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Non-respiratory symptoms of acute asthma

JOHN SHNEERSON

From Newmarket General Hospital, Newmarket and Addenbrookes Hospital, Cambridge

Asthma is usually defined as widespread reversible intrapulmonary airflow obstruction and in a recent textbook on asthma no mention of non-respiratory symptoms is made.[1] There have, however, been occasional reports of such symptoms in patients with asthma[2–4] and the aim of this study was to examine their nature and how frequently they occur.

Patients, methods, and results

Thirty consecutive patients with asthma attending the chest outpatient clinics at Newmarket General and Addenbrooke's Hospitals were studied. Their details are shown in table 1. The diagnosis was supported in all by 15% improvement in peak flow or FEV_1 after administration of bronchodilator.

Each patient was given a questionnaire on non-respiratory symptoms associated with their asthma (table 2). After this had been completed the answers were discussed with the author to elicit further details.

The number of patients experiencing symptoms is shown in table 2. There was no association between any of the symptoms and age, age of onset of asthma, or number of positive skin test responses. Tiredness, sleepiness, and depression were usually present for about one day before the asthma deteriorated, but occasionally for two to three days. Twenty (67%) patients had nose and throat symptoms a few minutes before their asthma attacks and a further two had similar symptoms only during their attacks. Nose and throat symptoms were present in all six subjects with a dry mouth before their asthma attacks, in two out of six with this symptom during attacks, in all seven who were thirsty before their attacks, in all eight with skin itching, in five out of six with skin flushing, and in all three with colicky abdominal pains. Itching of the skin was noticed a few minutes before the onset of asthma. In nearly every case this was around the nose, chin, chest, neck, eyes or scalp, but it occurred elsewhere in the body in addition in three patients. One subject found that scratching her skin appeared to exacerbate her wheezing. Three of the patients with skin flushing also noticed itching. Limb and back aches were present for up to two hours before the deterioration in asthma.

Palpitations, increased sweating and dizziness occurred especially during severe attacks. The two patients who were nauseated before their asthma attacks were both taking a theophylline preparation, but the five who were nauseated during the attacks noticed this symptom particularly when they were coughing frequently. The headaches noticed before and after attacks were migrainous in character, but those occurring during asthma attacks were related to prolonged coughing bouts.

Table 1 *Details of the patients*

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Male	13
Female	17
Mean age (range) (y)	37·5 (13–75)
Mean age of onset of asthma (range) (y)	19·6 (1–69)
Treatment	
Inhaled β_2 stimulant	21
Inhaled sodium cromoglycate	4
Inhaled ipratropium bromide	3
Inhaled steroid	13
Oral theophylline	11
Oral prednisolone	3
No of positive skin test responses*	
0	12
1	2
2	6
3	2
4	4
5	4

*Tested with control material, housedust, housedust mite, grass pollen, cat fur, and *Aspergillus fumigatus*.

Table 2 *Symptoms associated with asthma*

	Relationship to asthma		
Symptoms	*Before*	*During*	*After*
Tiredness, sleepiness, depression	12†	3	—
Weight change	—	—	—
Nose and throat symptoms*	20	2	—
Dry mouth	6	6	—
Thirst	7†	3	—
Skin itch	8	—	—
Skin flush	6	—	—
Abdominal colic	3	—	—
Limb and back pains	4	2	—
Headache	1	2	3
Palpitations	—	7	—
Sweating	3†	8	—
Nausea	2	5	—
Dizziness	—	9	—
Faintness	—	1	—
Limb tingling	—	1	—
Increased urinary frequency	—	4	—

*Nasal symptoms—blocked, itching, or runny nose or frequent sneezing; throat symptoms—itching or tickling of the throat.
†Two patients also felt less tired, one less thirsty, and one less sweaty before the attacks.

Address for reprint requests: Dr JM Shneerson, Newmarket General Hospital, Newmarket, Suffolk CB8 7JG.

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Haemoptysis was reported by six patients. It occurred only during episodes of asthma in four, and repetitively in the mornings in one other patient. It was not related to the age of the patient, the age of onset of asthma, skin test positivity, or the presence of nose or throat symptoms. It tended to occur early in the natural history of the asthma.

Discussion

This study has shown that non-respiratory symptoms are frequent in asthma. Some of these symptoms appear to be an integral part of the asthma itself and others are secondary reactions to it, particularly to severe attacks. A symptom complex of nose, throat, and mouth symptoms with skin itching and flushing, thirst and abdominal colic commonly precedes the respiratory symptoms of asthma by a few minutes. They are probably the result of processes occurring in the upper respiratory tract, skin, and gut similar to those in the bronchi and may be analogous to the aura of migraine attacks. They do not occur in every patient or every attack, possibly because of different trigger factors initiating the attacks or to variation in the pathogenesis of asthma between individuals.

Tiredness, sleepiness, or depression before the onset of asthma was frequent. Similar symptoms have been recorded before migraine attacks[5] and could originate in the brainstem reticular formation. This initial phase could generate the later respiratory symptoms and premonitory symptom complex through an alteration in the autonomic output to the upper and lower respiratory tract and to the skin and other related sites, or possibly through a humoral mechanism.

Most of the other symptoms occur particularly during rather than before attacks of asthma. They are probably an indication of the severity of the attack or the anxiety generated by it, rather than an integral part of the asthma itself. Palpitations could, however, be due to the use of sympathomimetic drugs or possibly to exertion if this triggered the asthma. Dryness of the mouth may be caused by mouth breathing due to a blocked nose. In some patients dizziness was related to frequent coughing and may represent cough near syncope, but in others it may be due to hypocapnia, which would also explain the limb tingling experienced by one patient.

In addition to the non-respiratory symptoms the occurrence of haemoptysis was recorded since it has recently been suggested that this may be a symptom of asthma.[6] In this study six subjects (20%) had coughed up blood since they had developed asthma. This may be due to the combination of hyperaemia of the bronchial wall and frequent coughing.

References

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