

Asthma

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By E. H. Williams, M.B. (continued from 19 January issue)

My interest was first aroused in this subject by numerous cases of infantile eczema, these infants in many cases subsequently developing asthma as they reached the age of three or upwards. If in my remarks I may appear to stray somewhat from the subject laid down for discussion, namely, asthma, it is because the whole subject of allergy and anaphylaxis is peculiarly well demonstrated in children; and, as we know, children are excellent subjects in which to study processes. Asthma, therefore, is inseparable very often from eczema, urticaria, food allergy, and protein susceptibility generally.

We know that foreign proteins to which patients may be sensitised are various, but can be grouped in four classes—foods, pollens, animal emanations, and bacteria; and though I suggested the exclusion of the last-named, I would retain those cases with an associated secondary bronchitis in which a specific anti-bacterial vaccine should be used in addition to the pollen vaccine or peptone.

In infants the offending substance is practically always a food, and that a milk protein. Even breast-fed infants may be sensitised by a protein derived by the mother's food. In children, from three to twelve, foods may still be the chief factor, but pollens, animal dusts, and bacteria become gradually more important.

I have observed the following manifestations in children:—Eczema of the infant replaced by asthma in childhood, the asthmatic attacks characterised by bronchial constriction as seen in the anaphylactic guinea-pig; acute gastro-enteritis from food protein similar to that observed in experimental anaphylactic rabbits; cases of acute collapse and threatened death in some susceptible children after their first egg; cases of such acute bronchial spasm that laryngeal obstruction has been suspected.

I should like to refer to the so-called ritual of skin testing. A writer in the *British Medical Journal* rather unkindly refers to the ceremony of skin-testing as having a profound effect upon a patient's mind, and to this alone may perhaps be attributed any success that has attended the inquiry into

the specific protein. While I have confined my treatment almost entirely to the non-specific peptonic method, I have found it extremely valuable very often to do a series of skin tests first. I have a fairly comprehensive list of powdered proteins which I procured in America and which I saw used in *Chandler Walker's* laboratory.

Here is a case which illustrates the value of these tests: A boy of nine was under my care in the Dunedin Hospital for eczema and asthma, both of long standing. He improved under peptone injections, but was not satisfactory. I did a series of tests and found a very positive reaction for egg white—this we already knew—but also for potato and for horse protein. We therefore cut out these foods and removed all horsehair from his bed, with the result that he was discharged free from asthma and eczema.

PEPTONE TREATMENT.—In giving peptone I have endeavoured from the beginning to avoid the mistake made by *Auld*, I think, in his earlier cases of giving too large an initial dose, say 2 to 3 grains, and so precipitating an alarming attack of asthma. I have therefore begun with one-thirtieth to one-twentieth of a grain and doubled the dose every four or five days until two to three grains has been reached. This dose may be repeated weekly. In this way I have had only mild local reactions, and have certainly had some gratifying results. At the same time I am anxious to hear of the experience of others with perhaps superior methods of dosage. I have used the subcutaneous route throughout. The Medical School laboratory put up the peptone in 1c.c. phials of strengths of half, one, two and a-half, and five grains per drachm. *Auld* used *Witte's* peptone originally, but has lately advised a mixture of three parts *Armour's* peptone siccum and one part of *Witte's*. He has done this because the former contains less proteoses and is less toxic. It may be only a coincidence, but I have fancied I have got better results from *Witte's* alone. I will give you some points in cases that have come my way. My first experience of the subject was about seven years ago in an eczematous baby for whom I ordered

small doses of egg albumin, about half a drachm, to see what would happen. Such violent swelling of lips and tongue occurred at once that the matron of the home was very unwilling to repeat the experiment. This child subsequently developed asthma at the age of three.

The alarming effects of egg are well known. Here is a case: I was called urgently to an infant for whom albumin water had been ordered for gastro-enteritis. The child was collapsed and death-like in a few minutes after taking the albumin. On a previous occasion the same thing had caused profuse urticaria.

To link this case up with our subject I give another case: A boy of three whom I had attended for acute eczema when eight months old, and who had since had violent retching whenever given an egg, was admitted to hospital with dyspnoea cyanosis and a chest full of moist sounds—a marked bronchiolitis. He had been wheezy off and on for some months, but this was his first bad attack of asthma. He responded at once to atropin.

Two other cases were admitted within a few weeks. In both laryngeal diphtheria was suspected, and in one tracheotomy was performed. I saw the latter after operation and found the same condition of bronchiolitis, and the tracheotomy had given very little relief. (Both of these cases responded to atropin.) The parents of this case definitely connected the attack with the eating of a small quantity of egg. Just as a damaged alimentary mucous membrane may render an infant with gastro-enteritis liable to food proteins entering the circulation in large quantities, so a damaged nasal or bronchial mucous membrane is often the starting-point of asthmatic attacks. This may explain the connection between an attack of pertussis or pneumonia and a subsequent asthma.

Here is a case showing this and combining skin, alimentary, and pulmonary signs: Girl three and a-half, eczema till fourteen months, pneumonia, then attacks of bronchitis every few weeks, with choking, wheezing, vomiting, pain in stomach. Another: Boy of nine, attacks of bronchitis and asthma for some years, generally beginning with sickness and vomiting; attacks date from pertussis

at two years; patch of eczema on lower lip every winter; in good health since peptone injections.

Girl of six, given whole milk at five months (*c.f.*, whole milk and flood of protein); eczema at eight months, pertussis at sixteen months, followed by attacks of bronchial catarrh and wheezing. At eighteen months an egg caused urticaria and collapse; even icing off a cake increased eczema markedly. When five years old asthma occurred in spring and summer. Like many other cases, this child improved physically and gained weight as result of peptone treatment, and her asthma had practically disappeared when I last heard. Her skin tests were positive to egg, Timothy, and rye—the spring pollens.

The next case was the first one I treated with peptone, and the result was so striking that my interest was stimulated at the outset. A girl of two and a-half, eczema at two months, at eleven months pneumonia, followed by asthmatic attacks each winter, and during which she had to sit up in bed. Eczema and asthma in the mother. Peptone completely cured her, and now, three years later, she is quite free from asthma or any pulmonary disability.

A suggestion of neurosis can hardly be read into any of these cases, much as it may be suspected in the case of adults.

As *Dr. Eardly Fenwick* will speak upon the subject of asthma as seen in older subjects, I will not refer to adults except in two cases.

One was a girl with the curious antipathy to cats and horses—to be near either meant streaming eyes and sneezing. Skin tests with ten proteins gave a double plus reaction to cat hair and horse protein only.

The other, a hay asthmatic who was unable to be near flowers or grasses any spring. She gave a double plus to Timothy and rye. She began to experience relief after her fourth peptone injection. I followed the peptone series with the prescribed doses of *Mulford's* pollen vaccine (spring), and she was at once able to garden and smell flowers without inconvenience for the first time in six years. She was almost as well the following summer.