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Complications Related To The Retention Of Impression Material In The Submucosa In Immediate Loading Dental Implants Rehabilitations - A Clinical Alert.

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SHORT COMMUNICATION

ABSTRACT

The increasing use of osseointegrated dental implants and modifications in surgical techniques has increased the number of unpredictable events during and after surgery. Complications are described as intercurrences in the course of the treatment and, when resolved, do not compromise the outcome. However, when unresolved, they lead to the failure of the rehabilitation. A new clinical complication that has arisen in cases of full arch immediate loading implants is the presence of impression material inside the tissues, that can cause dehiscence of the sutures, infection and severe postoperative pain. Therefore, a careful suture should be carried out using the correct suture thread and the correct positioning of the tip of the impression syringe so that the material is not inserted into the tissues. The aim of this short communication is to highlight the necessary care and alert colleagues to the signs and symptoms of this type of complication.

Keywords: Dental implant. Dental implant complications. Dental impression materials.

Complicações Relacionadas à Retenção de Material de Moldagem na Submucosa em Reabilitações Implantossuportadas com Carga Imediata - Um Alerta Clínico.

RESUMO

O crescente uso de implantes dentários osseointegrados e modificações nas técnicas cirúrgicas aumentaram o número de eventos imprevisíveis durante e após a cirurgia. As complicações são descritas como intercorrências no decorrer do tratamento e, quando resolvidas, não comprometem o resultado. Porém, quando não resolvidos, levam ao fracasso da reabilitação. Uma nova complicação clínica que tem surgido nos casos de implantes de arcada completa com carga imediata é a presença de material de impressão no interior dos tecidos, que pode causar deiscência das suturas, infecção e intensa dor pós-operatória. Portanto, deve-se realizar uma sutura cuidadosa utilizando o fio de sutura correto e o posicionamento correto da ponta da seringa de moldagem para que o material não seja inserido nos tecidos. O objetivo desta breve comunicação é destacar os cuidados necessários e alertar os colegas para os sinais e sintomas deste tipo de complicação.

Palavras Chave: Implante dentário. Complicações em implantes dentários. Materiais de moldagem

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SHORT COMMUNICATION

During the late 1990s dental professionals began to switch from late loading to immediate loading of osseointegrated dental implants, and several studies showed the positive results of precocious loading, especially in the edentulous mandible.[1,2,3,4]

The reduction of treatment time may explain the popularity of immediate loading in modern implant dentistry. It is in the patient's interest to shorten the time between implant placement and the installation of a prosthesis, in order to make treatment more comfortable and for the patient to be returned to normal aesthetics faster.[5]

As in procedures for conventional implants, the outcome of the treatment depends largely on the type of patient (health conditions, oral hygiene, habits, smoking, etc.), on the prosthetic planning, on the dentist's surgical skill and the quality of the prosthetic rehabilitation. The surgical procedure is compatible with the conventional procedure, but the post-operatory prosthetic rehabilitation may be a problem for some dentists due to the presence of bleeding and edema of the soft tissue.

Although the use of osseointegrated implants for rehabilitation of edentulous areas is a safe and successful treatment modality, longitudinal studies have shown that there are early-stage and late-stage complications.[6]

Late-stage complications can occur after surgery or after restoration and may include failure of the prosthesis, peri-implantitis and fracture of the implant.[7,8] Early-stage complications occur before osseointegration[6] and are generally due to the trauma that the procedure inflicts on the mucosa, alveolar tissue and adjacent anatomical structures. These complications may include swelling or hematoma, prolonged bleeding, pain, neurosensory disorders, mandibular fracture, infection or failure of the implant osseointegration.[9]

The most common postoperative complication of submerged implants is wound dehiscence. The prevalence of this problem varies from 4.6% to 13.7% in submerged implants.[10,11] Factors that may contribute to the opening of wounds include infection, rupture of the suture, suture tension and flaps with defects. Infections along the suture thread can be due to contamination, retained suture thread or loose cover

screws.[12] The dehiscence of wounds can be avoided if the wound edges are passively adapted and free of tension.

Although they have not been described in the literature, there are also cases of dehiscence and/or post-operative infection associated with the retention of impression material inside the surgical flap, when the impression procedure is carried out immediately after implant placement. Usually, the patient complains of pain and the clinical examination of the area may reveal suture dehiscence and the presence of the retained material (Figures 1 a, b, c, d, e), this can occur in both mandible and maxilla.

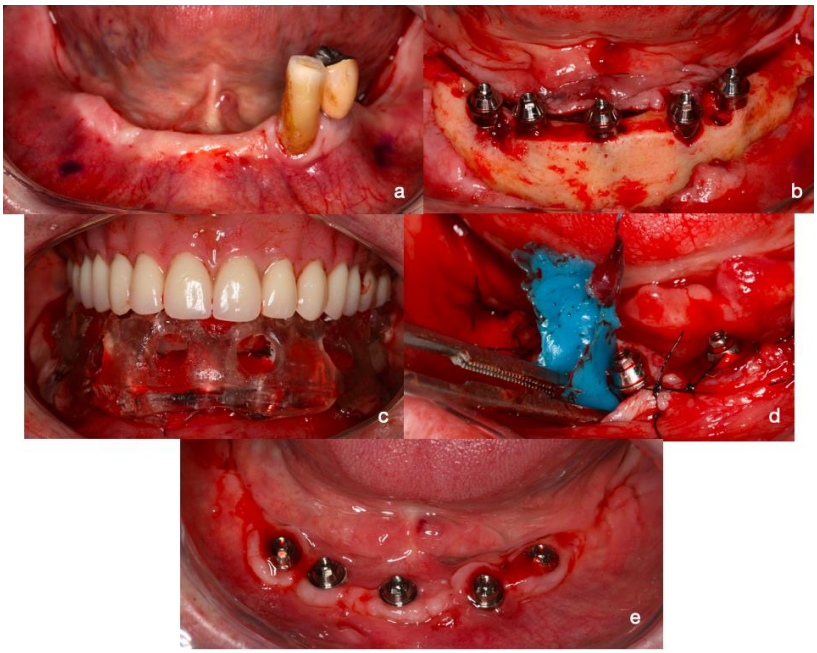

Figure 1a – Initial clinical case. Patient showing a large mandibular bone loss. Only the right canine and first premolar were present. 1b - Surgery: dental extractions, bone regularization (osteotomy) and placement of 5 dental implants between the mentual foramens. 1c - Immediate impression procedure after the placement of implants for protocol Branemark Type I prosthesis. 1d – After two post-operatory days patient with pain complain and presence of impression material inside the soft tissue. Local anesthesia was carried out, the impression material was removed and a profuse irrigation with saline solution was carried out. 1e - Improved clinical status after 7 days.

This type of complication can be avoided if a careful simple interrupted suture and a mattress suture is carried out, the correct type of suture thread is correctly selected, and the tip of the impression syringe is positioned so that the impression material is not introduced into the tissue. Commonly found in surgical areas where dental extractions and/or large osteotomies were carried out with immediate impression and without care of directing the syringe tip towards the incision area.

It can be also found in late time by monthly or annual controls, when the patient

did not have the acute setting (Figures 2 a, b, c, d, e, f, g e h). It may be observed bone loss, through radiographic examination, due the presence of the impression material inside the soft tissue. Therefore, it is also important to maintain post-operative clinical and radiographic control.

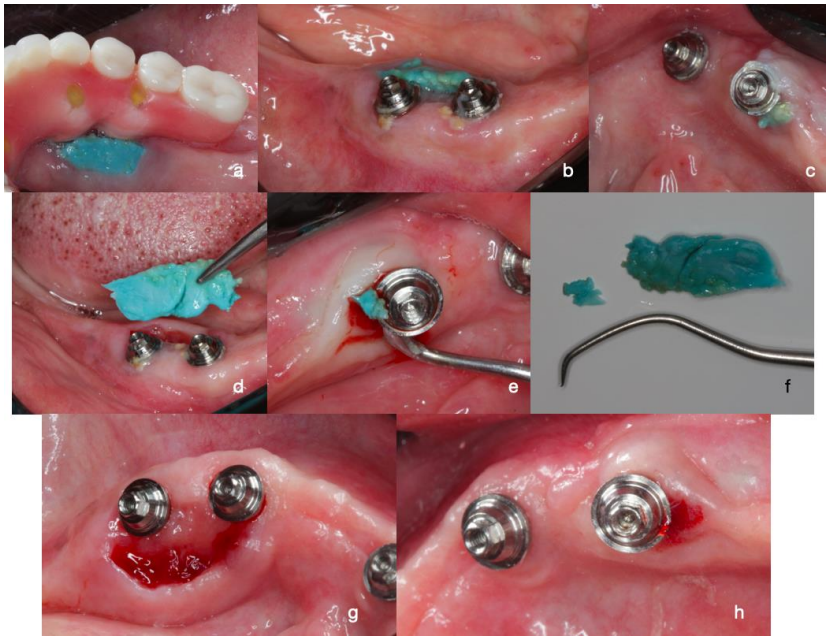

Figure 2a – Patient complaining of volumetric increase in the lingual region after 5 months of installation of Branemark Type I prosthesis in immediate loading. It is possible to notice the presence of impression material below the prosthesis and within the soft tissue. 2b – After removing the prosthesis, it was possible to notice the presence of bacterial plaque and the impression material retained in the lingual mucosa. 2c – In the clinical examination, another area with retention of the impression material was found. 2d – After local anesthesia, the impression material was removed and profuse irrigation with saline solution was performed. 2e – The material was removed after local anesthesia and the area profuse irrigated with saline solution. 2f – Impression material that was retained in the soft tissues. 2g – Immediate aspect of the fabric after removal of the impression material showing that the material was retained by the soft tissue. 2h – Immediate aspect of the soft tissue after removal of the impression material.

In order for rehabilitation with osseointegrated implants to be considered successful the soft tissue must heal fully. Although the healing process of the oral mucosa involves hemostasis, inflammation, proliferation and remodeling, similar to skin healing, the process is faster and results in the formation of less fibrous scar tissue.[9] The risk of implant failure due to infection is higher before the re-epithelialization of the wound.

Once implant failures are recognized as being related to the disease, an overview of the problem, as with any other medical condition, should be achieved.[13]

Although the immediate loading technique has been beneficial to patients and dentists, it has also been the cause of complicating factors. The post-operatory impression procedure is necessary in order for the prosthesis to be placed immediately. Thus, reporting the problem and how to avoid it is important to reduce its incidence.

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