

# Utilization of a Plastic “Washer” to Prevent Auricular Prosthesis Abutment Overgrowth: Report of a Case and Description of a Technique

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*Skin overgrowth of auricular implant abutments can be a difficult and frustrating problem, leading to multiple procedures and delaying the placement of a definitive prosthesis. In the present patient, plastic rings or “washers” were employed to successfully deal with this problem. A discussion of the management of peri-implant soft tissues is presented. (INT J ORAL MAXILLOFAC IMPLANTS 2001;16: 880–882)*

**Key words:** complication, craniofacial prosthesis, peri-implant abutment tissues

Patients with congenital or acquired auricular defects pose many challenging problems to the surgeon. It is the utilization of osseointegrated implants, along with the development and application of new restorative materials, that has allowed physicians to overcome many of these obstacles.

In this report, a case of problematic recurrent soft tissue overgrowth managed by the application of a plastic ring or “washer” is presented. A discussion of this technique and the management of peri-implant tissues follows.

## PATIENT TREATMENT

The patient was a 26-year-old male with a history of congenital microtia and atresia of the external auditory canals. Associated with this complex is mandibular hypoplasia, facial nerve weakness, and deafness. His past medical history was remarkable

for non-insulin-dependent diabetes mellitus, sleep apnea, and depression. He had a history of smoking (1 pack/day) and was a recovering alcoholic. During his childhood, he underwent multiple reconstructive procedures on both ears, with little success. For social reasons, he expressed a strong desire to have prosthetic ear replacements.

The first surgical procedure involved bilateral excision of the vestigial external ears, which consisted of a small deformed tragus and helix. Bilateral placement of 3.5-mm endosseous screw-type implants (Bud System, East Aurora, NY), 3 per side, in the squamous and mastoid portions of the temporal bone was performed.

Seven months later the patient underwent a second procedure. This included uncovering of the implants and placement of 10-mm abutments and healing caps. The lower implant on the right side was loose and not osseointegrated, and was therefore removed. With mobility testing, all other implants demonstrated osseointegration. The subcutaneous tissue was thinned around the implants, and the tissues were well seated around the abutments by the end of the procedure. The site was dressed with an antibiotic ointment.

Because of unwanted skin overgrowth 1 month later, the right anterior and the left lower healing cap/abutment complexes had to be uncovered and the subcutaneous tissues thinned. The sites were dressed with an antibiotic ointment. Two weeks later it was once again noted that the same cap/abutment complexes were overgrown. They

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**Fig 1a** Patient with plastic “washer” beneath the healing cap and around the abutment of the lower left osseointegrated implant. Antibiotic ointment has been applied to these sites.

**Fig 1b** Ten-week follow-up image demonstrating that the peri-implant tissues are well healed. Note that a Dolder bar has been placed for final prosthesis mounting.



**Fig 2a** Patient with plastic “washer” beneath the healing cap and around the abutment of the right anterior osseointegrated implant. Antibiotic ointment has been applied to these sites.

**Fig 2b** Five-month follow-up image demonstrating that the peri-implant tissues are well healed. Note that a Dolder bar has been placed for final prosthesis mounting.



were once again uncovered, and beneath each of the healing caps a thermo-forming material (Henry Schein, Melville, NY) ring or “washer” was placed (Figs 1 and 2).

The diameter of each ring was 1.50 mm and the thickness was 0.02 mm. The washer permitted good seating of the tissues around the abutment and on to the underlying periosteum. Seven days later the washers were removed, and the tissues could be seen to have healed well around the abutments. No further peri-implant tissue manipulation was necessary.

One month later, the patient was provided with definitive prostheses, which at the last follow-up appointment (3 months later) were functioning well.

## DISCUSSION

Osseointegrated implant-supported auricular prostheses pose unique challenges to the surgeon. The 5-year survival rate of these implants has been reported as greater than 95% by several authors.<sup>1-3</sup>

In recent years, there has been considerable interest regarding the management of peri-implant tissues. Jacobsson and coworkers showed a 10% rate of adverse skin reactions in 70 patients with 315 implants.<sup>1</sup> Westin and associates described a 29% rate of peri-implant skin reactions among 99 patients with 309 implants.<sup>2</sup>

The peri-abutment tissue has undergone considerable scrutiny at the present authors' center by Gitto and colleagues.<sup>4</sup> They observed that higher Periotest values and thicker peri-abutment tissue predisposed patients to infection and implant failure.<sup>4</sup> Other authors have recommended thinning of the subcutaneous tissue in the region of the peri-implant abutment.<sup>3,5,6</sup> The goal is to reduce the shearing forces at the epithelial-abutment interface and allow direct seating of dermis to the adjacent periosteum, thus maintaining a barrier to bacteria. Anastassov and Asher described a technique of utilizing a split-thickness skin graft around the abutments.<sup>7</sup>

Unquestionably, thinning of peri-abutment subcutaneous tissue is important from the standpoint of avoiding the need for excessively long abutments and the shearing forces they must withstand. Another critical factor in ensuring implant survival, as previously described by Gitto and colleagues, is peri-implant hygiene.<sup>4</sup>

Patients who undergo placement of auricular implants can develop skin overgrowth of the abutments. This complication of second-stage surgery is seldom discussed. This is an especially frustrating problem for the surgeon and patient, as it necessitates further procedures and leads to delays in definitive prosthesis placement. In addition, further procedures increase the risk of other complications, most notably peri-implant infection.

In the present patient, who had problematic recurrent overgrowth at the abutment/healing cap complex, a small plastic ring or "washer" was used. The washer acted as a stent below the healing cap

and allowed for compression of the soft tissues to the underlying periosteum and healing of the tissue edges around the abutment. While the use of skin grafts can be an alternative procedure for addressing abutment overgrowth, the plastic washer is less complicated. However, use of the washer does not eliminate the need to thin the subcutaneous tissues and also maintain good peri-implant hygiene in the postoperative period.

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