RECONSTRUCTION OF EAR USING HARVESTED CARTILAGE FROM AMPUTATED EAR AND TEMPERO-PARIETAL FASCIAL FLAP

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Introduction:

When patients present with total ear avulsion, the options available are, replantation of the avulsed ear, banking the ear cartilage in subcutaneous pocket for later reconstruction and reattachment as composite graft. Many times replantation of the avulsed ear is not possible because it is crushed and unfit for re plantation or the patient has other associated injuries and cannot withstand lengthy procedures or the microvascular expertise is not available. In such situations the cartilage framework can be harvested from the avulsed ear and banked in a subcutaneous pocket created in the post auricular region. This is a short procedure and can be done under local anaesthesia.

After 3 to 6 months the ear can be reconstructed using the banked cartilage and the pedicled temporo parietal fascial flap.

The totally avulsed ear reattached as a composite graft usually does not survive in our hot weather conditions.

Case Report:

This 35 year old lady sustained multiple injuries due to fall from two wheeler. She presented to our institute 6 hours after injury. On examination she had sustained total avulsion of the right ear with friction burns involving the right side of face. The amputated ear was not fit for replantation.
Pocketing of harvested cartilage:

The amputated ear was debrided. The cartilage was harvested using sharp dissection to excise the skin. The wound in the right auricular region was debrided and a pocket created in the subcutaneous plane in the post auricular region. The harvested cartilage was banked in the pocket. Drain placed and wound was closed with simple sutures without tension. Drain was removed after 2 days. The wound healed uneventfully.

Ear reconstruction using the banked cartilage and pedicled temporo parietal fascial flap

After 6 months the patient was taken up for ear reconstruction. Under general anaesthesia patient was placed in supine position with head turned towards the left side. The right post auricular region was explored through the previous scar. The pocketed cartilage was found intact and healthy. The cartilage was elevated and pedicled right temporo parietal fascial flap was used to reconstruct the right ear.

Superficial temporal pulsation was confirmed with Doppler. Lazy S incision marked over the right temporal region. Tumescent was infiltrated into the marked incision. Sub dermal flap was raised upto 8 cm from the superior auricular sulcus. Dissection proceeded cranial to caudal and about 8 by 6 cm superficial temporal fascial flap was raised upto superior auricular sulcus based on the superficial temporal artery. Hemostasis obtained and wound closed in layers.
The superficial temporal fascia was draped around the elevated cartilage and split skin graft applied. Suction drain was kept. Sterile non compressive dressing applied. Drain removed after 1 week. The reconstructed ear healed well.

Discussion:

The ear cartilaginous framework is difficult to reproduce. The salvage and use of denuded auricular cartilage were recommended by numerous surgeons. Various techniques have been employed to preserve cartilage from an avulsed ear. The skin may be removed and the cartilage buried in an abdominal pocket, in a cervical pocket or placed under the skin of the retroauricular area.

With this technique the patient’s own ear cartilage is used for ear reconstruction. We are avoiding chest wall surgery to harvest rib cartilage for ear reconstruction. The duration of the surgery and the morbidity of the patient is reduced. A scar in the chest is avoided.

There is a chance of the cartilage getting absorbed when it is pocketed. However with good debridement and pocketing in the correct plane and without tension and with good drainage, we will be able to salvage the pocketed cartilage and use it for future reconstruction as done in this patient.

The temporoparietal fascial flap has been commonly used in head and neck reconstruction. It has thin, broad, pliable character and also has good blood supply. The temporoparietal fascial flap has been commonly used for coverage of the auricular framework in primary and secondary cases.
Conclusion:

In total avulsion of ear, if it is not possible to re-plant the ear, then a good alternative is to har-vest the cartilage framework from the avulsed ear and bank it in post auricular sub cutaneous pocket for future reconstruction using a temporo parietal fascial flap.

References:


