Refractory wheezing: paradoxical vocal cord motion

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Introduction

Paradoxical vocal cord motion (PVCM) can be characterised as an abnormal adduction of the vocal cords inspiration and much of expiration producing airflow obstruction at laryngeal level. Many patients with PVCM are wrongly diagnosed as having refractory asthma, and suffer morbidity from unnecessary treatment such as high dose exogenous steroid and bronchodilator use, and even ventilation. We report a patient with PVCM masquerading as refractory asthma.

Case history

A 39-year old soldier with repeated episodes of wheezing and stridor for 6 years was referred for laryngeal examination. During his first episode of "asthma" he had required ventilation as he did not respond to conventional treatment. He had repeated hospital admissions in spite

of being on optimum treatment. He had no childhood history of asthma or atopy.

Chest xray was without signs of hyperinflation and his eosinophil count was normal. Fibre-optic laryngoscopy (figure 1; a, b and c) showed normal vocal cord movement during phonation. There was adduction of the vocal cords during inspiration and in much of the expiration, with a posterior chink. Bronchoscopy showed a normal tracheobronchial tree. Lung function tests showed variable extra-thoracic obstruction and small airway obstruction. The flow volume loop showed inspiratory limb flattening (table and figure 2).

A diagnosis of paradoxical vocal cord dysfunction with co-existing small airway obstruction was made. Organic and non-organic causes were excluded.

He was taught relaxation therapy, and given intralaryngeal injection of botulinum toxin type A. At present he is free of attacks.

Figure 1

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Table. Lung function tests

Spirometry		Predicted Value	Observed Pre	Observed %Pred	Observed Post	Observed %Pred	Percentage Change
FVC	L	3.77	3.20	84.00	2.50	66	-21
FEV5	L	2.47	2.72	110.00	1.94	78	-28
FEV1	L	3.14	3.19	101.00	2.47	78	-22
FEV1/FVC	%	83.00	100.00	120.00	99.00	119	-01
FEF25-75	L/S	3.95	5.23	132.00	3.43	86	-34
PEFR	L/S	8.67	9.97	114.00	5.50	63	-44
FEF25	L/S	8.02	9.60	119.00	5.30	66	-44
FEF50	L/S	4.71	5.67	120.00	3.33	70	-41
FEF75	L/S	1.92	3.05	158.00	2.49	129	-18
FET	Sec	1.10		1.13		02	
FIVC	L	3.77	0.71	18.00	1.77	46	149
PIFR	L/S	5.78	0.50	8.00	0.58	10	16
FIF50	L/S		0.23		0.47		104

Figure 2. Flow-volume loop showing flattening of inspiratory limb.

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