

# Severe Gingival Damage after Polysiloxane Impression Procedures

## A Case Report

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THIS IS A REPORT OF A 38-year-old white female who developed severe gingival damage after impression for a full crown with vinyl polysiloxane material. Treatment of the lesion consisted of a gingival graft placed directly on bone. A one-year follow-up showed significant re-establishment of a healthy gingival complex.

Injectable impression materials are commonly used in restorative dentistry for the fabrication of cast restorations. Injection of the impression material into the gingival sulcus is usually required to yield an accurate impression of the prepared tooth. Inadvertent injection and retention of this material into the underlying soft tissue or bone is a potential complication of this process. Price and Whitehead<sup>1</sup> first reported on five patients who developed pain and swelling after dental impression procedures with rubber-base. One subject showed severe bone loss apparently caused by retention of the rubber-base material. A follow-up report<sup>2</sup> showed clinical bone regeneration two years after removal of the retained material. O'Leary et al.<sup>3</sup> described two cases of bone destruction after impression procedures using a combination of electrosurgery and rubber-base. Clark<sup>4</sup> and Eliasson and Holte<sup>5</sup> reported one case of swelling and pain resulting from soft tissue retention of rubber-base. Blankenau et al.<sup>6</sup> reported on a possible allergic reaction to polyether impression material resulting in gingival ulceration. The impression material was in contact with the gingiva during the impression process. This paper reports on a patient who developed severe gingival damage after an impression with a vinyl polysiloxane impression material.

### CASE REPORT

The subject was a healthy, 38-year-old white female who was referred by her dentist for treatment of an area of denuded bone on the lingual aspect of the mandibular left first molar. This tooth had been prepared for a full crown and retraction cord inserted into the sulcus.

The impression material was of the vinyl polysiloxane variety. The patient began experiencing pain several hours after the impression. The area began to swell within 24 hours. The patient became aware of loss of soft tissue starting three days after the procedure. She returned to her dentist one week after the impression. By that time, an area of necrosis was evident. The permanent crown was cemented about four weeks after the impression was taken. At that time, the patient was referred for an evaluation. The area had received flap surgery for treatment of periodontitis approximately one year earlier.

Clinical examination revealed a rectangular region of denuded bone approximately 6 × 9 mm, on the lingual aspect of the mandibular left first molar (Fig. 1). The area was bordered mesially and distally by gingiva. The



**Figure 1.** The lingual aspect of the mandibular left first molar. A small piece of foreign material is seen at the caudal margin of the lesion.

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caudal margin was mucosal. Granulation tissue was seen emanating from the periodontal ligament space at the level of the osseous crest. A radiograph of the region did not reveal any foreign object (Fig. 2). Clinical examination showed a small fragment of material that was gray and rubbery. Biopsy examination confirmed that this was a foreign object, but the specimen was too small to be otherwise identified.

Under local anesthesia (Mepivacaine 2% with Levonordefrin 1:20,000), the area was prepared for an autogenous gingival graft. Connective tissue at the gingival borders was exposed by gingivoplasty. The donor tissue was a portion of the left posterior palate. The graft was secured with 6-0 silk sutures (Fig. 3). Analgesics were prescribed to reduce postoperative discomfort. The patient returned in one week for removal of sutures and was seen again several weeks later. Healing progressed uneventfully. After one year, significant restoration of the gingival complex was apparent (Fig. 4). The area was clinically healthy and was not probeable.

#### DISCUSSION

A case of severe gingival damage occurring after an impression with a vinyl polysiloxane material has been



Figure 2. Radiograph of the region shown in Figure 1.



Figure 3. The gingival graft placed on bone and secured with 6-0 silk sutures.



Figure 4. The affected area one year after treatment. The gingiva appears clinically healthy and is not probeable.

presented. The gingival damage was apparently the result of injury to the tissues caused by pressure from the impression material. It is possible that the retraction cord (used prior to injection of the material) may have weakened the gingival fiber attachment at the base of the sulcus, allowing for rupture during injection of the impression material. The past dental history was important for proper diagnosis. The foreign object that was removed from the base of the lesion was probably a portion of the impression material, but this could not be confirmed by biopsy examination.

Treatment of the gingival damage consisted of a gingival graft placed directly on bone. A similar procedure has been described by Dordick et al.<sup>7</sup> A gingivoplasty of the adjacent tissue was performed in order to enhance blending of the gingival graft to the adjacent gingiva.

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