stability and functionality similar to natural teeth. This allows patients to chew and speak without discomfort or restrictions.

Aesthetic dental implants can be designed to match the teeth and shape of the patient's face, thus contributing to the nature of the aesthetics of the smile. They can be made with high-quality materials and can be customized according to the color and shape of the patient's teeth.

Preserving the bone structure of dental implants helps maintain the health of the jaw bones.

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