

Olgu Sunumu

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## Yanlış Astım Tanısı: Erişkin Yaşta Tanı Almış Konjenital Subglottik Stenoz

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### Özet

Tedaviye yanıt vermeyen astımı taklit eden semptomları olan 21 yaşında bayan hasta sunulmaktadır. Hastada akım volüm halkasında inspiratuvar ve ekspiratuvar eğrilerde karakteristik plato izlenmesi üzerine sabit üst havayolu obstrüksiyonundan şüphelenildi. Yapılan ileri tetkikler ile hastada konjenital subglottik stenoz olduğu ve astım tanısının yanlışlığı ortaya konuldu. Bu vaka ile tedaviye yanıt vermeyen astımlı hastalarda akım volüm halkasının kritik öneme sahip olduğu vurgulanmıştır.

**Anahtar Kelimeler:** akım volüm halkası, astım, subglottik stenoz

### Abstract

We report a 21-year old female patient with symptoms mimicking asthma unresolved with pharmacotherapy. With the flow-volume loop representing characteristic plateau in the inspiratory and expiratory curves she was suspected to have fixed upper airway obstruction. Further examinations in this setting revealed that she was misdiagnosed as asthma, though she had congenital subglottic stenosis. With this case it is emphasized that flow-volume loops are critically important in asthma patients who are refractory to treatment.

**Keywords:** asthma, flow volume loop, subglottic stenosis

### Background:

Fixed upper airway obstruction (UAO) is presented with the characteristic plateau in the inspiratory and expiratory curves of flow-volume loop (1). Tracheal stenosis and tracheal obstruction due to goiter are the etiologies underlying fixed UAO and the presenting symptoms mostly mimic asthma (2,3).

### Case report:

A 21-year old female patient admitted to allergy clinic with dyspnea and wheezing. She had priorly been treated for asthma intermittently since early teens but her symptoms did not resolve with drugs. Upon admission she was dispneic and had biphasic stridor. Reflection of stridor was heard on auscultation of lung fields. Additionally she was wearing hearing aid for hearing loss diagnosed in the first few years of her life.

Lung function tests revealed severe obstruction with values; FEV1,%predicted: 43%, FVC,%predicted: 99%, FEV1/FVC: 38 and reversibility test was negative. The flow-volume loop demonstrated fixed UAO (Figure 1).

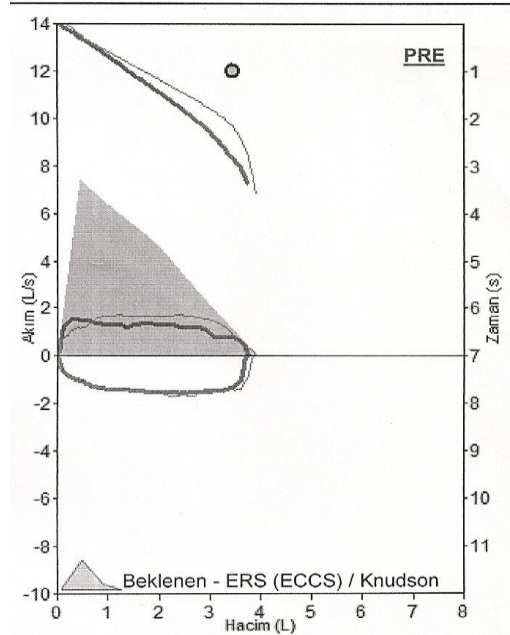


Figure 1. The flow-volume loop demonstrating fixed upper airway obstruction represented with the characteristic plateau in the inspiratory and expiratory curves.

Arterial oxygen saturation was normal. Physical examination of upper airways revealed nasal septum deviation and nasal concha hypertrophy. Thyroid examination with ultrasonography was normal. Laryngeal computed tomography (CT) showed subglottic stenosis revealing the underlying pathology for fixed UAO (Figure 2).



Figure 2. Laryngeal computed tomography section demonstrating subglottic stenosis.

She denied any prior intubation history that could be the cause for stenosis. Asthma treatment was ceased and further rheumatologic and genetic investigation was planned for possible conditions underlying congenital subglottic stenosis and hereditary hearing loss. The markers associated with Wegener's granulomatosis, c-ANCA and p-ANCA were negative. Genetic counselling did not reveal any underlying hereditary condition. Mechanical treatment of the stenosis was planned after these assessments. With direct laryngoscopic evaluation under general anaesthesia performed subglottic stenosis without any accompanying granulation tissue was seen and mechanical dilatation was performed. Prominent clinical response was reported by the patient in terms of dyspnea and stridor after the procedure. Follow-up of the clinical outcome was planned for further repetition of the procedure was planned.

### Conclusion:

Dyspnea and wheezing are commonly encountered respiratory symptoms in the primary health centers. These symptoms are usually accepted to be the signs of asthma and the patients are treated accordingly. In most of the patients signs and symptoms are controlled, at least partially, with the use of inhaled corticosteroids. Reference of the patients to a specialist for further examination is extremely important if they fail to benefit from appropriate use of anti-asthmatics. One should also

be aware that patients with UAO may misinterpret their stridor originating from the narrowed upper airway as they have wheezing. Observation of flow-volume loops as well as spirometric evaluation may help for differential diagnosis.

In the case discussed congenital subglottic stenosis leading to fixed UAO was diagnosed in adulthood. The diagnosis was based on evaluation of flow-volume loop which represented characteristic inspiratory and expiratory plateau and laryngeal CT representing tracheal narrowing.

Subglottic stenosis is partial or complete narrowing of the subglottic area just below the vocal folds. Most of the cases are acquired and are related with injury; ie history of intubation. Autoimmune disorders especially Wegener's granulomatosis may also be the underlying etiology. The pathology is called congenital if no history of intubation or other acquired causes are determined. Severity of the disease in these cases is the main factor determining early diagnosis in childhood, though diagnosis may be late in milder ones (4,5). In cases with coexistent hereditary hearing loss granulomatous diseases, especially Wegener's granulomatosis as well as hereditary syndromes like CHARGE syndrome which presents majorly with ocular coloboma/microphthalmia, choanal atresia / stenosis, cranial nerve abnormalities and characteristic auditory and/or auricular anomalies are likely and they should be investigated accordingly (6,7).

Presented case emphasizes that physicians should be concerned in cases with retractable asthma especially if presents with stridor, and that further investigations including organic upper airway obstruction should be held in order to prevent malpractice. Flow-volume loops are important and easy to perform diagnostic tools in such cases.

This case was presented in EAACI Allergy School, 16-18 April 2015, Istanbul, Turkey (P08).

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