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"Stealth" retro-auricular endoscopic surgery for a submandibular mass

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ABSTRACT

INTRODUCTION: With the need for increased cosmesis, it is the desire of patients all over the world to avoid an unsightly scar over the neck, face, or any of the exposed areas. This popularised the concept of "stealth" surgery.
CASE DETAILS: A 42 year-old gentleman underwent a stealth surgery for a painless progressively growing mass in the left submandibular triangle, which was provisionally diagnosed as a Lymphoma. As he desired a scarless procedure, a linear incision in the neck was avoided, and the surgical team opted for a Retro-Auricular HairLine (RAHL) approach, with a combination of balloon spacing and ultrasonic shears dissection.
DISCUSSION: The procedure was performed with perfect hemostasis, and is being reported as the first case of stealth RAHL (scarless) surgery in the United Arab Emirates for a submandibular mass. This article has been reported in line with the SCARE criteria [1]. "Stealth" surgery is becoming increasingly popular as it helps to avoid unsightly incisions in exposed areas of the body. The term was first used by by the paediatric surgical department of John Hopkins hospital, and it caught the fancy of the public as well as the surgeons.
CONCLUSION: A retro-auricular endoscopic excision of a submandibular mass is being reported in this article for its feasibility and cosmesis. Following the principles of "stealth" surgery, invisible port site incisions were used to complete the surgery successfully. The purpose of this case report was to illustrate the feasibility and safety of the endoscopic resection using the retro-auricular approach for submandibular mass excision.

1. Introduction

With the need for increased cosmesis, it is the desire of patients all over the world to avoid an unsightly scar over the neck, face, or any of the exposed areas. This has birthed and popularised the concept of "stealth" surgery, in which incisions are placed remotely from the area of the lesion, and various techniques are used to reach the target area [2].

The total endoscopic submandibular excision has not been extensively performed, although there are a few publications using this technique. Apart from the standard trans-cervical incision, submandibular masses can be approached by several other techniques, such as open posterior retro-auricular flap, video assisted retro-auricular approach, robotic retro-auricular approach or the trans-oral endoscopic approach. In this instance, we have chosen the retro-auricular totally endoscopic route for the submandibular gland, not previously reported from the UAE, or elsewhere from the Gulf countries in English literature. A successful excision of the submandibular mass was performed.

2. Case report

A 42-year-old gentleman presented to outpatient department with a progressively increasing lump in the left side of the neck, in the submandibular triangle, which had begun insidiously, over the six months prior to presentation (Fig. 1). There was no history of pain nor increase in size of the swelling during mastication, and associated systemic symptoms, no relevant past surgical, medical and family history. Non smoker with normal psychosocial evaluation. Clinical examination revealed nothing remarkable on general examination, and a bosselated lump in the submandibular region, which was 8 into 6 cm in its dimensions. It was firm to hard in its

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Fig. 1. Left submandibular mass.

consistency and had not infiltrated the skin. There was some fixity to the deeper tissues. A clinical diagnosis of a submandibular gland tumour or metastatic node was supported by an ultrasound of the neck, which showed, in addition, some lymph nodes. A CECT scan of the neck was performed, which showed that the swelling was actually arising from the lymph nodes in the submandibular area. It was a confluent growth of lymph nodes, and the submandibular gland itself seemed uninvolved. A fine needle aspiration cytology was performed, which suggested a lymphoproliferative disorder, but was otherwise inconclusive. An excision and biopsy of the mass was suggested. The patient at this point of time was counselled about the possibility of a stealth surgery, and he desired a surgery without a neck incision. An informed consent was obtained, and the possibility was explained, of conversion to an open surgery with a submandibular region scar.

3. Operative technique

With the patient in the supine position, and head end elevated, with the neck rotated to the right side, incisions were made in the suboccipital region, half to 1 inch behind the retroauricular sulcus, and two 10 mm incisions, and one 5 mm incision (Fig. 2), were used. A space of about 2–3 cm was available between each port. Using a 5 and a 10 mm telescope alternately, using an ultrasonic shears, an initial space was created along the path of the trocars. Then the Covidien spacer was used to create sufficient space through the 10 mm ports. Further dissection was performed by a combination of the 5 mm Maryland Ligasure, and the 5 mm Sonicision ultrasonic shears. A tunnel was made in the subplatysmal plane, and the anterior border of the sternomastoid was crossed, and the posterior belly of the digastric muscle was reached, and the mass was approached (Fig. 3).

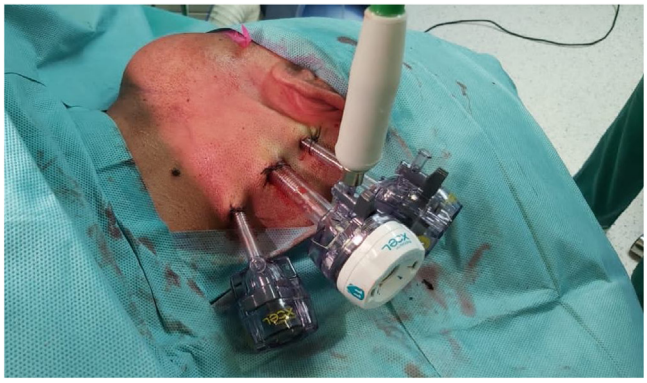

Fig. 2. Retro-Auricular ports placement.

The node mass was dissected off the hyoglossus, after securing the posterior facial vein. The submandibular gland was left in place as it was uninvolved (Fig. 4).

The specimen was removed piecemeal through the 10 mm port, and the port sites closed. Complete hemostasis was achieved, a drainage tube was deployed through the 5 mm port, and a compression dressing was applied to the neck.

The patient had an uneventful recovery, and was discharged on the first post-operative day.

Pain scale of 1–10 was used to assess the patient's post-operative pain.

- 6^{hrs} post-op : 4
- 12^{hrs} post-op : 3
- At discharge(first post-operative day) : 2

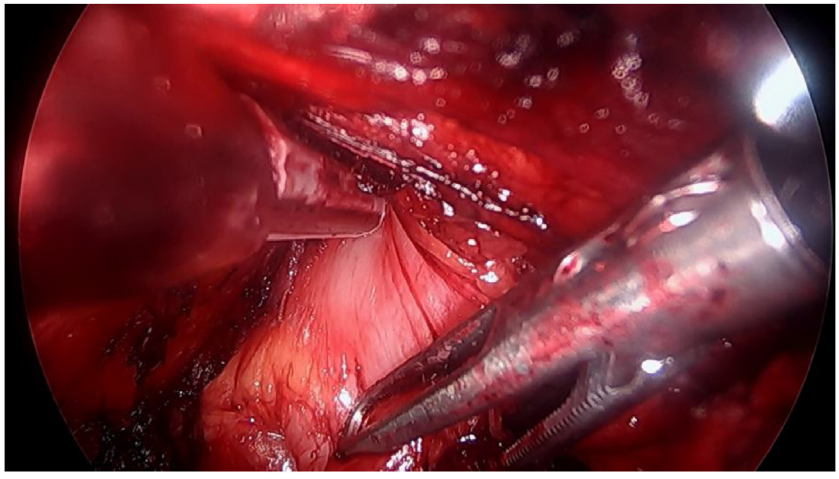

Fig. 3. Dissection of the mass.

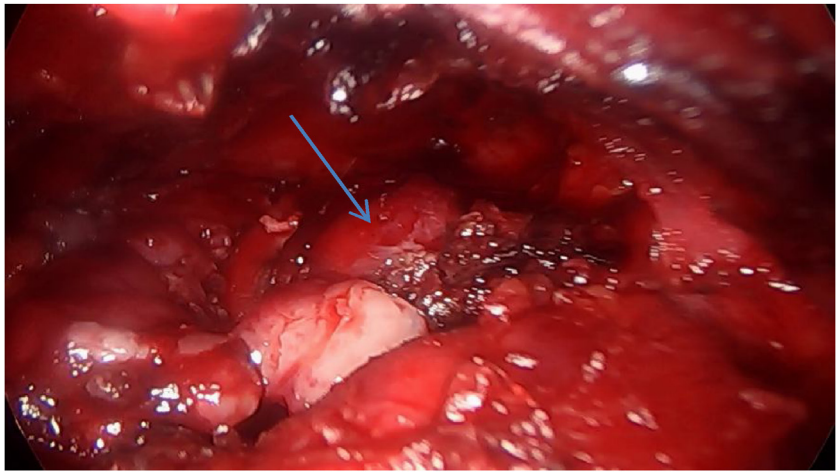

Fig. 4. Posterior facial vein.

The histopathology confirmed a lymphoproliferative disorder, a Hodgkin's Lymphoma, and the immuno histochemistry showed lymphocyte predominant nodular Hodgkin's disease. The PET CT showed no other evidence of Hodgkin's disease elsewhere in the body.

4. Follow-up

The patient has been advised polycyclic chemotherapy in his home country, and remains well at the time of this publication (2 weeks post-op),

Follow-up advised: one, three & six months post operatively.

5. Discussion

The purpose of this case report was to illustrate the feasibility and safety of the endoscopic resection using the retro-auricular approach for submandibular mass excision. This article has been reported in line with the SCARE criteria [1].

"Stealth" surgery is becoming increasingly popular as it helps to avoid unsightly incisions in exposed areas of the body. The term was first used by by the paediatric surgical department of John Hopkins hospital, and it caught the fancy of the public as well as the surgeons. Children having lumps and bumps in the neck, are increasingly subjected to the subcutaneous tunnelling technique as described above. The idea is that the target organ can still be reached, and the lesion removed, but without any long-term cosmetic disfiguration [2].

De Brito et al. published a comparative study enrolling 48 patients who underwent conventional transcervical submandibular gland excision and 23 patients who underwent endoscope-assisted retro-auricular approach, concluding feasibility and superior cosmetic outcome in endoscopic approach [3].

Robot-assisted methods have been widely adopted in head and neck surgery, especially for thyroidectomy. Transaxillary, retroauricular, and transoral thyroidectomy are now increasingly being performed using robot-assisted methods [4,5].

As far as the submandibular gland is concerned, the modified facelift incision or the retro-auricular sulcus incision used to raise a flap up to the level of the gland, followed by a regular sialadenectomy, has been reported [6]. Although feasible, we felt that this would involve much more dissection than an endoscopic approach.

The other approach reported is an endoscopic trans-oral sialadenectomy. This is a cumbersome route, and involves a cramped dissection route and difficult visualization [7].

Fig. 5. Retro-auricular preparation.

What we did for this patient was a hybrid of both these approaches, shaving the hairline back for two inches to expose the sub occipital scalp (Fig. 5). The ports are inserted through the 5 and 10 mm incisions, and the Covidien spacer is used to create a space at the site of the larger trocars, as the spacer is a 10 mm instrument.

The space restriction was also mitigated by using all three trocars for visualisation, alternating between a 5 mm and a 10 mm telescope. Intra-oral pressure on the submandibular gland further rendered the mass prominent and permitted a subtotal excision.

Specimen extraction was facilitated by the large space created by the space

Woo et al. [8], described the "hidden scar" endoscopic excision in an elegant article. In their comparative series, they found excellent patient acceptance of this technique as opposed to a conventional trans-cervical incision. The authors noted that the time taken was significantly more in the endoscopic approach, a finding shared by the authors of this article.

Lira et al. [9] described their early experiences in Latin America with the retroauricular endoscopic assisted approach to the neck,in which their initial experience showed clear feasibility and oncological efficiency, with a definite cosmetic benefit.

Utilisation of the retro-auricular hairline for a totally endoscopic approach, we believe, will eventually dominate the surgery of the neck. Although the trans-oral vestibular approach is our preferred approach for the thyroid, as it gives direct access to both lobes of the gland, the approach described in this article might well be the one of choice for unilateral lesions of the neck. As these are early days yet, we await further data on this innovative approach.

6. Conclusion

A retro-auricular endoscopic excision of a submandibular mass is being reported in this article. Following the principles of "stealth" surgery, invisible port site incisions were used to complete the surgery successfully. This is the first reported case in English medical literature to the authors' knowledge which was performed in the Middle East. The authors hope this article paves the way for several others to prove beyond doubt the reproducibility of this cosmetically superior access route.

Declaration of Competing Interest

The authors report no declarations of interest.

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Ethical approval

Ethical approval obtained.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal on request.

Author contribution

Dr. J.S. Rajkumar: Primary surgeon, study concept and writing the paper.

Dr. Jayakrishna Reddy: Writing the paper, data collection and assistant Surgeon.

Dr. Ranjith Kumar Vijayan: Data collection, editing and assistant surgeon.

Dr. Zeina Kharip: Data collection, editing and anesthetist.

Dr. Rajesh Sisodiya: Data collection, editing and assistant surgeon.

Dr. Mohamed Eraki: Data collection and assistant surgeon.

Registration of research studies

Not applicable.

Guarantor

DR. J.S. Rajkumar.

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