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Laser resection of liposarcoma of the hypopharynx

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Abstract

Liposarcomas represent between 15 and 18% of all sarcomas with the most common site being the extremities and retroperitoneum. Liposarcomas of the head and neck are rare, with an estimated incidence representing 3 to 5.6% of all liposarcomas. Liposarcomas most commonly present in the soft tissues of the neck. Primary liposarcoma of the hypopharynx (piriform sinus) is extremely rare. The symptoms presented are principally dysphagia, dyspnea, dysphonia, airway obstruction and sensation of a foreign body. Treatment of choice is surgery, and the literature describes the performance of lateral pharyngotomy, simple excision and even total laryngectomy. We present the case of a 23-year-old patient who was diagnosed 7 years prior with liposarcoma of the piriform sinus. The patient underwent surgery using a cervical approach. The tumor recurred 4 years postoperatively and the patient was again surgically intervened using the same approach. He presented to our Institute with 3 months evolution of dysphonia. Nasofibrolaryngoscopy and imaging studies were performed. Surgical treatment was decided upon with CO_2 laser using suspension microlaryngoscopy, obtaining excellent results. Some of the advantages of this approach are low morbidity because of the avoidance of performing a tracheostomy, rapid return to oral feeding without necessity of a feeding tube, and reduction in hospitalization days. Disadvantage includes difficulty in evaluating margins.

Key words: *Liposarcoma, hypopharynx, piriform sinus, laser resection.*

Introduction

Liposarcomas represent between 15 and 18% of all sarcomas with the most common site being the extremities and retroperitoneum. Liposarcomas in the head and neck region are rare and represent from 3 to 5.6% of all liposarcomas, most commonly presenting in the soft tissues of the neck as the primary site (1). Primary liposarcoma of the hypopharynx (piriform sinus) is extremely rare. Principal symptoms are dysphagia, dyspnea, dysphonia, airway obstruction and sensation of a foreign body (1). Treatment of choice is surgery, and the literature describes the performance of lateral pharyngotomy, simple excision and even total laryngectomy (1).

Histologically, liposarcomas are divided into the four following subtypes: well differentiated, myxoid, round cells and pleomorphic. The well-differentiated subtype is further subdivided into type of lipoma: sclerosing, inflammatory and undifferentiated (2).

Previous studies have demonstrated that liposarcomas of the hypopharynx are well differentiated (1) and more commonly present as polypoid or exophytic tumors. Although they do not metastasize regionally, multiple recurrences are frequent (3).

We present a case of liposarcoma of the hypopharynx treated with resection using suspension laryngoscopy and transoral laser.

Case Report

We report the case of a 23-year-old male whose illness began 7 years prior to his admission to our institution. The patient had a history of surgical resection using the cervical approach for a tumor located on the right side of the hypopharynx. A new resection for recurrence at the primary site had been performed 3 years prior. Histopathological report was myxoid liposarcoma. The patient presented to our clinic in November 2005 due to dysphonia of 3 months evolution without any other symptomatology and with no evidence of airway obstruction. Nasofibrolaryngoscopy was performed, with the finding of a submucous tumor on the right piriform sinus. Magnetic resonance imaging (MRI) was performed (Figure 1). Cervical approach was proposed with possible pharyngectomy; however, the patient rejected this proposal. In March 2006, suspension microlaryngoscopy and laser surgery were performed. Anatomic pathological study reported a 9.5 × 8.5 cm myxoid liposarcoma. Patient's postoperative evolution was unremarkable, with only pain in the oral cavity and edema of the tongue. The patient tolerated a bland diet and fluids on the second postoperative day. No bronchial aspiration was reported and the patient did not require a feeding tube.

MRI at 3 days postsurgery did not demonstrate evidence of tumor, with only edema and soft tissue emphysema (Figure 2). The patient was then scheduled for discharge and was followed-up as an outpatient. One year later the patient was asymptomatic. Nasofibrolaryngoscopy was performed and demonstrated recurrence at the primary site. Control MRI was performed (Figure 3). Surgery was again proposed via cervical approach; however, again the patient refused this option. Again, transoral laser resection was performed by suspension microlaryngoscopy with complete macroscopic resection. Because this was the patient's fourth recurrence, radiotherapy was offered but the patient refused. One year after his fourth resection, the patient is alive without disease.

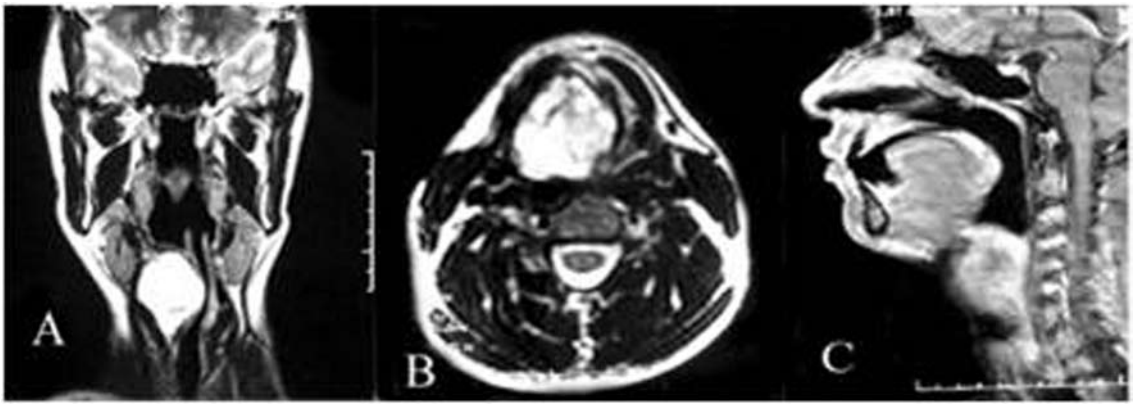

Fig. 1. (a) Coronal image (T2) with hyperintense lesion (3 x 3.5 cm) on the right side of the hypopharynx with mass effect over the larynx. (b) Axial image (T2) with predominantly hyperintense lobulated contour lesion with heterogeneous component that passes the midline. (c) Postcontrast image on sagittal cut (T1) with heterogeneous highlight of the lesion.

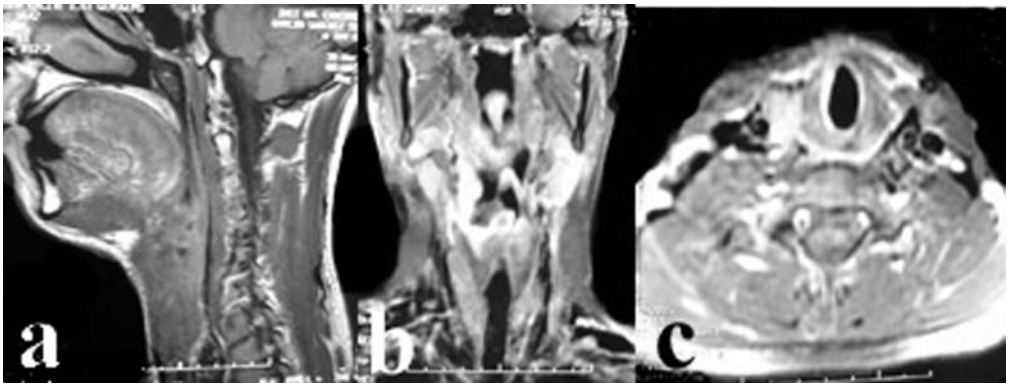

Fig. 2. (a) Sagittal cut image. (b) Coronal cut. (c) Axial (T1) postcontrast where absence of the lesion is identified without evidence of residua.

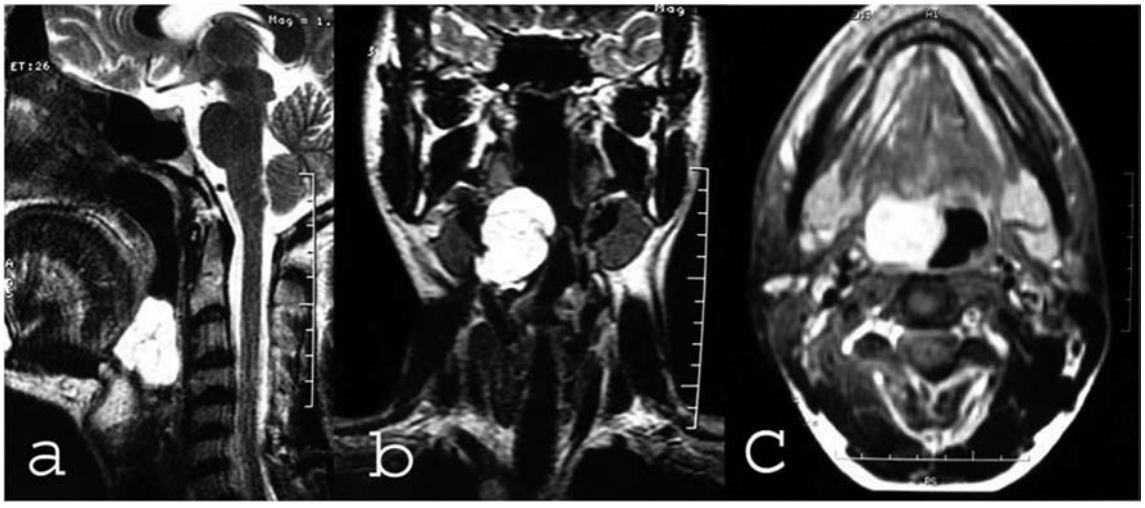

Fig. 3. (a) Sagittal, (b) coronal (T2), and (c) simple axial cut (T1) again identifying the recurring lesion of similar characteristics to the original study.

Discussion

Lipomas exclusively of the hypopharynx are rare because until now there have been 12 cases reported in the English-language literature. However, we found two additional cases in the Spanish-language literature (4,5). Incidence of this lipoma shows a male predominance (9:1) as in our case. Median age of patients is between 50 and 70 years (3). The patient presented in this study appears to be the youngest patient reported in the literature. The most common symptoms are dysphagia and dyspnea (1,6). Other associated symptoms are dysphonia and pharyngeal discomfort (1). Symptom duration varies from 3 to 6 months (6). Our patient presented with dysphonia. Despite tumor size, the patient had no airway obstruction because the epiglottis was only medially displaced without involving the front of the larynx.

Sizes of hypopharyngeal lipoma have been reported to be from 2 × 2 cm to 21.5 × 3 cm (1). Our patient presented with a lipoma of 9.5 × 8.5 cm. To our knowledge, this is the second largest hypopharyngeal lipoma reported in Mexico. Literature review and tumor characteristics are shown in Table 1. Liposarcomas of the hypopharynx are highly recurrent with very little possibility of regional metastasis. In our patient we were dealing with a second recurrence because normally these types of resections are highly marginal due to the anatomic site where they are localized, independent of the type of surgery performed. However, for more secure margins, total circular pharyngectomies and more complex reconstructions with microvascular free flaps may be required (1). This may demonstrate a significant impact on the patient's quality of life and was the reason that our patient did not accept an open surgical procedure. Average time between excision and recurrence has been reported to be 69 months (2). In our patient, the first recurrence was at 48 months and the second at 36 months.

Table 1. Surgical procedures reported.

	Reference	Age/ Sex	Symptoms	Localization	Pathology/Differentiation	Treatment	Follow-up
1	Wenig and Heffner (1)	60/M	Airway obstruction (months)	Left piriform sinus (2×2×1 cm)	Liposarcoma/Well	Simple excision, recurrence after 5 years, treated with complete simple excision	DWD at 17 y alter diagnosis due to chronic renal failure
		59/M	Dyspnea, dysphagia	Right piriform sinus (5.5×4×3 cm)	Liposarcoma/Well	Urgent tracheotomy following simple excision, recurrence at 6 months and treated with simple complete excision	AWD (25 years)
		46/M	Progressive airway obstruction (3 months), smoker	Left piriform sinus, polypoid tumor, submucosal	Liposarcoma/Well	Simple excision, recurrence after 1 year, treated with total laryngectomy + adjuvant RT (6600 rads)	AWD (14 years)
		77/M	Dysphagia, smoker	Right piriform sinus	Liposarcoma/Well	Simple excision, recurrence at 3 years, treated with total laryngectomy	AWD (6 years)
		25/M	Sensation of foreign body in pharynx (months), smoker	Left piriform sinus, pedunculated mass	Liposarcoma/Well	Lateral pharyngotomy with complete excision	AWD at 1 y, then lost to follow-up
		57/M	Increasing dysphagia; at most recent presentation the patient was able to "bring up" a large mass for external viewing; nonsmoker	Piriform sinus, polypoid and "fingerlike" mass	Liposarcoma/Well	Endoscopic resection, patient refused definitive resection of recurrent tumor until 1993 when he experienced difficulty in breathing and underwent excision of tumor with lateral pharyngotomy	AWD (16 years)
2	Fahmy et al. (2)	51/M	Sensation of protuberance in throat with occasional dyspepsia	Left piriform sinus, pedunculated	Liposarcoma/Well	Effective debulking leaving a small stalk originating in the left piriform sinus fossa. Excision of the base of the lesion via lateral pharyngotomy	AWD (2 months)
3	Sanz Gonzalo et al. (4)	81/M	Dysphagia, progressive dyspnea (6 months)	Right piriform sinus, pedunculated	Myxoid liposarcoma	Excision with lateral pharyngotomy	AWD (4 years)
4	Mandell et al. (6)	90/F	Dysphagia, dyspnea, difficulty in secretion management (3 months)	Right piriform sinus (6.5 cm in length)	Liposarcoma/Well	Endoscopic resection performed 2 years earlier for tumor of the same localization, reported as lipoma	9 months
5	Reed and Vick (7)	?/M	Regurgitation of mass towards oral cavity on inclination (2 months) with moderate airway obstruction	Left piriform sinus, pedunculated (21.5×3 cm)	Liposarcoma/Well	Right lateral pharyngotomy with complete tumor resection; 17 years prior had fibrolipoma (same location) treated with endoscopic excision	No data
6	Frey-Schottman and Stiens(8)	52/M	Dysphagia (2 years)	Piriform sinus	Liposarcoma/Well	Local excision, recurrence 3 years later treated with lateral pharyngotomy and radiotherapy (6000 rads)	AWD (8 years)
7	Wambeek and Mendelson(9)	60/M	Dysphagia, weight loss	Left piriform sinus	Sclerosing liposarcoma	Radio- and chemotherapy	AWD (1 year)
8	Case presented	23/M	Dysphonia (3 months)	Right piriform sinus 9.5×8.5×2.5 cm	Myxoid liposarcoma	Endoscopic resection with laser CO_2 (7 and 3 years prior tumor resection, same localization, same histology, right pharyngotomy)	AWD (5 months) (surgery: 3/27/06)

Treatments vary and seemingly depend on the preference or experience of the surgeon, with the most common procedure being simple excision with lateral pharyngectomy performed cervically. Because our patient decided against another surgical procedure using the cervical approach, suspension microlaryngoscopy and transoral resection were performed with CO_2 laser, as in the majority of the current studies (with the exception of one case performed cervically and one case with CO_2 laser) (Table 1). Advantages of transoral approach with CO_2 laser are low or no morbidity, and patients are able to resume oral feeding within 1 or 2 days. The need for a tracheostomy is avoided and hospitalization days are decreased. Our patient resumed oral feeding on the second day and did not require a tracheostomy. He was discharged on the third postoperative day of both procedures performed in our Institution. With the cervical approach, a greater number of complications may exist such as fistulas, necessity of cervical drains, longer time to resume oral feedings and, therefore, longer hospitalization. One disadvantage of laser surgery is the inability to adequately evaluate surgical margins pathologically due to fragmentation of the tumor. However, this problem will continue to be controversial regarding all laser resections for large tumors (Steiner W, personal communication). However, margins were well evaluated by the surgeon experienced in laser resections. Close surveillance of the patient should be carried out every 3 months. In the case of recurrence, surgical approach would be the same.

The well-differentiated histological type of tumor is the most common in all previous reports (1). The present case is described as a myxoid liposarcoma (which is considered to be a well-differentiated type of liposarcoma because of its good prognosis). Apparently, radiotherapy is not justified in this type of tumor without the histological subtype being of importance. A clear benefit has not been demonstrated in regard to recurrence (1).

Conclusions

Management of lesions of the hypopharynx can be performed by transoral laser surgery using suspension microlaryngoscopy. Evaluation of margins continues to be controversial in this type of management; however, these margins can and should be evaluated during surgery. Liposarcomas of the head and neck region are rare, and their management will continue to be controversial due to the low number of cases that currently exist.

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