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How I Do It

Extracapsular dissection of benign parotid tumors using a retroauricular hairline incision approach

Jong-Lyel Roh, M.D., Ph.D.*

Department of Otolaryngology, Asan Medical Center, University of Ulsan, College of Medicine, 388–1 Pungnap-dong, Songpa-gu, Seoul 138–736, Korea

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Abstract. Extracapsular dissection has emerged as a more conservative approach to parotid surgery. The parotid surgery commonly begins with a modified Blair or facelift incision. Although minor, the incision scar from these incisions is visible on the face and neck. I initially developed a retroauricular hairline incision (RAHI) for the removal of benign lesions in the upper neck with a more esthetic look. The RAHI approach also may be used for selected patients with benign parotid neoplasms. Mobile benign tumors arising in the inferior superficial part of the parotid gland may be removed by the RAHI approach without compromising surgical visualization. This surgery appears to show excellent cosmetic outcomes in addition to the benefits of extracapsular dissection, lower complication rates, and preservation of secretory function. The RAHI without a preauricular incision is a feasible technique in the surgical management of parotid tumors.

Surgery for parotid gland neoplasms has evolved from enucleation to superficial or total parotidectomy. Tumor enucleation is not an ideal procedure for parotid tumors because of high risks of tumor rupture and subtotal removal, with tumor recurrence rates ranging from 20% to 45%.[1,2] These recurrence rates were reduced dramatically by a more comprehensive dissection method, involving identification of the main trunk and branches of the facial nerve, followed by removal of the entire superficial and/or deep lobe of the parotid gland.[3,4] This procedure, however, results in greater risks to the facial nerve and other complications.[5] In response to these risks, more conservative surgical approaches have been developed, including partial parotidectomy[6] and extracapsular dissection (ECD).[7] These methods preserve the uninvolved parotid parenchyma and obviate the need for more extensive facial nerve dissection, resulting in decreases in facial nerve paralysis and other complications, as well as increased preservation of parotid secretory function.[5,8–11]

Parotid surgery commonly begins with a modified Blair's incision, an S-shaped preauricular and submandibular incision that may leave a visible incision scar on the naked surface of the face and neck of some patients. In addition to the possibility of facial paralysis, patients undergoing parotid surgery may worry about the possibility of postoperative scars, especially when a hypertrophic scar or keloid occurs at the site. This cosmetic problem largely has been ameliorated by a modified facelift incision (ie, a preauricular and hairline incision).[12] Although minor, the incision scar from a preauricular incision is visible on the face. Therefore, a retroauricular hairline incision (RAHI), without preauricular incision, may be used for selected patients with benign parotid neoplasms (Fig. 1).[13,14] I initially developed this method for the removal of benign lesions in the upper neck, subsequently applying it to ECD of benign tumors located in the lower half of the parotid gland. Here,

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* Corresponding author: Tel.: +82-2-3010-3965; fax: +82-2-489-2773.
E-mail address: rohjl@amc.seoul.kr

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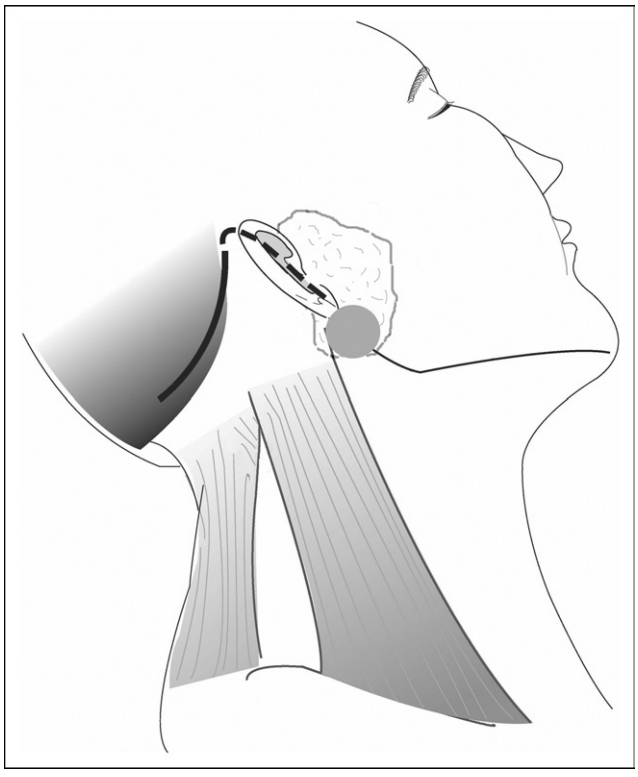

Figure 1 RAHI was made along the postauricular sulcus and hairline without preauricular incision.

the surgical technique, advantages, and application of this procedure in parotid surgery are presented.

Technique

All of these procedures are performed in an operating room setting, with the patient under general anesthesia. The location and size of each lesion are identified preoperatively by computed tomography scans (Fig. 2A) and lesion pathology is diagnosed by fine-needle aspiration cytology. An incision is made along the postauricular sulcus and hairline, starting from the lower end of the postauricular sulcus, moving upward to the upper one-third point of the sulcus, and smoothly angled downward to continue 0.5 to 1 cm along the inside of the hairline (Fig. 2B). The incision is continued through the subcutaneous fat onto the sternocleidomastoid muscle, and the skin flap is elevated anteriorly onto the parotid gland and the lesion site (Fig. 2C). To minimize postoperative alopecia along the incision line, great care is taken to avoid injury to the hair follicles during incision, subcutaneous dissection, and hemostasis. The sensory nerves running along the sternocleidomastoid and the parotid gland also carefully are preserved during flap elevation and dissection.

After incision and dissection of the overlying parotid capsule and parenchyma, the lesions are exposed (Fig. 2D), and the lower branches of the facial nerve adjacent to the parotid masses are identified and preserved. Careful attention is given to avoid capsular rupture and nerve damage, particularly in patients with tumor lobulations or deep-seated tumors. The tumors are removed completely, along with a small amount of normal parotid parenchyma just outside the capsule of the parotid tumor (Fig. 2E and F). After mass removal, the capsule and tissues of the remaining parotid gland are approximated (Fig. 2G) and a suction drain is inserted into the hair behind the lower portion of the hairline incision. The skin incision is closed tightly with interrupted sutures using 4-0 Vicryl and nylon. Compressive dressings are applied to the wounds. Drains and dressings usually are removed on the second postoperative day, at which time the patients are discharged from the hospital.

Data

After a randomized clinical trial comparing partial parotidectomy with superficial or total parotidectomy,[5] partial parotidectomy was compared with ECD in patients with benign parotid neoplasms. Although more than 60 of these patients have been randomized with 2 surgical modalities of partial parotidectomy or ECD between 2005 and 2006, the oncologic results cannot be reported now because of a lack of long-term follow-up evaluation to assess tumor recurrences.[15] In my experience, however, the recurrence rate is the same for the 2 procedures, but the complication rate appears to be lower for ECD. The comparison of morbidities and oncologic results between partial parotidectomy and ECD will be reported in the future. During the study period, the parotid ECD via the RAHI approach has been applied in 23 patients with benign tumors in the inferior superficial part of the parotid gland: pleomorphic adenoma in 15 patients, Warthin's tumor in 4 patients, basal cell adenoma in 1 patient, lipoma in 1 patient, benign cyst in 1 patient, and benign lymph node in 1 patient. Of the 23 patients, only a small number of patients had minor complications: temporary paralysis of the marginal mandibular nerve in 1 patient and a seroma in 1 patient. None of the patients had tumor recurrence to date. The incision scars of the patients were commonly invisible in the natural hair and behind the auricle (Fig. 3). No excessive adhesion or fibrosis in the surgical area has been found in these patients.

Comments

Over the past 2 decades, partial parotidectomy and ECD have emerged as more conservative approaches to parotid surgery.[5,9–11] During partial parotidectomy, only the main trunk and facial nerve branches adjacent to the tumor are dissected and only the tumor-bearing area of the parotid parenchyma, plus a .5- to 2-cm limited margin, is removed.[5,6,8,10] ECD differs markedly from other parotid surgery techniques in that facial nerve dissection is not per-