



BRIEF COMMUNICATION

Split Thickness Skin Grafts in Four Cases of Medial Meatal Fibrosis of the External Auditory Canal[☆]



Andreia Ribeiro,* Abílio Leonardo, Manuel Rodrigues e Rodrigues, Gustavo Lopes

Hospital Pedro Hispano, Matosinhos, Portugal

Received 31 March 2014; accepted 16 July 2014

KEYWORDS

Fibrosis;
External ear canal;
Free tissue flaps

Abstract Medial meatal fibrosis is a rare condition in which the medial portion of the external auditory canal is obliterated with fibrous tissue.

We selected 4 cases of patients with medial meatal fibrosis with a history of recurrent otorrhea who underwent surgery during the years of 2012 and 2013, presenting the surgical results here. Physical examination showed an obliterated external auditory canal and conductive hypoacusis. All cases were solved using a split thickness skin graft from the thigh.

The surgical principles that appear to correlate with a favorable outcome are the removal of all fibrous tissue and unhealthy skin, a wide canaloplasty and the use of a split thickness skin graft.

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PALABRAS CLAVE

Fibrosis;
Conducto auditivo externo;
Colgajos libres

Injerto parcial de piel en cuatro casos de fibrosis media del conducto auditivo externo

Resumen La fibrosis media del conducto auditivo externo es una situación rara caracterizada por la presencia de tejido fibroso en la zona media de dicho conducto.

Se seleccionaron 4 pacientes con fibrosis media del conducto auditivo externo intervenidos quirúrgicamente durante los años 2012 y 2013. Todos los pacientes presentaban como antecedente una otorrea recurrente. El examen físico mostró un conducto auditivo externo invadido con tejido fibroso y una pérdida auditiva conductiva. Todos los casos fueron resueltos con recurso a la sustitución de la piel del conducto auditivo externo por injerto parcial de piel.

Los principios quirúrgicos que parecen traducir un resultado favorable se basan en la eliminación de la totalidad del tejido fibroso y de la piel del canal auditivo externo, en la realización de una amplia canaloplastia y en el recurso al injerto parcial de piel.

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[☆] Please cite this article as: Ribeiro A, Leonardo A, Rodrigues MR, Lopes G. Injerto parcial de piel en cuatro casos de fibrosis media del conducto auditivo externo. Acta Otorrinolaringol Esp. 2015;66:281–285.

* Corresponding author.

E-mail address: andreiamfribeiro@gmail.com (A. Ribeiro).

Introduction

The medial fibrosis of the external auditory canal (EAC) is a rare condition in which the medial portion of the CAE is obliterated with fibrous tissue. The etiology can be traumatic, post-operative or post-inflammatory/infectious.^{1,2}

The pathophysiology is not yet fully known but it is thought that the process begins with an "aggression" to the EAC and tympanic membrane.² It is characterized by an active and progressive inflammatory/infectious stage followed by formation of a mature fibrous scar in the medial portion of EAC.³

In the active stage of the disease the treatment is limited to the local debridement, anti-microbial treatment and cauterization.³ In the mature phase, treatment options are the use of hearing aids or surgery.³

Surgery involves excision of all the fibrous tissue of the EAC and the involved skin followed by canaloplasty and reconstruction with partial skin graft.

Materials and Methods

We present 4 clinical cases of patients with medial fibrosis of the EAC who underwent surgical treatment in 2012 and 2013. The surgical technique used in the 4 patients is described below.

Harvest of the Split Thickness Skin Graft

A manual dermatome was used. The donor skin is lubricated. The dermatome is placed at an angle of 30°–45° with the donor surface (in this case the skin of the thigh). Proper skin tensioning is important. After being harvested the graft is placed on fat gauze with the inner surface facing upward. Incisions are performed in the skin with a blade to increase the area and to avoid flap retraction. Fat gauze was placed over the donor surface.

Removal of the Fibrous Scar and Placing the Flap

A retroauricular approach was used. A circumferential skin incision is made laterally to the EAC fibrous scar. The entire affected skin and fibrous scar are removed, leaving the bone exposed, and also the epithelial layer of the tympanic membrane.

A wide canaloplasty is made with drill in order to view the entire tympanic anulus. A single flap of skin is placed in order to cover the whole circumference of the EAC. Attention to this step because the flap will undergo some shrinkage. The EAC is packed with fat gauze and the plans are closed with sutures. The plug was removed after 15–20 days postoperatively.

Results

Case Report 1

Male patient, 34 years old with a history of left otorrhea with about 1 year of evolution which stopped one month before observation, and bilateral hearing loss.

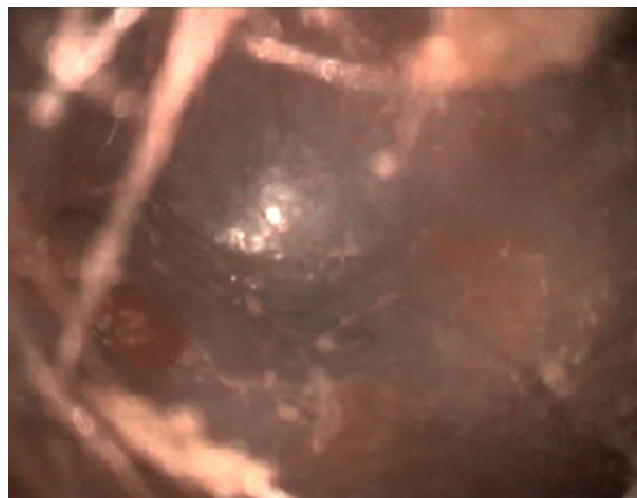


Figure 1 Left EAC obliterated with fibrous tissue.

On physical examination a left EAC obliterated with fibrous tissue (Fig. 1) and a normal right ear were found. The acumeny and audiometry suggested a left conduction hearing loss (SRT: 30 dB; Air-Bone Gap (ABG): 10 dB). The CT scan showed a mass occupying the entire left EAC (Fig. 2).

The patient underwent multiple surgeries to remove the fibrous scar with re-stenosis after 1–4 months.

In July 2012 the patient underwent surgery for removal of medial fibrosis of the EAC according to the technique described above. The tympanic membrane was normal, without perforation.

At 4 months postoperatively the patient was well healed with no evidence of fibrosis of the EAC and we performed an audiogram which showed improvement (SRT: 20 dB; no ABG).

At one and a half year postoperatively the patient was still without evidence of re-stenosis (Fig. 3).

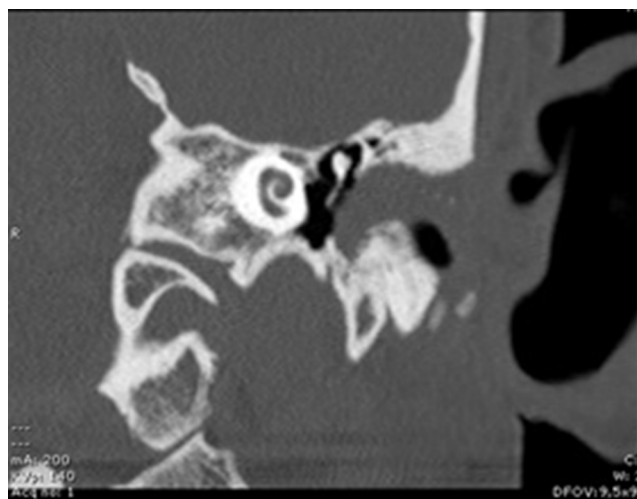


Figure 2 A mass occupying the entire left EAC.

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