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Immediate Osseous Genioplasty With Kirschner Wire Fixation for Revision of Infected Alloplastic Chin Implant

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Abstract: Genioplasty is a useful tool for correction of congenital abnormalities, as well as for aesthetic improvements of the lower face. Both alloplastic implantation and osseous genioplasty techniques have long been used successfully to achieve satisfactory outcomes. However, alloplastic implantation can be associated with several known complications, including infection, bone resorption, and secondary soft tissue deformities. Typically, these issues arise in the early postoperative period, but there have been reported instances of late infectious complications and the associated sequelae. These cases are generally treated with removal of the implant and secondary revision at a later date. We present here the unique case of a 65-year-old woman who presented with an infected silicone chin implant 25 years after her initial surgery. In this case, we chose to perform an immediate osseous genioplasty at the time of implant removal to avoid the problems that can arise from unpredictable soft tissue healing, as well as an untoward aesthetic result from the significant bone resorption that had occurred in this patient. To minimize the presence of exposed hardware in this contaminated field, we used intraosseous Kirschner wire fixation for osteosynthesis of the advanced genial segment. Our patient experienced no complications from this procedure, the infection cleared, and a successful aesthetic outcome was achieved with this technique.

Key Words: Genioplasty, Kirschner wire, implant infection

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Genioplasty is a useful procedure either for correction of congenital anatomic variations or purely for aesthetic enhancement, and both implant and osseous techniques have been described extensively in the literature. Alloplastic implants provide the advantage of a simple procedure but also carry well-known risks— infection, bone resorption, capsular contracture, and soft tissue deformities. Osseous genioplasty, in addition to being a more versatile procedure, is also generally associated with decreased complications and longer-lasting aesthetic results.^{1–5} We present a case that we recently encountered and discuss our unique solution.

CLINICAL REPORT

A 65-year-old woman presented with a 1-year history of submental purulent drainage and associated hypoesthesia of the lower lip. The patient had a history of silicone implant genioplasty 30 years prior, denied physical trauma or recent dental manipulation, and had failed multiple courses of oral antibiotics. Computed tomographic imaging showed an alloplastic implant with apparent mandibular resorption and confirmed the absence of odontogenic infection (Fig. 1).

Under general anesthesia, we removed the implant via intraoral incision, debrided the surrounding tissue, and irrigated with antibiotic solution. The mental nerves were identified, and the periosteum was elevated to the mandibular border. Using a reciprocating saw, osteotomies were made 5 mm caudal to the neural foramina and through the lingual cortex. The segment was advanced 10 mm, and in an attempt to limit exposure of hardware in the contaminated field, 2 Kirschner wires were placed at converging angles through the genial segment and both cortices of the mandible for osteosynthesis (Fig. 2). The wires were cut and buried so that there was no protrusion past the outer table of cortical bone. The submental fistula was then excised, and the incision closed in layers. There were no complications, and the patient was discharged with 1 week of oral antibiotics. Follow-up revealed no evidence of recurrent infection, resolution of her hyposthesia, and a satisfactory aesthetic outcome (Fig. 2).

DISCUSSION

A search of the literature reveals few reported cases of late infection of silicone implants used in genioplasty, and generally these cases



FIGURE 1. A, Preoperative photograph demonstrating the submental fistula. A and B, Computed tomographic images showing the silicone implant in situ and the associated mandibular bone resorption.

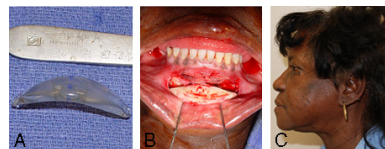


FIGURE 2. A, The silicone implant after removal. B, Intraoperative image demonstrating the advanced osteotomized genial segment and placement of the Kirschner wires. C, Postoperative image of the patient.

have been treated with implant removal, antibiotics, and delayed revision.¹⁻³ However, this approach can result in unpredictable healing associated with dimpling, scarring, or contracture of the soft tissue envelope, which can be difficult to correct.³ With this in mind, we opted for an immediate osseous revision, which has been successful in the treatment of acutely infected implants.⁵ Whereas plates or lag screws are more commonly used to obtain rigid osteosynthesis, mandibular Kirschner wire fixation is a technique described extensively in the oral surgery literature and better suited our purposes in this case.

The patient presented to us a unique clinical scenario that called for an uncommon solution. In this case, through the application of principles supported in the literature, our patient has benefited from this technique with a successful outcome.

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Buccal Branch as a Guide for Superficial Parotidectomy

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Superficial parotidectomy is the preferred method for treating lesions of the parotid gland. Several methods of identification and dissection of the facial nerve have been reported, including antegrade and retrograde dissection.

Aim: The aim of this study was to determine the role of the buccal branch of the facial nerve use as a guide in retrograde approach that minimizes injury to the facial nerve and maximizes the rate at which it recovers.

Result: Fifteen patients who underwent superficial parotidectomy by retrograde approach between 2009 and 2011 at the Maxillofacial Department, Medical City Hospital Baghdad, were included in this study. The study group included 6 males and 9 females, with ages ranging from 25 and 66 years. Temporary facial nerve weakness was

noticed in 4 patients (26.6%); full recovery of the facial nerve function in those patients had been noticed between 3 and 8 weeks. Sialocele was noticed in 1 patient (6.6%).

Conclusions: Retrograde approach guided by buccal branch is simple and less time consuming and has less risk for facial nerve injury.

Key Words: Retrograde approach, parotid gland, facial nerve, buccal branch

Tumors of the parotid gland account for 80% of all salivary gland neoplasms.¹ Parotid neoplasms may arise from salivary tissue of the parotid gland or from intraparotid lymph nodes and rarely from neural structures within the parotid gland.² The majority of parotid tumors present as localized, painless, and mobile swellings that are invariably benign.³

The treatment of choice for most parotid lesions is surgical excision. There are 2 basic techniques for excising the parotid lesion; both of them are based on the identification and dissection of the facial nerve and its branches.⁴ The first one is the antegrade dissection, where the main nerve trunk is identified first and is then traced to its bifurcation and peripheral branches.⁵ The second technique is the superficial parotidectomy with retrograde dissection, where the peripheral nerve branches are identified first and then traced proximally to the bifurcation or main trunk of the facial nerve.⁶

The main difference between the 2 techniques is that in the superficial parotidectomy with antegrade technique, the extent of the



FIGURE 1. Top, 55-year-old woman with pleomorphic adenoma, which involved left side treated by retrograde superficial parotidectomy based on buccal branch and a guide. Bottom, 49-year-old man with Warthin tumor, which involved left side treated by retrograde superficial parotidectomy based on buccal branch as a guide.

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