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Initial presentation and fatal complications of linear IgA bullous dermatosis in the larynx and pharynx

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Abstract

Two cases of linear IgA bullous dermatosis initially presenting as ulcerative lesions in the larynx and pharynx are reported. It was difficult to diagnose and treat the lesions, but they were finally diagnosed from the histopathological findings of accompanying skin lesion specimens. One of the patients required a tracheostomy due to increased airway stenosis by a laryngeal lesion. Despite general corticosteroid administration this could not be completely resolved, although partial opening of the glottis was observed, and the patient died of accidental tracheostomy tube complications during home care. Although there are no reports of this disease in the otolaryngological field, these rare diseases involving the skin and entire body should be considered in the differential diagnosis of laryngeal and pharyngeal ulcerative lesions, including airway stenosis. Furthermore, simple and safe procedures for relieving airway stenosis should be selected for rare and difficult-to-diagnose airway disease, prior to the final diagnosis.

Key words: Skin Diseases; Blister; Immunoglobulin A; Larynx; Pharynx; Airway Obstruction

Introduction

Various inflammatory and tumorous lesions can arise in the larynx and pharynx. Careful treatment planning for laryngeal and pharyngeal disease is required because respiration, swallowing, and phonation complications can occur when the disease, including treatment, affects laryngeal or pharyngeal functions. Standard methods for the diagnosis and treatment of common diseases of the head and neck (e.g. acute bacterial infection and frequent malignancies such as squamous cell carcinoma) have been established, but rare diseases may present with initial symptoms in the larynx and pharynx.

We present two cases of linear IgA bullous dermatosis where the larynx and pharynx were involved, where the lesions took a similar clinical course as the skin lesions after the diagnosis and treatment of this rare skin disease. One of the cases with laryngeal involvement required a tracheostomy for airway stenosis, and the patient died of accidental tracheostomy tube complications during home care. There are no reports of this disease in the otolaryngological field, and we therefore report two cases of this rare disease that should be considered in the differential diagnosis of laryngeal and pharyngeal lesions.

Case reports

Case 1

A 50-year-old man was referred to our clinic complaining of continuous hoarseness for 8 months. Laryngeal fibrescopy showed scar-like degeneration of the vocal folds and adhesion of the anterior part of the vocal folds. Rhinoscopy also showed scar-like degeneration of the nasal mucosa. After 5 months of follow up, the patient complained of acute increasing dyspnoea. As there was airway stenosis due to progressive vocal fold adhesion, emergent tracheostomy and biopsy of the laryngeal lesion under direct laryngoscopy were performed. Swelling of bilateral vocal folds, adhesion of vocal folds, ulcer with granulation formation in the false folds and arytenoids were observed under direct laryngoscopy (Figure 1). The histopathological diagnosis of the resected ulcerative and granulous lesions in this operation was granulation. Vocal fold adhesion was incised at this operation, but adhesion recurred 2 weeks after surgery. Since multiple ulcerative skin lesions were observed along with hoarseness (Figure 2a), the patient consulted our university clinic's Department of Dermatology. It was difficult to diagnose the skin lesion, but immunofluorescence assay revealed a linear deposit of IgA in the basement membrane of the skin and nasal mucosa specimens (Figure 2b). The final diagnosis was linear IgA bullous dermatosis. Since the course of the disease seemed to improve after corticosteroid administration, vaporization of the vocal fold adhesion using KTP LASER and placement of a silicone plate stent was carried out using a laryngomicrosurgical procedure (Figure 3a). One month after the second surgery, it was necessary to repeat the KTP LASER vaporization and re-stenting, as the silicone stent was displaced. The stent subsequently displaced again with recurrent adhesion of the vocal folds seen along with recurrent worsening of the skin lesion, and it was decided that further laryngeal surgery would not be effective unless the disease was under general control, and

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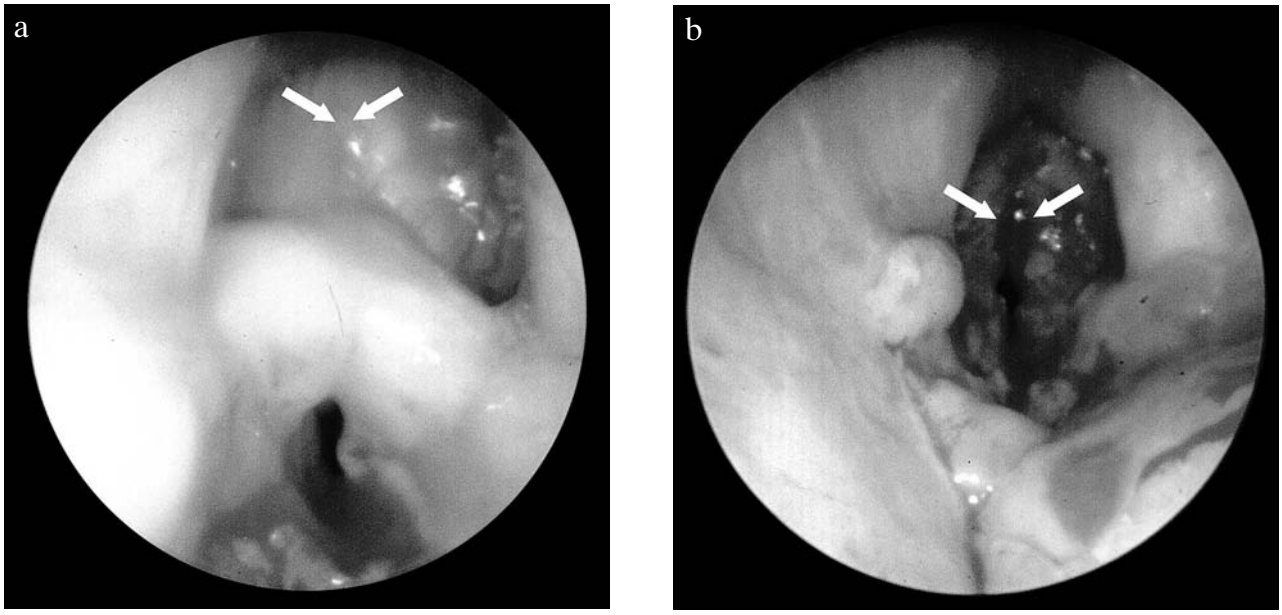

FIG. 1

Direct laryngoscopy of Case 1. (a) Swelling of bilateral vocal folds, adhesion of the free edge of vocal folds (arrows), and ulcer and granulation formation in the false folds and arytenoids were observed. (b) Adhesion of the vocal folds was incised (arrows).

the silicone stent removed. The vocal folds adhered again, several days after stent removal, and the laryngeal lesion was followed up with a tracheostomy tube as well as general control of the skin lesion by corticosteroid administration. Five months after stent removal, when the skin lesion improved and the steroid dose was tapered, partial opening of the glottis was seen by laryngeal fibrescopy (Figure 3b). Follow up of the patient continued with partial opening of the glottis under the control of general corticosteroid administration. Eighteen months after the final surgery, the patient was found dead at home probably because of accidental occlusion of the tracheostomy tube. No autopsy was performed according to the wishes of his family.

Case 2

A 67-year-old man was referred to our clinic complaining of a sore throat that had lasted for 2 weeks. A tumorous lesion with ulcer formation was seen in the left lateral wall of mesopharynx (Figure 4a). The lesion was biopsied, but only necrotic tissue was reported histopathologically. Magnetic resonance imaging (MRI) taken 8 days after the first visit showed a mass lesion spreading from the left lateral wall of the mesopharynx to the tongue base and retromolar region (Figures 4b and 4c). The radiological diagnosis was malignant mesopharyngeal tumour. Resection of the tumour, both for histopathological diagnosis and treatment of the lesion, was performed under general anaesthesia 1 month after the first visit.

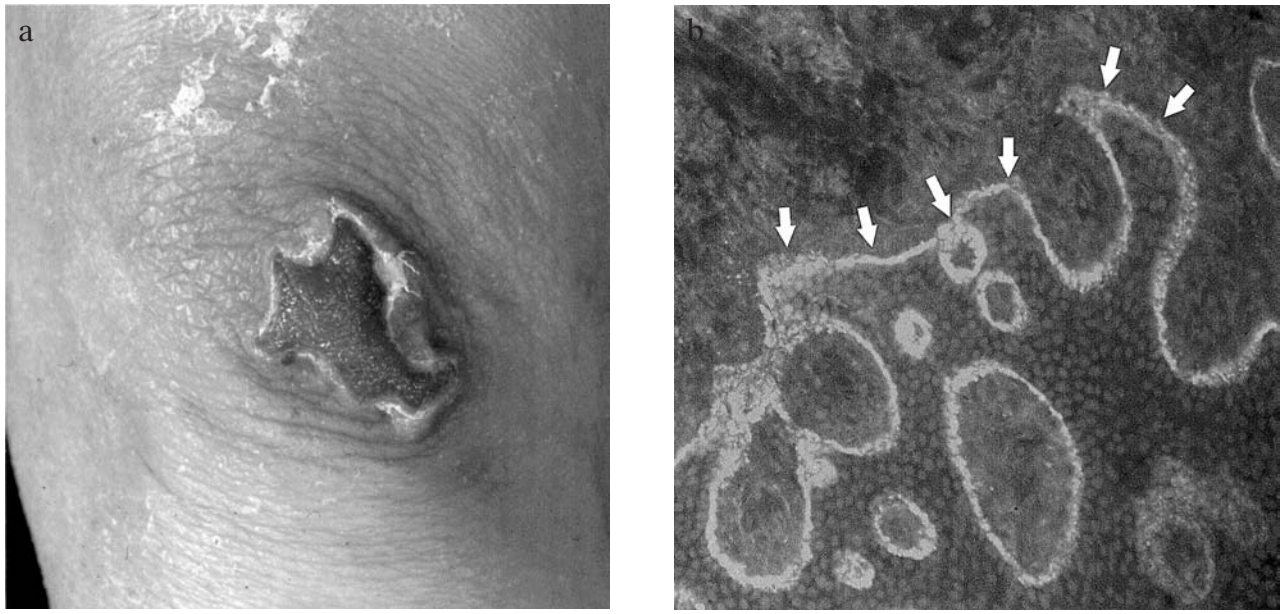

FIG. 2

(a) Erythema with ulcer was seen in the knee skin of Case 1. (b)Immunofluorescence assay of the skin of Case 1. Linear deposit of IgA in the basement layer was observed (arrows).

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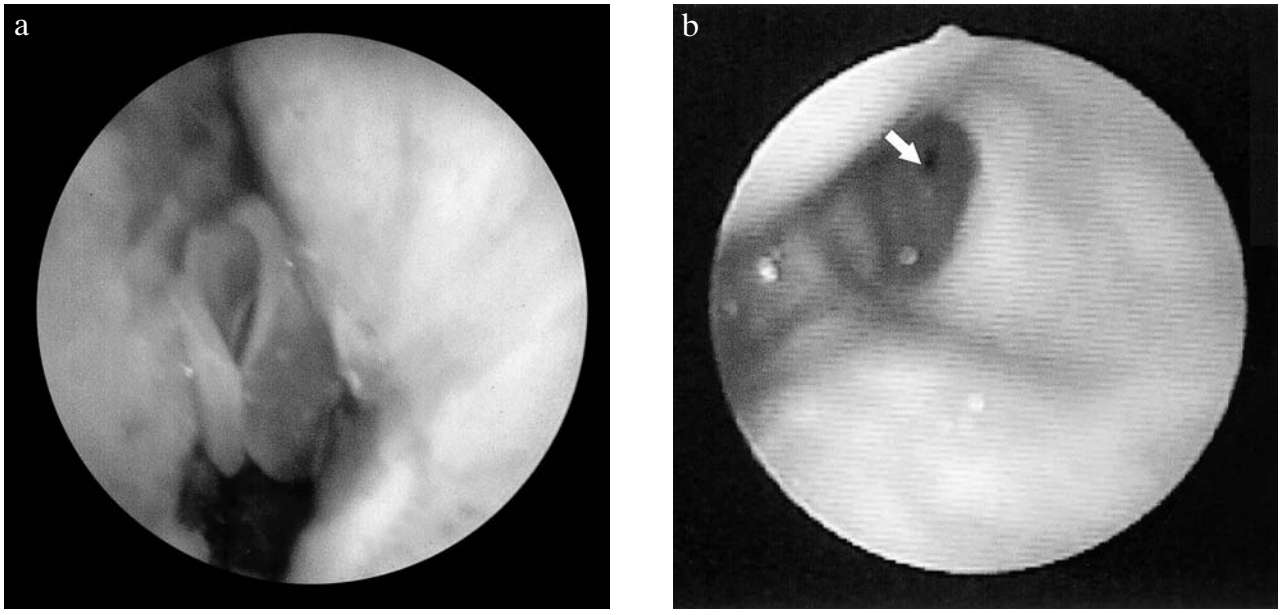

FIG. 3

(a) Finding after the second surgery in Case 1. Adhesion of the vocal folds was vaporized using KTP LASER and a silicone plate stent was placed. (b) Laryngeal fibrescopy 5 months after stent removal in Case 1. Partial opening of the glottis was seen (arrows).

Based on histopathological diagnosis of the specimen as granulation, the patient was followed up by our department. One year after resection, exacerbation of the sore throat developed, and multiple ulcer formation in the mesopharynx and oral cavity was observed. Since multiple ulcerative skin lesions also appeared concurrently, the patient consulted the university clinic's Department of Dermatology for a diagnosis. A diagnosis of linear IgA bullous dermatosis was made, using immunofluorescence assay. Corticosteroids were administered for mesopharyngeal and oral ulcers, and both mucosal and skin lesions improved. The patient was also followed up, but he was not able to stop the general corticosteroid administration, and has been admitted repeatedly because of bleeding from the pharyngeal lesion.

Discussion

Ulcerative lesions are relatively common disorders in the upper respiratory system, and are usually diagnosed and treated as inflammation or tumour based on local, histopathological and radiological findings. A series of

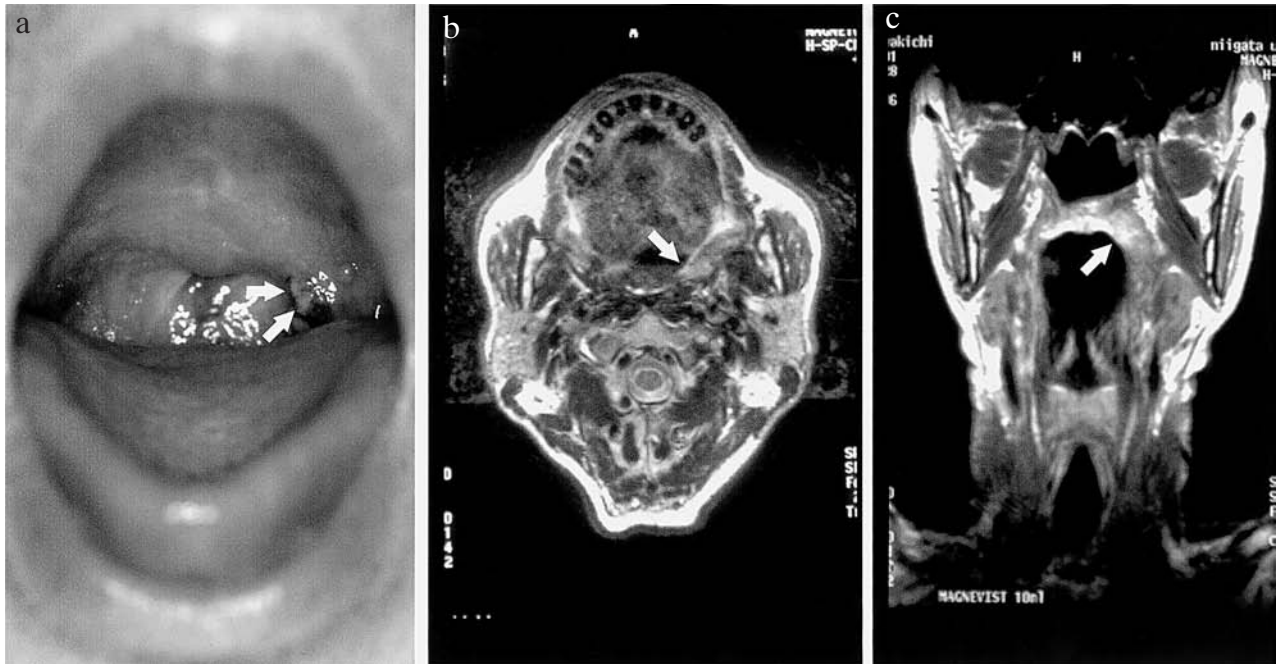

FIG. 4

(a) Findings of the pharyngeal lesion in Case 2. A tumorous lesion with ulcer formation was seen in the left lateral wall of the mesopharynx. (b,c) MRI taken 8 days after the first visit of Case 2. A massive lesion spreading from the left lateral wall to the tongue base and retromolar region was observed (arrows).

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lesions with difficult diagnosis and treatment has been discussed for the oral cavity and pharynx,[1–3] although no mechanism for the lesions (i.e. intractable oral and pharyngeal ulcers) has been established.[1] The incidence of intractable oral and pharyngeal ulcers was reported to be 1.4 in 10 000 out-patients in otolaryngological clinics, and 32 per cent of otolaryngology departments in general hospitals have never experienced the disease.[2] The incidence of intractable ulcer is lower in the larynx, but no mechanism has been established. Although the usefulness of steroid administration in the treatment of intractable oral and pharyngeal ulcers has been recognized,[1] careful follow up is necessary because a final diagnosis of systemic disease, such as Behcet's disease, after the initiation of steroid treatment has been reported.[1,3] The pathophysiology of intractable oral and pharyngeal ulcers is still unknown, but an immunological mechanism has been considered.[3]

- **Two patients with linear IgA bullous dermatitis neoplasia presenting as ulcerative lesions in the upper airway are presented in this paper**
- **Histopathological examination was required to ascertain the cause of these lesions**
- **One patient died in spite of a tracheostomy and the other has suffered repetitive episodes of bleeding in spite of corticosteroid support**
- **The possibility of such lesions should be considered in patients presenting with ulceration and upper airway obstruction**
- **The authors state that such a condition has not been previously reported in the otolaryngology literature**

Linear IgA bullous dermatosis, the final diagnosis of both cases in this paper, was proposed as an independent skin disease in 1979.[4] The disease is characterized as a systemic disease with a linear (not granular) deposit of IgA in the basement membrane of the skin, and shows systemic skin erythema and multiple bulging blisters with itching.[5,6] The aetiology of this disease has not been established, but implications of infection, drugs and malignancy have been considered. The age distribution of the disease shows two peaks, below 10 years old and from 40 to 50.[5] Histopathological findings demonstrate subcutaneous blisters, and the final diagnosis is based on the linear IgA deposit in the basement membrane.[6] When treating this disease, the administration of DDS (4-4-diamino-diphenyl sulfone) and corticosteroids is considered effective.[5,6]

Oral mucosal lesions are occasionally involved in patients with linear IgA bullous dermatosis,[7–9] and patients with oral and nasal mucosal lesions have been reported.[7] A clinical study showed oral mucosal involvement in 16 out of 101 patients (15.8 per cent) with this disease.[7] The mechanism of skin lesions is considered to be an autoimmune response of the IgA antibody against the basement membrane of the skin, and mucosal lesions may be derived from the co-existence of the antibody both in the skin and in the mucosa.[5,10] The characteristic findings of mucosal lesions in this disease have not been described due to their low incidence.[5,6] Although laryngeal stenosis in patients with this disease, as in Case 1, has never been reported, a patient with tracheal stenosis has been reported.[9]

Pemphigus and pemphigoid are relatively well-known representative systemic skin diseases that involve both skin and oral mucosa in the otolaryngological field,[5,6,10] and the essential difference of their mechanism from linear IgA bullous dermatosis is the IgG (not IgA) deposit.[10] The pathophysiology of these diseases derives from anti-epithelial intercellular antibody in the pemphigus and anti-epithelial basement membrane antibody in the pemphigoid.[10] The initial symptoms of most pemphigoid patients are intractable oral mucosal ulcers.[10] In patients with pemphigoid, the incidence of mucosal lesions is higher in patients with cicatricial pemphigoid.[10]

Specimens for histopathological diagnosis of the laryngeal lesion of Case 1 and the pharyngeal lesion of Case 2 were obtained at surgery before the final diagnosis, therefore no immunofluorescence assays of the laryngeal and pharyngeal lesions could be performed. Re-examination of the specimens was planned, but could not be performed because of the small amount of specimens. These laryngeal and pharyngeal lesions were considered to be complicated lesions of linear IgA bullous dermatosis for the following reasons: (1) The appearance of mucosal and skin lesions was concurrent in both cases; (2) linear IgA deposit was observed in the nasal mucosal specimen of Case 1 (no photograph could be shown because of a deterioration of the specimen); (3) similar clinical courses of skin and mucosal lesions were observed after corticosteroid administration in both cases.

Since IgG, IgA and IgM antibodies were positive in the specimens of intractable oral and pharyngeal ulcers,[3] the presence of linear IgA bullous dermatosis is possible in patients diagnosed with intractable oral and pharyngeal ulcers.

In both Cases 1 and 2, surgery was performed as the initial treatment prior to systemic treatment after the final diagnosis, and the condition was exacerbated. Furthermore, repeated surgery failed in Case 1, and the patient died of airway complications. Although the tracheostomy tube complication in Case 1 was an unfortunate accident whilst at home, the loss of quality of life can possibly be reduced when a simple tracheostomy to control airway stenosis is performed, followed by a final differential diagnosis.

For the initial treatment of patients with diseases that cause airway stenosis in the otolaryngological field (e.g. larynx, pharynx), both the release of airway stenosis and the control of the local lesion should be considered. It should be remembered that chronic inflammation due to systemic diseases involving the skin and mucosa, such as linear IgA bullous dermatosis, may occur in the larynx and pharynx, and careful planning of the diagnosis and treatment with systemic considerations accompanied by multi-departmental consultation is required. In the treatment of local lesions causing airway stenosis, such as the laryngeal lesion in Case 1, simple and safe release of the stenosis followed by systemic diagnosis and treatment is particularly essential.

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