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En bloc resection for treatment of refractory pre-auricular fistula

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Abstract

Objective: To report a surgical method for the treatment of pre-auricular fistula to lower post-operative recurrence rate.
Methods: Clinical data of 187 patients with pre-auricular fistula who underwent en bloc resection at the Affiliated Hospital of Luzhou Medical College from August 2006 to November 2012 were retrospectively reviewed. Factors that might affect the prognosis following En bloc fistula resection bordered by the superficial temporalis fascia, helix perichondrium and auriculocephalic sulcus were investigated.
Results: Of the 187 patients, 181 achieved primary healing and 6 ended up with delayed healing. During the follow-up period (one to seven years), there were 4 cases of recurrence (2.1%).
Conclusions: Clear demarcation of surgical resection can facilitate easy and thorough resection of preauricular fistula and lead to low recurrence rate. Proper timing and careful search for potential fistula branches are the two crucial factors affecting prognosis.

Keywords: Pre-auricular fistula; Temporalis fascia; Helix perichondrium; Surgery; Infection

1. Introduction

Preauricular fistula resection is a simple routine operation widely practiced in hospitals. However, therapeutic effects of this routine surgery are barely satisfactory, especially in refractory cases with history of repeated infections, pre-auricular abscess, previous surgeries, infectious scars relatively distant from the original fistula opening, or complex fistula structures with multiple openings. Although novel surgical approaches have emerged during all these years of exploration, application of new methods such as microscopic surgery has been limited by their requirements on equipment and operator training. Therefore, searching for a more practical method which provides thorough lesion eradication and can be widely adopted is of great value. The authors performed en bloc fistula resection (bordered by the superficial temporalis fascia, helix perichondrium and auriculocephalic sulcus) in 187 cases of refractory pre-auricular fistula from August 2006 to November 2012, with satisfying outcomes. The cases are reported.

2. Materials and methods

2.1. Clinical data

All procedures reported in this study were approved by the ethics committee of the Affiliated Hospital of Luzhou Medical College. Of the 187 patients (lesion on left in 83 and on right in 104) involved in this study, 78 were male and 109 were female, aging 1–80 years with a median age of 9 years. Duration of recurrent infections were from 20 days to 30 years. Abscess drainage was done in 73 cases, of which 13 encountered recurrence and received subsequent surgical treatments (twice in two cases). Surgeries by the authors were planned after infection was under control, although surgeries

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had to be implemented with infection in 5 patients due to repeated infections that were difficult to control.

2.2. Operative methods

1) For patients with no history of abscess or only limited infection areas, or a fistula close to skin scars: A shuttle shaped incision was made surrounding the fistula opening and scars or just infection scars in the absence of a fistula opening. The subcutaneous tissue was dissected until the superficial layer of temporal fascia and toward the crus of helix (Fig. 1), with care taken to protect helix perichondrium. The dissection proceeded using electrocautery to keep the field clean. The fistula bottom and helix cartilage was separated by sharp dissection and helix perichondrium was removed. Dissection of the posterior aspect (Fig. 2) continued toward the auriculocephalic sulcus with the helix cartilage retracted back, until seeing adipose tissue which was the posterior boundary of excision (Fig. 3). Depth of dissection could reach the superficial parotid gland, although the actual upper and lower dissection boundary was determined by the lesion, while the depth and anterior–posterior border of excision remained constant. Tissues above the superficial layer of temporal fascia and helix perichondrium were resected completely, along with part of the temporal fascia in the direction of auriculocephalic sulcus. The only remaining tissue was the skin covering the auriculocephalic sulcus.
2) For patients with extensive preauricular scars (≥2–3 cm), or an original abscess drainage incision relatively distant from the fistula opening (predictable suture difficulties), a pair of fusiform incisions along preauricular scars and the original fistula opening respectively were made (Fig. 4). Healthy skin between the two incisions was saved so as to reduce suture tension. Subcutaneous tissue beneath the incisions was dissected and removed as one bloc, and the extent of dissection and methods were similar as that described above (Figs. 5 and 6).

The following points were observed: 1) Operations were planned after infection was controlled with normal temperature, no pus from the infection area and no signs of inflammation; 2) the superficial temporal artery and temporalis muscle were carefully protected and bleeding thoroughly controlled when the superficial temporal artery was injured; 3) Operation maneuvers were completed outside the parotid capsule to avoid accidental injuries to the facial nerve or

Fig. 1. Dissection along the superficial layer of temporal fascia toward the crus of helix with electrocautery.

Fig. 2. Dissection toward the posterior aspect of helix cartilage.

Fig. 3. Remaining tissue following fistula resection showing the superficial layer of temporal fascia (red), helix cartilage (black) and subcutaneous tissue beneath the crus of helix (blue).

Fig. 4. Parallel fusiform incisions.

Fig. 5. En bloc dissection of the tissue beneath both incisions.