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Minimally invasive endoscopic resection of benign tumours of the accessory parotid gland: an updated approach☆

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Abstract

The most common conventional approaches for the resection of benign tumours in the accessory parotid gland are a standard parotidectomy incision, a modified standard parotidectomy incision, or a face-lift incision. The resulting scars may severely affect the patient's postoperative appearance. The previously reported endoscopically assisted approach offers a less aesthetically invasive technique, but it may still leave a visible preauricular scar 4–5 cm long. We have used a modified endoscopic approach with minimal, and concealed, incisions for the resection of benign tumours in the accessory parotid gland. Five patients were diagnosed by physical examination, imaging, and preoperative fine-needle aspiration biopsy. They had endoscopically assisted resections using our modified approach, and we evaluated its feasibility. All the resections were successful. The mean operating time was 108 min (range 90–130). The postoperative scars were concealed and aesthetically satisfactory. There were no facial paralyses, salivary fistulas, or recurrences in the short term. Using endoscopically assisted resection we completely removed benign tumours from the accessory parotid gland and obtained good aesthetic results. Our updated endoscopic approach for these resections is successful with shorter, concealed incisions. It is a viable alternative to conventional approaches.

Keywords: Accessory parotid gland; Benign tumour; Endoscopic; Minimal invasive surgery; Invisible scar; Cosmetic results

Introduction

The accessory parotid gland is salivary tissue that is distinct from the main body of the parotid and generally lies between the buccal and zygomatic branches of the facial nerve. About 21–56% of people have accessory parotid glands,[1,2] and 1–7% of all tumours of the parotid gland arise in the accessory tissue. The incidence of malignancy ranges from 26% to 50% among all accessory parotid tumours.[3,4] The primary treatment for such tumours is resection, because of the possibility of local expansion and malignancy. Face-lift incisions, standard parotidectomy incisions, and modified standard parotidectomy incisions, are the most common access routes for resection.[3–5] However, the large wounds and the wide operative areas associated with these procedures have created concerns for many patients. The face is the most visible unclothed area of the human body; a long incision with attendant scarring is difficult for most patients to accept. An alternative method with improved aesthetics is therefore needed to meet the increasing cosmetic demands of patients.[6]

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Endoscopic surgery in the oromaxillary area has become increasingly common in recent years. The reported benefits include minimal postoperative scars, improved aesthetic effects, and a quicker postoperative recovery.[7–9] Resection of benign tumours in the accessory parotid gland using an endoscopic technique has been successful. That of Xie et al.[10] required a visible 4–5-cm preauricular incision at the margin of the tragus back around the earlobe. In addition to a more concealed incision, the field of dissection of the flap was reduced without increasing the operating time appreciably.

Here we present results that show the feasibility of an updated, minimally invasive, endoscopically assisted, approach for resection of benign tumours in the accessory parotid gland with shorter and less visible skin incisions.

Fig. 1. All 3 incisions were made in concealed areas. An incision 1.5–2.0 cm long was created at the margin of the tragus, and 2 incisions each 1 cm long were made along the postauricular crease and in the temporal scalp above the hairline.

Patients and methods

Five consecutive patients with benign tumours of the accessory parotid glands were selected for this series, which was collected between October 2011 and February 2012 at the Department of Oral and Craniomaxillofacial Science of Shanghai Ninth People's Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, China. The group included 1 man and 4 women aged between 20 and 51 years (Table 1). They all presented with regional, gradually growing, painless masses in the mid-cheek with no obvious symptoms. Diagnostic ultrasonography, computed tomograms, or magnetic resonance images were taken preoperatively to confirm the diagnosis and to distinguish the tumour from the surrounding tissues. Preoperative fine-needle aspiration biopsy showed no evidence of malignancy in any patient. The indication for endoscopic parotidectomy was a benign neoplasm with a maximum diameter of 30 mm on imaging and located in the accessory parotid gland.

All the patients and their families were told about the endoscopically assisted and conventional options preoperatively, and were fully informed about the advantages and disadvantages of the procedures. Each patient made his or her own choice. Written consent was obtained from all patients. The entire study was approved by the ethics committee of our hospital.

Instruments

A rigid 30° endoscope with an outside diameter of 4 mm was used in all cases. The endoscopic images were viewed and recorded using an endoscopic camera, an imaging information management system, and two colour monitors (Endoscopy Visualization and Documentation Systems, Stryker, USA).

Operative technique

The hair was shaved from 2 cm around the ear on the affected side of each patient preoperatively. All procedures were done under general endotracheal anaesthesia with the patient supine and a shoulder roll placed under the shoulders to extend the neck and raise the head. The operating team comprised the chief surgeon, the endoscopy assistant, the surgical assistant, and a scrub nurse. A local anaesthetic agent was injected subcutaneously into the field of dissection of the flap to reduce bleeding.

An incision 1.5–2.0 cm long was made at the margin of the tragus. Two additional incisions each 1.0 cm long were then made, one along the inferior postauricular crease behind the lobule of the ear, and the other in the temporal region of the scalp above the hairline (Fig. 1). The incision at the margin of the tragus was continued as far as the parotid capsule. The skin flaps were dissected and raised above the surface of the capsule to create adequate space for the operation, and the surgical plane was developed. Further dissection was made in the same plane to create a tunnel to the tumour. The two additional incisions were continued subcutaneously to form a connection to the tunnel. These three incisions provided triangulation and various working angles for the endoscope and the surgical instruments, which facilitated the additional dissection and manipulation. The rigid endoscope could be inserted through any of the incisions as needed, with the other two incisions remaining available for the instruments.

We dissected (both blunt and sharp) between the capsule of the tumour and the circumferential tissue under endoscopic visualisation. A bipolar coagulator was used for haemostasis. Sufficient illumination and magnified viewing allowed the buccal branch of the facial nerve and other anatomical structures to be clearly identified and protected (Fig. 2). Intraoperative frozen sections showed that all 5 masses were benign.

The tumour and the surrounding tissues were completely resected and removed by extracapsular dissection (Fig. 3), and the residual parotid tissues sutured. The wound was closed using 6/0 polyglactin 910 sutures (Vicryl, Ethicon, USA), and a compression bandage was applied.