

KOPAN KULAĞIN ACİL ONARIMI: BİR OLGU SUNUMU

IMMEDIATE RECONSTRUCTION OF AMPUTATED EAR: A CASE REPORT

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ÖZET

Kulağın özel şeklinden dolayı onarımı zordur. Kopan kulak parçası hasta ile getirilmiş ise acil onarım gerçekleştirilmiştir. Burada; sağ kulağı skafa seviyesinden trafik kazası sonucu kopan 21 yaşında erkek hasta sunuldu. Muayenede kopan kulak parçasının replantasyona uygun damar içermediği görüldü. Kopan kulak kartilajının üzeri temporopariyetal fasya flebi örtüldü ve flebi örtecek cilt grefti kopan kulaktan parçasından elde edildi. Ameliyat sonucu kulağın ilk hali gibi olmasada; estetik sonuç kabul edilebilirdi. Kopan kulağın tek basamakta yeniden kanlanması için temporopariyetal fasya flebi en uygun seçenektir. Donör saha morbiditesini azaltmak için flebin üzerini örtecek cilt, kopan kulak parçasından elde edilebilir.

Anahtar kelimeler: Kulak, temporopariyetal fasya, cilt grefti.

ABSTRACT

Reconstruction of the ear is challenging due to its unique shape. If amputated part is brought with the patient, immediate repair should be attempted. A 21-year-old man who was involved in a traffic accident resulting in incomplete amputation of his right ear through scaphal level is presented here. On the examination of the amputated part, no vessel was found for microsurgical replantation. Skin graft was obtained from the amputated ear and was covered the cartilage by temporoparietal fascia. Although definition of the ear framework was not outstanding as its original, aesthetic result was acceptable. The temporoparietal fascia flap is the most suitable for vascularisation of amputated ear in one stage. To decrease the donor site morbidity, original skin of the ear may be used as skin graft as an adjunctive technique.

Keywords: Ear, temporoparietal fascia, skin graft.

INTRODUCTION

The partial or total ear amputations occur usually due to accidents and human or animal bites.¹ Reconstruction of the ear is always challenging due to its unique shape. If amputated part is brought with the patient, reattachment should be attempted. Method of composite grafting often fails, because further vascularisation is needed. Microsurgical replantation of the ear is technically demanding absence of the suitable vessels for vascular anastomosis often limits its success. So non-microsurgical revascularization methods were developed by burying partial or total denuded ear cartilage into well vascularized tissues.^{2,3} Although this is a two staged procedure, recently one staged reconstructions are also described in the literature.^{1,4,5} Skin coverage of the vascularized framework is obtained from skin grafts of distant donor sites. In the present case; skin graft was obtained from the original skin of amputated ear and covered the cartilage by temporoparietal fascia.

CASE REPORT

A 21-year-old man was involved in a traffic accident resulting in an incomplete amputation of his right ear through scaphal level. The partial concha and earlobe remained intact (Figure 1) On the examination of the amputated part no vessel was found for microsurgical replantation. The patient underwent emergency surgery under general anesthesia. The amputated part of the ear was prepared by trimming of the edge and peeled from its skin leaving perichondrium intact (Figure 2). Care was taken not to rupture the skin. It was stored for further use. Afterwards the ipsilateral superficial temporoparietal fascial flap was harvested through a Y-shaped incision (Figure 2). The denuded cartilage was reattached to the ear stump in its original position with 5.0 nylon sutures and covered with temporoparietal fascial flap (Figure 3). Flap was covered with skin graft which was obtained from the amputated ear (Figure 4). So the fascial flap was sandwiched between the cartilage and skin of the ear nourish-



Figure 1. The right amputated ear through scaphal level and preoperative view of the stump were seen.

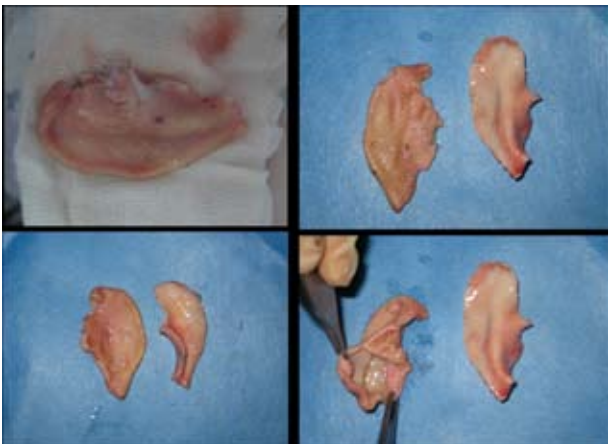


Figure 2. The cartilage and the skin of the ear were separated.

ing both structures separately. The Y-incision was closed and wound dressing with mild pressure was applied on the reconstituted ear. The dressing was removed on the 4th postoperative day. A good graft take was inspected on the following postoperative period and the patient was discharged from the hospital after ten days. Although definition of the ear framework was not outstanding as its original, the patient was happy with the late postoperative result (Figure 5).

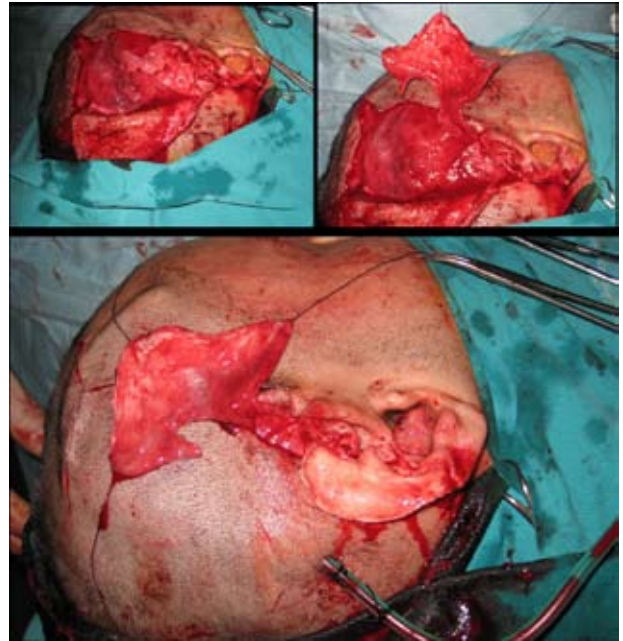


Figure 3. The temporoparietal fascial flap was harvested.

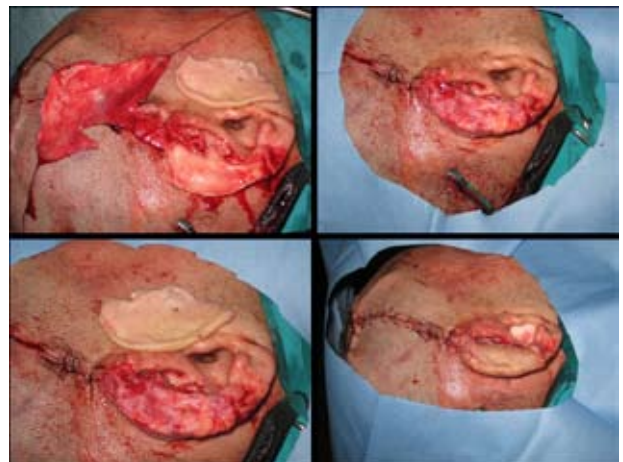


Figure 4. The cartilage was fixed to the stump and covered with the flap. The reconstructed framework was grafted with original ear skin.



Figure 5. Immediate reconstructed ear is seen; one week (left); three weeks (middle), sixth months (right)

DISCUSSION

If the amputated part is available after the trauma, reattachment should be performed with original tissues for best cosmetic results. According to retrospective literature review of Steffen et al. 6 reattachment methods of the ear were divided in four groups: (1) the microsurgical technique, (2) the pocket principle, (3) methods with various periauricular tissue flaps, and (4) direct reattachments as a composite graft. Most authors^{2,4,5} agreed, replantation offers superior outcome, when suitable vessels for microvascular anastomosis are revealed. This method also reserves soft tissue coverage for late costal cartilage reconstructions in case of failure,⁶ if temporal superficial vessels were not used for microvascular anastomosis.^{7,8} Successful replantations were published which also pointed out technical difficulties and problems in the postoperative course.⁶ Most jeopardizing complication is venous congestion and treatment includes systemic heparinization, medicinal leeches and stab incisions.⁹ Sometimes even a suitable vein for anastomosis could not be found, replantation could be performed with a single artery.¹⁰⁻¹² Venous drainage is substituted by intermittent bleeding or leeches, until venous channels are formed in the replanted part.

Usually the amputated ears are severely damaged and vessels are not suitable for microvascular anastomosis. So alternative non microsurgical methods are considered for salvage. Basically ear could be adapted to its original place as a composite graft, when the dimensions of amputated part were not large.¹ However this method is unreliable and often fails.² Adjunctive procedures must be added to increase the viability of the cartilage. Pocket principle, which also performed recently^{2,3,13} which was developed by Mladick at the times when microsurgical repair were not available.² Dermabraded ear is fixed to the stump and buried subcutaneously into the postauricular region. At the second stage it is harvested to its original position and skin grafted. It is used by many authors with some modifications. Varied pocket dissections,^{3,13} cartilage perforations to enlarge the surface,² leaving secondary epithelization for better color match instead of skin graft were added to the surgical technique. However this two-staged procedure does not promise good cosmetic results. The cartilage framework is often shrunken and distorted.

Another option for salvage of amputated ear is vascularizing it with a reliable soft tissue. The temporoparietal fascia flap is a useful tool in the reconstruction of the ear, with its pliable, thin, and smooth nature and good vascularity.¹⁴ However other flaps are also available.¹⁵⁻¹⁷ As in late reconstruction of the ear with rib cartilage,¹⁸ amputated ear cartilage could be vascularized with temporoparietal fascia

flap immediately to preserve its viability. For revascularization of the amputated; ear various methods have been described in the literature. Revascularization could be achieved by suturing the flap between the dorsal aspect of the cartilage and the dorsal skin of the ear.^{1,19} Although the definition of the cartilaginous framework is well protected, the major drawback of this operation is potential marginal necrosis on the surfaces where the flap is not in contact. Another method for immediate salvage of the ear is the total coverage of the auricular cartilage with the grafted temporoparietal fascia flap.^{4,5} Its disadvantage is slight loss in surface definition of the cartilaginous framework. However vascularization of the cartilage is more reliable, as the surface contact increases between the flap and the cartilage. The reconstructed structure is grafted with skin from distant donor sites. Our contribution to the literature is revealed at this phase of the operation. We use the original skin of the ear peeled from the cartilage as skin graft. Original skin could adapt better to the folds of ear; thus more definition in reconstituted framework could be obtained. This technical note can be considered in situations when the skin of the amputated ear is not severely avulsed.

CONCLUSION

If replantation is not possible in case of ear amputation, nonmicrosurgical attachment should be performed immediately to reconstructed the ear. The temporoparietal fascia is the most suitable tool for vascularisation of amputated ear in one stage. To decrease the donor site morbidity, original skin of the ear may be used as skin graft as an adjunctive technique.

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