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Retropharyngeal vascular malformation removed using transoral robotic surgery—A case report

Simon Fuglsang*, Thomas Kjærgaard

Department of Otorhinolaryngology, Aarhus University Hospital, DK-8200, Denmark

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ABSTRACT

INTRODUCTION: Although vascular lesions are relatively common in head and neck, they are rarely seen in the retropharyngeal space. Frequent symptoms include mass sensation, dysphagia, dyspnea, snoring, and oral bleeding.
PRESENTATION OF CASE: A 31-year-old male was referred from his general practitioner with mass sensation in the throat, increasing snoring, and changing resonance of his voice. Flexible laryngoscopy revealed a large mass extending from the nasopharynx to the hypopharynx, primarily involving retropharyngeal and right parapharyngeal areas, resulting in a significant narrowing. The malformation was resected with good result using a transoral robot-assisted surgical approach. At 1-year follow-up, the patient was symptom free; however, some residual rhinopharyngeal lesion was seen.
DISCUSSION: Management strategies include surgical removal, corticosteroid injection, chemotherapy, and cryotherapy. Different surgical approaches have been used over the years.
CONCLUSION: Transoral robotic surgery was successful, providing minimally invasive access with good visualization.

1. Introduction

Vascular lesions can be classified into neoplasms and malformations. Vascular malformations can be further subclassified as simple, combined, those of major vessels, and those associated with other anomalies [1,2]. Vascular malformations are present in 1% of births; however, only few cases undergo treatment. Vascular malformations can be located anywhere in the body. In the oral cavity, they are usually located in the anterior two-thirds [3]. They are initially small and asymptomatic, but some show progression in adolescence [4]. Management options are multiple, including surgical resection. We present a case of a non-subclassified vascular malformation with a retropharyngeal location, which was removed using a robot-assisted surgical approach. This case report has been reported in line with the SCARE criteria [5].

2. Case report

A 31-year-old male was referred from his general practitioner due to a mass sensation in the throat and increasing snoring. The rate of symptom progression was slow (years). Flexible laryngoscopy revealed a dense unifocal mass involving the rhino-, oro-, and hypopharynx. The lesion was primarily retropharyngeal but with significant parapharyngeal extension. The mucosa was intact, but areas with ectatic, tortuous vessels were evident. Magnetic resonance imaging (MR) revealed a large vascular malformation with retropharyngeal and parapharyngeal involvement, confined to the pharynx (Fig. 1).

Exposure and surgical access were evaluated in general anesthesia, and the patient was deemed eligible for transoral robotic surgery (TORS). TORS was performed by an experienced senior surgeon using the Da Vinci Surgical System, model Si (intuitive Surgical, Sunnyvale, CA). The surgeon used a 0 and 30° endoscope, Maryland forceps, and a monopolar spatula. Preventive tracheotomy was performed before the resection. Excellent exposure was achieved using the FK-WO retractor with different blades. Resection of the oro- and hypopharyngeal part of the lesion, constituting the bulk of the lesion, was performed. The lesion was removed en bloc with incision along the stylomandibular raphe, which was followed by parapharyngeal dissection towards the retropharyngeal space. Staying superficial to the prevertebral fascia, excision involved the lower part of the nasopharyngeal component and the oro- and hypopharygeal component of the lesion. Bleeding was relatively modest with a total blood loss of less than 50 ml. Hemostasis was secured using a monopolar spatula and vascular clips. The wound was left to heal by secondary intention; thus, no reconstruction was performed. The patient was decannulated on the fourth postoperative day. The patient initiated swallowing rehabilitation a few days postoperatively, the nasogastric tube was

* Corresponding author at: Department of Otorhinolaryngology, Palle Juul-Jensens Boulevard 99, Aarhus N, Denmark.
E-mail address: simosimo@rm.dk (S. Fuglsang).

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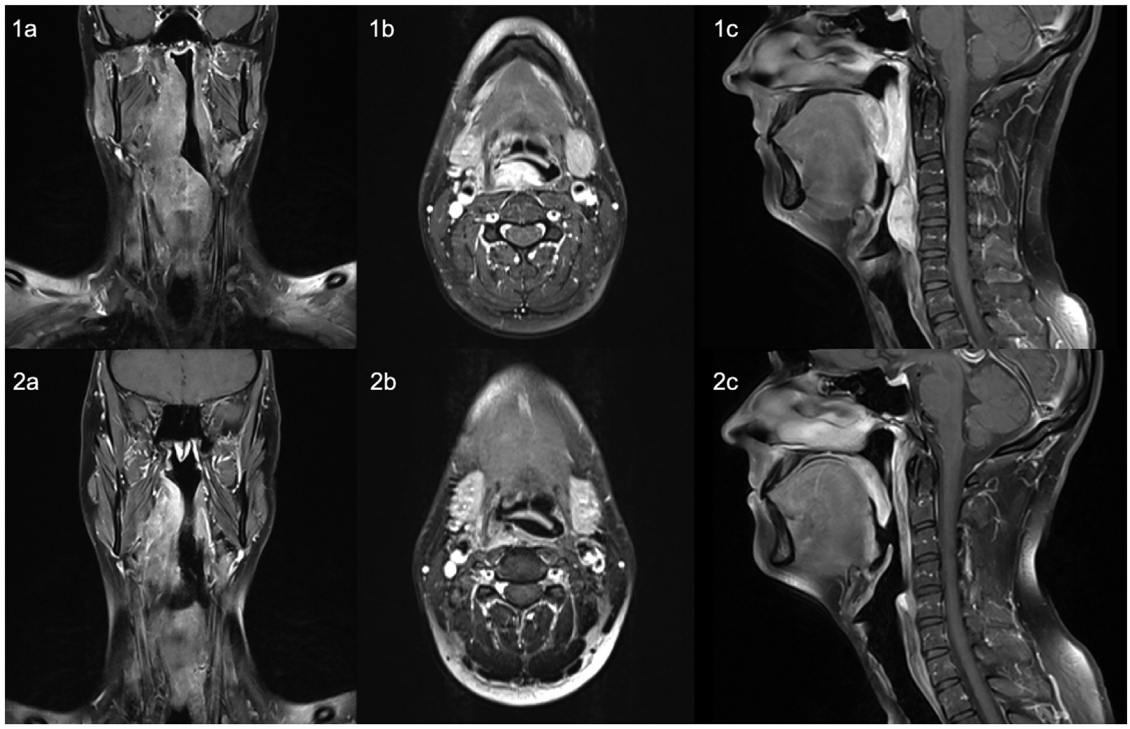

Fig. 1. 1a–c show the preoperative MRI. 2a–c show MRI at 6-month follow-up, revealing minor cicatricial changes in the right oro- and hypopharynx and unchanged residual lesion in rhinopharynx.

removed on the fifth postoperative day, and the patient returned to oral diet. One minor bleeding was registered on the eleventh postoperative day, requiring no specific intervention.

At 1-month follow-up, the patient had recovered fully, had a normal voice and no complains of dysphagia, odynophagia, or aspiration. The tracheostomy had healed completely, and no obvious sequelae were evident. Flexible laryngo-pharyngoscopy revealed residual lesion in the right side of the rhinopharynx and cicatricial changes in the right oropharynx. Based on imaging and histopathological analyses, it was concluded that the lesion represented an arteriovenous vascular malformation with GLUT-1 negative straining.

At 6-month follow-up, MRI was done showing minor cicatricial changes in the right oro- and hypopharynx and unchanged residual lesion in rhinopharyngeal (Fig. 1). The patient was symptom-free and had no mass sensation or complaints of dysphagia or dyspnea. At 1-year follow-up, the situation remained unchanged.

The patient will be followed with annual controls. In case of recurrence, it is considered feasible to repeat TORS. In case of growth of the nasopharyngeal component, either transnasal laser therapy or transoral robot-assisted resection (preceded by a soft palate mobilization) can be considered.

3. Discussion

In general, vascular lesions in the retropharyngeal space are extremely rare. The most common benign tumors at this location are lipoma and schwannoma, but malignant tumors like nodal metastases, liposarcoma, and synovial sarcoma may also be seen [6].

In retropharyngeal lesions, the most common symptoms are mass sensation, dysphagia, oral bleeding, and snoring. However, most adults with vascular lesions are relatively asymptomatic, and a conservative approach should be preferred in most cases [7]. Treatment options include surgery (i.e., excision, laser, or cryotherapy) and topical or intralesional therapy (i.e., including corticosteroid injection, embolization, sclerotherapy), radiation therapy, and propanolol. The choice of treatment depends on a number of factors including type of pathology, size and location, and patient factors [3].

Traditionally, the surgical approaches used are cervical, oral, and medial access, depending on size of the lesion, its exact location, and the surgeon's preference. Smaller pharyngeal lesions are usually been removed transorally; however, like in our case, larger lesions are usually removed using a transcervical approach. The use of TORS has become popular in treatment of benign and malignant pharyngeal tumors due to favorable accessibility and dexterity [8,9]. When the Da Vinci Surgical System is used, patients avoid external excision and hence pain, scarring, and potentially longer hospital stay.

Surgical resection of the oro- and hypopharyngeal component combined with subsequent sclerotherapy of the nasopharyngeal component was planned. However, owing to the significant effect of the resection, sclerotherapy has not yet been performed. Furthermore, the patient experienced no long-term side effects at one year after surgery. Imaging showed no signs of recurrence in the resection area. Furthermore, there were no signs of progression of the nasopharyngeal component of the lesion.

The large defect was left to heal by secondary intention. Primary closure was not possible due to the size of the defect, and free flap reconstruction was considered inappropriate due to significant risk of dysphagia.

Few cases have been reported on vascular malformations in the head and neck [10]. This is, to our knowledge, the first reported case of excision of a retropharyngeal vascular malformation using TORS.

In conclusion, vascular malformation in the retropharyngeal space is a rare benign condition that should be treated only if the patient has symptoms. In the present case, TORS was a successful option providing minimally invasive access with good visualization.

Conflict of interest

No conflicts to declare.

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Research was not funded.

Ethical approval

Ethical approval has been given for this study by "videnskabs etisk komité". No reference number.

Consent

The patient gave approval and written consent for this study.

Author contributions

The revised manuscript has been read and approved by both authors, and there are no conflicts of interest to report. Both authors have contributed to all parts of the submission. Our results have not been previously published and is not being considered for publication elsewhere. Both authors have taken part in conception and interpretation of data, drafting or revising the manuscript critically, and final approval of the manuscript submitted.

Registration of research studies

Case report.

Guarantor

Simon Fuglsang, corresponding author.

References

[1] A.C. Merrow, A. Gupta, M.N. Patel, D.M. Adams, Revised classification of vascular lesions from the International Society for the Study of Vascular Anomalies: radiologic-pathologic update, Radiographics 2016 (2014), 150197, http://dx.doi.org/10.1148/rg.2016150197, Table 1.

[2] Vascular anomalies classification: recommendations from the International Society for the Study of Vascular Anomalies, Pediatrics 136 (1) (2015) 203–214, http://dx.doi.org/10.1542/peds.2014-3673.

[3] H.S. Jeong, C.H. Baek, Y.I. Son, W.K. Tae, B.L. Byoung, S.B. Hong, Treatment for extracranial arteriovenous malformations of the head and neck, Acta Otolaryngol. 126 (3) (2006) 295–300, http://dx.doi.org/10.1080/00016480500388950.

[4] M. Kate, T. Stefanie, Vascular anomalies of the head and neck in children, Quant. Imaging Med. Surg. 6 (6) (2015) 886–897, http://dx.doi.org/10.3978/j.issn.2223-4292.2015.04.06.

[5] R.A. Agha, A.J. Fowler, A. Saeta, et al., "The SCARE guidelines: consensus-based surgical case report guidelines" [Int. J. Surg. 34 (2016) 180–186] (S174391911630303X) (10.1016/j.ijsu.2016.08.014)), Int. J. Surg. 36 (2016) 396, http://dx.doi.org/10.1016/j.ijsu.2016.11.021.

[6] H. Ozawa, K. Soma, M. Ito, K. Ogawa, Liposarcoma of the retropharyngeal space: report of a case and review of literature, Auris Nasus Larynx 34 (3) (2007) 417–421.

[7] G. Meccariello, M. Eesa, M. Costantini, F. Montevecchi, C. Vicini, Tips and tricks in transoral robotic surgery for challenging vascular tumors, J. Craniofac. Surg. 26 (5) (2015) 1616–1618 http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=medl&NEWS=N&AN=26114535.

[8] J. De Ceulaer, C. De Clercq, G.R.J. Swennen, Robotic surgery in oral and maxillofacial, craniofacial and head and neck surgery: a systematic review of the literature, Int. J. Oral Maxillofac. Surg. 41 (11) (2012) 1311–1324, http://dx.doi.org/10.1016/j.ijom.2012.05.035.

[9] G.S. Weinstein, B.W. O'Malley Jr., J.S. Magnuson, et al., Transoral robotic surgery: a multicenter study to assess feasibility, safety, and surgical margins, Laryngoscope 122 (8) (2012) 1701–1707 http://onlinelibrary.wiley.com/store/10.1002/lary.23294/asset/23294_ftp.pdf?v=1&t=ibaq78pp&s=1c43aac7dcd298f866e7e46126c14d161b3c090f.

[10] J. Dubois, L. Garel, Imaging and therapeutic approach of hemangiomas and vascular malformations in the pediatric age group, Pediatr. Radiol. 29 (12) (1999) 879–893, http://dx.doi.org/10.1007/s002470050718.