

BRONCHIAL ASTHMA

by

R. P. GOPINATH, R.N., S.T.

BRONCHIAL Asthma is characterised by attacks of wheezing, a compressed feeling in the chest, difficulty in breathing and cough. Air is imprisoned in the the alveoli due to temporary narrowing of the bronchioles. There are three combinatory factors for this narrowing—the bronchiolar muscles, under the control of the automatic nervous system, contract spasmodically, the mucous membrane lining the alveoli becomes swollen, and the bronchial passage is obstructed by the secretion of sticky mucus. The chest is held in a state of expansion, and the patient experiences great difficulty during expiration.

Clinical Features

The attack usually occurs late in the night or in the early hours of the morning, when the patient is awakened by the alarming signs of breathlessness. He sits up, hunched forward, holding the sides of the bed or the arms of a chair, in order to bring the ancillary muscles of respiration into action. He is obviously distressed and is unable to talk, except a few words in between breaths. There is prolonged, laboured, whizzy expiration in contrast to the short and easy inspirations. At the onset, a little dry cough may be marked, but during the attack, he is unable to cough and may produce towards the end, sticky, tight pellets of mucoid sputum. During the expiratory phase, the veins of neck are found distended. The patient has an anxious look, face is congested with eyes staring. The chest is distended, pulse rate is accelerated and cyanosis may be apparent. In severe attacks, complete obstruction of the bronchioles may occur, requiring immediate attention and treatment. This over-whelming type of attack may prove fatal.

Heredity

Migraine is a common finding in the parents. When a child or

an adolescent is seized with asthma, there is likely to be a family history, either of asthma itself or some other allergic disorder such as hay fever, eczema or urticaria. The causes of the disease are complex and some of the following factors influence its development.

Allergic Factors

This condition is due to exposure to some special protein to which the individual is hyper-sensitive. There are a large number of allergens and they fall into two main groups: those present in the atmosphere which are inhaled by the patient, and those in the food which are ingested; the former being the most common. Examples of inhalants are pollen and spores from plants, moulds, dust, animal hair and feathers. Ingested allergens are fish, eggs, fruits, milk and, at times, sensitive drugs.

The patient's history is the best guide for investigating whether or not allergy is the causative factor of his asthma. It may be found that eating a particular food, or that coming in close contact with cats or dogs induces an attack. If the attack occurs only in early summer months, it is reasonable to suspect that pollens are responsible. So the time of year, the area, and the circumstances of the attack, will often lead to the cause of asthma.

Infection

There is often a history of cold, fever and expectoration of purulent sputum. The duration of the attack tend to be longer than the attacks due to allergy. Infection of the upper respiratory tract and complication of chronic bronchitis are often important factors.

Psychological Influences

Anxiety, fear, worry, resentment and discord at home, seem to be the emotional factors involved which form the underlying cause for tension in the bronchi. The threat

of asthma may be a weapon used by children to gain attention or to avoid reprimand. Any undue anxiety exhibited by parents only serves to increase the potency of this weapon.

Treatment

Symptomatic treatment to relieve the distress should have precedence over the removal of the cause of asthma. Adrenaline, Ephedrine and Isoprenaline are the common drugs used; these have a stimulating effect on the sympathetic system. Subcutaneous injection of 0.5 ml. of 1/1000 of adrenaline; or ephedrine tablets by mouth of 15-30 mg. doses, or tablets of Isoprenaline 10 mg. placed to dissolve under the tongue, are found effective. Often inhalation of 1% Isoprenaline in solution from a spray brings about spectacular relief. These drugs may cause tachycardia.

In a severe attack, which does not respond to the above measures, Hurst's methods of giving subcutaneous adrenaline is found effective. In this therapy, a syringe is left in position, injecting one minim every minute until the attack is relieved. Another advantage of employing this method is the avoidance of dangerous concentrations of the drug in the blood stream. Where there is resistance to adrenaline, intravenous administration of aminophylline is the drug of choice: 0.25-0.5 g. in 10-20 ml. injected slowly into a vein, taking about 10-15 minutes over the injection, demonstrate dramatic results. Aminophylline suppository of 0.5 g. is used occasionally which avoids the need for an injection.

Of late corticosteroid preparations are life-saving drugs in the treatment of severe status asthmaticus found resistant to the above drugs. A large dose of A.C.T.H. by I.V. drip; or cortisone or prednisone by mouth in a dose equivalent to about 200-300 mg. on the

(Contd. on page 118)