Retroauricular hairline approach for excision of second branchial cleft cysts: A preliminary experience

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ABSTRACT

Objective: To report our preliminary experience with a retroauricular hairline incision (RAHI) for excision of second branchial cleft cysts (SBCC) and to present a relevant review of current literature.

Methods: A retrospective chart review was conducted of two consecutive patients diagnosed with SBCC who underwent surgical removal via a RAHI. Relevant demographic, clinicopathological, and radiological data was recorded. A web-based search was conducted to identify relevant scientific literature on "retroauricular hairline incision / approach" in order to present a systematic review of current literature.

Result: In both cases, the SBCC (6.0cm and 3.8cm) could be safely excised without major complications. One patient developed a temporary hypoesthesia of ear lobe. None of the patients had a post operative infection, hematoma, spillage of cyst fluid, or necrosis of the skin flap. All patients were satisfied with the cosmetic result.

Conclusion: In conclusion, the RAHI offers an excellent surgical outcome and cosmetic result with no proven increased risks to the patients who require surgical excision of a benign SBCC.

INTRODUCTION

In recent years there has been increasing attention to cosmetic results associated with making cervical incisions for benign neck lesions 1-4. Minimally invasive techniques using either endoscopic guidance or using distant access incisions have been proposed for treating benign cervical lesions 1-4. The goal of these surgical innovations is often improved cosmesis, visualization, and magnification with the endoscopic guidance. Branchial cleft anomalies are benign congenital lesions that result from incomplete obliteration of branchial clefts or pouches and represent nearly 30% of congenital neck masses. Second branchial cleft cysts (SBCC) are the most common of these anomalies and often present anterior to the upper third of the sternocleidomastoid muscle 5,6. SBCC are typically painless, well-circumscribed, cystic masses that frequently manifest during or shortly after an upper respiratory infection. The primary treatment for SBCC is surgical excision which has traditionally been through a cervical incision placed in a favorable horizontal skin crease overlying the lesion. Removal of upper neck masses by way of an incision placed in the postauricular sulcus and hairline also known as the "retroauricular hairline incision (RAHII)" has been shown to result in both improved cosmetic outcome and patient satisfaction compared with conventional cervical incisions 1. In our review of current English literature, we came across three articles describing the results of the retroauricular approach for excision of upper neck masses and SBCC 1-4. Our literature search revealed that the feasibility and utility of this approach has not been discussed in western literature. We report two cases of SBCC treated surgically by way of a post auricular hairline incision approach and also discuss potential pitfalls associated with management of lateral cervical cysts.

METHODS AND MATERIALS

A retrospective chart review was conducted of two consecutive patients diagnosed with SBCC who underwent surgical removal via a RAHI. The study was conducted at the Department of Otolaryngology Head and Neck Surgery, Louisiana State University Health Sciences Center, New Orleans, LA. Relevant demographic, clinicopathological, and radiological data was recorded. A web-based search was conducted to identify relevant scientific literature on "retroauricular hairline incision / approach" in order to present a systematic review of current literature. Key words included included, "retroauricular hairline approach, retroauricular hairline incision, RAHI, surgical approaches to the upper neck, branchial cleft cyst, and lateral cervical cysts". In both cases, the neck mass was surgical removed by a RAHI after obtaining an informed consent from the patient.

RESULTS

Case 1: A 44 year old female presented with a 2.5 month history of a compressible soft upper left neck mass; slowly growing in size without incidence of infection. CT scan showed a 3.8 cm cystic mass at the inferior margin of the left parotid gland and deep to the sternocleidomastoid muscle with minimal peripheral rim enhancement. The head and neck evaluation was otherwise unremarkable. The patient had no risk factors for head neck cancer albeit the age of presentation. The neck mass was removed via a RAHI. There were no complications. Pathology was benign branchial cleft cyst.

Case 2: A 20 year old female presented to the emergency room with complaints of a tender erythematous left upper neck mass. She was treated with antibiotics which reduced the pain and swelling associated with the neck mass. A CT scan showed a cystic mass medial to the cervical vertebrae (Figure 1). The RAHI healed well without any evidence of hair loss or keloid formation. Complications of surgery by each case are listed in Table 2.

DISCUSSION

The RAHI has been reported to offer equivocal resection outcomes and safety, while offering a more cosmetically appealing incision for excising upper neck masses, including branchial cleft cysts, in adults and in children 1,4,13. In a study by Roh JL et al, patients undergoing RAHI approach ranked their overall surgical satisfaction higher than those incised in the neck at 8.7 and 8.9 on a scale of 1-10. This number is compared to an average of 4.2 subjective satisfaction score with a more traditional transcervical incision 2. In addition to the superior cosmetic outcome, RAHI offers excellent functional outcomes as well. In previous series as well as in our experience, there were no instances of marginal mandibular nerve paresis or paralysis which can be a significant problem with the transcervical cervical approaches. Transcervical incisions can also be mobilized by sharp dissection from the subcutaneous cervical tissue to the platysmal muscle to the cervical fascia or sternocleidomastoid muscle. The neck mass can then be mobilized by sharp dissection allowing for decompression to improve surgical access. Pathology was a benign branchial cleft cyst.

Complications and cosmetic results: None of the patients had a post operative infection, hematoma, spillage of cyst fluid, or necrosis of the skin flap. All patients were satisfied with the cosmetic result. In previous series as well as in our experience, there were no instances of marginal mandibular nerve paresis or paralysis which can be a significant problem with the transcervical cervical approaches. Transcervical incisions can be mobilized by sharp dissection from the subcutaneous cervical tissue to the platysmal muscle to the cervical fascia or sternocleidomastoid muscle. The neck mass can then be mobilized by sharp dissection allowing for decompression to improve surgical access. Pathology was a benign branchial cleft cyst.

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In conclusion, the RAHI offers an excellent surgical outcome and superior cosmetic result with no proven increased risks to the patients who require surgical excision of a benign SBCC. Since the majority of BCC are removed in young adults, age 20-40, the improved cosmesis is very desirable.

CONCLUSIONS

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REFERENCES