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Otolaryngology -- Head and Neck Surgery 2011 145: 360 originally published online 11 March 2011
DOI: 10.1177/0194599811402162

The online version of this article can be found at:
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Benign Symmetric Lipomatosis Involving the Supraglottic Larynx: A Rare Cause of Dysphonia

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Keywords
lipomatosi
s, lipomas, benign symmetric lipomatosis, larynx, laryngeal lipomatosis, Madelung disease, multiple symmetric lipomatosis, Launois-Bensaude adenolipomatosis

Received December 5, 2010; revised February 3, 2011; accepted February 8, 2011.

Benign symmetric lipomatosis (BSL) is a rare disease characterized by symmetric, nonencapsulated deposits of fatty tissue occurring around the head, neck, and upper extremities. BSL is a systemic form of Madelung disease, which is diffuse lipomatosis of the neck.1,2 There are 7 documented cases of direct laryngeal involvement of BSL in the literature, describing glottic and transglottic involvement, but no cases involving only the supraglottic larynx.3

Case Presentation
A 48-year-old man of Mediterranean descent presented to the Lakeshore Ear, Nose & Throat, PC, Professional Voice Center with a chief complaint of dysphonia. He was a business executive with high vocal demands who complained of progressive raspiness to his voice for many years. He had a history of reflux, but aggressive management had not helped his voice. He denied other ominous head and neck symptoms. Past medical history was otherwise significant for numerous fatty tissue deposits on the back, stomach, neck, and chest. Past surgical history included excision of a supraclavicular lesion, which pathology confirmed as “aggregated adipose tissue.” His social history included daily alcohol use for 10 years.

On physical examination, the patient’s voice was pressed and raspy. Videostroboscopic examination revealed bilateral anterior supraglottic lesions involving the ventricles and false vocal folds (Figure 1). The true vocal folds moved symmetrically but had reduced mucosal wave. His body mass index was 29 kg/m². The remainder of the head and neck examination was unremarkable.

Microsuspension direct laryngoscopy was performed. The lesions were removed with a combination of CO₂ laser and cold excision. As the lesions were excised, it became evident that they were large fatty deposits emanating from the ventricles and filling the false vocal folds. The true vocal folds were uninvolved (Figure 2). Pathology confirmed the presence of unencapsulated deposits of adipose tissue.

Discussion
BSL is a rare disorder found in men of Mediterranean descent, aged 30 to 60 years. It is characterized by nonencapsulated deposits of fatty tissue around the head, neck, shoulders, and upper extremities.

BSL is a systemic form of Madelung disease, which is diffuse lipomatosis of the neck.1,2 It is usually asymptomatic. There are a

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few reports of dyspnea and/or dysphagia from mediastinal involvement; however, this is rare. Our patient was not obese but had a history of diffuse adipose tissue accumulation throughout his upper trunk and neck, lending to his diagnosis of BSL. His excessive accumulation of supraglottic fat was likely related.

BSL literature suggests a strong association between BSL and alcohol intake. Sixty to ninety percent of patients with BSL have a history of alcoholism, suggesting a role in lipoma development; however, no direct link has been identified. There is no association between cessation of alcohol use and regression of lipomas. BSL has also been associated with alcohol-related diseases including hyperlipidemia, hyperuricemia, impaired glucose tolerance, liver disease, and renal tubular acidosis. Our case report supports the link between alcohol intake and fatty tissue deposition; however, our patient had no history of alcohol-related diseases.

The pathophysiology of BSL is poorly understood. Enzi et al has reported a biochemical defect in adrenergic-stimulated lipolysis, suggesting that BSL is a defect of lipid mobilization in adipose tissue. It has been found to occur in areas of normal fatty deposition and in regions where fat is not usually present. Although fat normally may be found throughout the paraglottic space, there was no evidence of excessive accumulation within this patient’s true vocal folds or subglottis.

Lifestyle modifications, medical treatment, and surgical excision have been explored as options for treating BSL. More studies need to be done to determine the value of medical therapy. Surgical excision was successful in this patient.

This article was submitted to the St John Providence Hospital and Medical Centers Institutional Review Board and was granted exemption.

**Author Contributions**

Kimberly R. Ostrowski, corresponding author, acquired all data from patient and chart, conducted literature review, drafted initial report and revised case report, performed final revisions for publication; Adam D. Rubin, helped create report concept and edited report for content and publishing.

**Disclosures**

**Competing interests:** None.

**Sponsorships:** None.

**Funding source:** None.

**References**


![Endoscopic view of right supraglottic lesion with the superior mucosal surface removed, revealing fatty deposits.](source)