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Case Report

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Two Cases of Laryngeal Myxoma Misdiagnosed as a Vocal Fold Polyp

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Introduction

Laryngeal myxoma is a rare benign neoplasm of uncertain mesenchymal cell origin and often misdiagnosed as a vocal fold polyp [1]. The term 'myxoma' was introduced by Virchow in 1871. The histological findings of myxoma were described to resemble a mucinous substance of the umbilical cord [2]. To the best of our knowledge, there are only eleven reported cases to date [1,3]. Here, we report two cases of laryngeal myxoma. Direct laryngomicrosurgery was performed under general anesthesia. The lesions have been stable without recurrence. Myxoma has a high incidence of local recurrence, because myxoma tends to infiltrate the surrounding tissue [4]. Further follow up might be necessary.

This study was approved by the Institutional Review Board of Fukushima Medical University on November 19th, 2013 (Confirmation Number: #1873), which is guided by local policy, national laws, and the World Medical Association Declaration of Helsinki.

Case Report 1

A 44-year-old man consulted a local ENT clinic due to five years of hoarseness and was diagnosed as having a vocal fold polyp. He was subsequently referred to our department. Examination by laryngeal flexible endoscopy (CLV-S40Pro, ENF-V2, OLYMPUS) revealed a large hypervascular lesion with a broad base on the right vocal fold (Figure 1A). No mucosal waves were observed on the mass on stroboscopic examination. Direct laryngomicrosurgery was performed under general anesthesia. An elastic hard mass was confirmed, which was suspected to be a tumor. The suspected laryngeal tumor was completely removed from the right vocal fold. The histopathological findings of the excised tumor were consistent with those of laryngeal myxoma (Figure 1B). After surgery, an improvement in voice quality was observed by vocal function analysis. Twelve months later, postoperative endoscopic findings showed no recurrence of the right vocal fold tumor (Figure 1C). Stroboscopic examination revealed an improvement in the vibratory amplitude and mucosal wave. Perceptual evaluation of the grade, roughness, breathiness, asthenia, strain (GRBAS) scales, mean airflow rate (MFR), AC/DC ratio using phonation analyzer PA-1000 (Minato Medical Science Co., Ltd, Osaka, Japan) and acoustic analysis using the Multi-Dimensional Voice Program (MDVP, Kay Elemetrics [KayPentax], Lincoln Park, NJ) to assess F0, Jitter (jitt), shimmer (shim), noise-to-harmonics ratio (NHR) were also improved (Table 1). No postoperative complications were observed, and no recurrence of the tumor has been observed for one and a half years.

Case Report 2

A 77-year-old man presented with one and a half years of hoarseness upon consultation at a local ENT clinic where he was diagnosed as having a vocal fold polyp. He was subsequently referred to our department. Examination by laryngeal flexible endoscopy revealed a hypervascular lesion with a broad base on the left vocal fold (Figure 2A). No mucosal waves were observed on the mass on stroboscopic examination. Direct laryngomicrosurgery was performed under general anesthesia. The laryngeal tumor was completely removed from the left vocal fold. The histopathological findings of the excised tumor were consistent with those of laryngeal myxoma (Figure 2B). After surgery, an improvement in voice quality was observed by vocal function analysis. Three months later, postoperative endoscopic findings showed no recurrence of the left vocal fold tumor. (Figure 2C). Stroboscopic examination revealed an

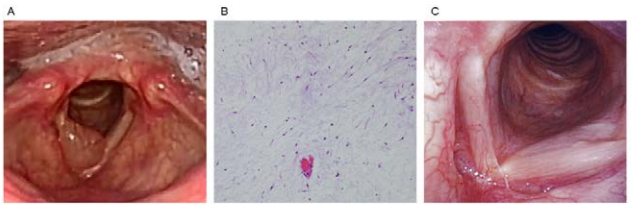

Figure 1: Case 1.

A: Preoperative endoscopic image of the larynx, A large hypervascular lesion with a broad base on the right vocal fold was confirmed.

B: Histopathological findings, Haematoxylin and eosin staining showed hypocellularity of the tissue section composed of spindle-shaped cells in the basophilic myxoid stroma.(original magnification x200)

C: Postoperative endoscopic image of the larynx Twelve months later, postoperative endoscopic findings showed no recurrence of the tumor.

Table 1: Examinations of voice before and after surgery.

Measure	pre-operation	post-operation
Perceptual		
GRBAS	G2 R1 B2 A0 S0	G0 R0 B0 A0 S0
Aerodynamic		
MPT (sec)	24	23
AC/DC ratio (%)	32.2	68.5
MFR(mL/s)	227	178
Acoustic		
F0 (Hz)	152.418	105.276
Jitt (%)	0.615	0.817
Shim (%)	4.32	1.784
NHR	0.137	0.131

GRBAS = grade, roughness, breathiness, asthenia, and strain
MPT = maximum phonation time
AC/DC ratio = vocal efficiency index (alternating current/direct current [AC/DC])
MFR=mean airflow rate
F0= fundamental frequency
Jitt = jitter
Shim = shimmer
NHR = noise-to-harmonics ratio

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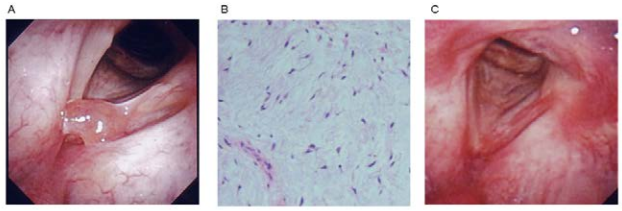

Figure 2: Case 2.

A: Preoperative endoscopic image of the larynx, A hypervascular lesion with a broad base on the left vocal fold was confirmed.

B: Histopathological findings, Haematoxylin and eosin staining revealed spindle-shaped cells in a background of abundant mucoid material. (original magnification x400)

C: Postoperative endoscopic image of the larynx, Three months later, postoperative endoscopic findings showed no recurrence of the tumor.

Table 2: Examinations of voice before and after surgery.

Measure	pre-operation	post-operation
Perceptual		
GRBAS	G2 R2 B1 A0 S0	G1 R1 B0 A0 S0
Aerodynamic		
MPT (sec)	6	15
AC/DC ratio (%)	22.3	57.6
MFR(mL/s)	583	302
Acoustic		
F0 (Hz)	211.774	150.464
Jitt (%)	1.363	0.777
Shim (%)	14.803	3.745
NHR	0.182	0.149

GRBAS = grade, roughness, breathiness, asthenia, and strain

MPT = maximum phonation time

AC/DC ratio = vocal efficiency index (alternating current/direct current [AC/DC])

MFR=mean airflow rate

F0= fundamental frequency

Jitt = jitter

Shim = shimmer

NHR = noise-to-harmonics ratio

improvement in the vibratory amplitude and mucosal wave. Maximum phonation time (MPT), perceptual evaluation of the GRBAS scale, MFR, AC/DC ratio using phonation analyzer PA-1000 and acoustic analysis using the Multi-Dimensional Voice Program to assess F0, Jitter (jitt), shimmer (shim), noise-to-harmonics ratio (NHR) were also improved (Table 2). No postoperative complications were observed, and no recurrence of the tumor has been observed for three months.

Discussion

Laryngeal myxoma generally presents as a large polypoid mass of the vocal fold. It is for this reason that in both of our cases the patients were misdiagnosed as having a vocal fold polyp at a local ENT clinic. Myxoma is a rare benign tumor of uncertain mesenchymal cell origin, typically involving the heart. Myxomas of the head and neck most commonly occur in the mandible and maxilla, and are likely to be odontogenic in origin [1]. They arise innocuously as a painless, slow growing mass [5]. Furthermore, myxomas lack a fibrous capsule and tend to infiltrate the surrounding tissue. Therefore, they have a high incidence of local recurrence. Surgical excision together with a rim of surrounding tissue has been reported to reduce the risk of recurrence [6]. In the present case, the findings of preoperative stroboscopic examination revealed that the lesion could be different from a usual vocal polyp, and a laryngeal benign tumor was considered as one of the differential diagnoses. Therefore, we completely excised the mass, not as a laryngeal polyp, but as a laryngeal tumor. The vocal fold has since remained tumor free. In a previous paper reported by Sena T et al. [5], local recurrence may occur during the first three years postoperatively. Because we did not excise the mass together with a rim of surrounding tissue, further follow up might be necessary.

The histologic differential diagnosis includes myxoid liposarcoma, myxoid chondrosarcoma, and laryngeal polyp [4]. In lipoblasts and chondroblast, S-100 protein is positive. In our Case 1, immunohistochemical analysis showed the absence of S-100 protein (data not shown). More than half of myxomas have been reported to show immunoreactivity for CD34 [7]. In our Case 1, immunohistochemical analysis showed the presence of CD34 (data not shown). As Ritchie et al. [1] reported, a laryngeal polyp is the entity most difficult to distinguish from a laryngeal myxoma. When examination by laryngeal flexible endoscopy and stroboscopy suggests laryngeal tumors, biopsies should be considered in order to avoid misdiagnosis.

Conclusion

We report two cases of laryngeal myxoma misdiagnosed as a vocal fold polyp. It is important to keep in mind that laryngeal myxoma often shows findings and characteristics of vocal fold polyp.

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