PRACTICAL ASPECTS OF ALLERGY IN CHILDREN*

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IT IS 60 years since Von Pirquet used the word ' allergy ' to describe an altered reaction, which some patients manifest upon a contact with a foreign substance. Since then a great deal of knowledge has accumulated about the allergic diseases, including the self-immunizing diseases.

It is known that certain persons are born allergic, and this is very apparent in children. Such children develop asthma, eczema, urticaria, nasal catarrh, vomiting and diarrhoea when in contact with certain foods, animals, dusts, pollens or drugs.

The shock organ means the organ in which allergic reaction takes place—in the case of asthma the shock organs are the bronchi. During the allergic reaction, the allergen comes in contact with the antibody in the shock organ, and the following chemical substances are liberated: histamine, acetylcholine, 5-hydroxytryptamine, and the slow reacting substance. These substances act upon the shock organ causing symptoms like asthma, rhinitis, urticaria, vomiting and diarrhoea.

Statistics show that heredity plays an important role in allergic diseases. However, there is not enough evidence to demonstrate a definite Mendelian mechanism of transmission (Parrot and Sayag, 1962). There is no age limit for developing allergic diseases. It is known that sensitization to inhalants or foods does not take place *in utero*. The ' reagins ' mean the skin sensitizing antibodies, and they occur in the sera of allergic patients. The reagins belong to the 19 s, gamma globulins, and they do not pass the placental barrier (Stanworth, 1963).

The allergic baby inherits the tendency to become sensitized.

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The diagnosis of allergic diseases in infancy and in childhood

History taking. Great patience should be taken to obtain as much relevant information as possible. Parents, relatives and the children themselves are questioned about methods of feeding, administration of medicines, vitamin preparations and ' tonics '. Enquiries should be made about pets, house conditions, bedding, and school conditions. Special attention should be paid to play grounds such as: attic rooms, gardens, parks, barns and waste-sites. Spending of the week-ends may give a clue; visiting a friend who might keep some animals, outdoor camping, helping on a farm, visiting flower or rabbit shows, or eating a favourite food for Sunday lunch.

Notice should be taken of the type of soap, dusting powders and disinfectants. Such interviews take a long time and the knowledge of local housing conditions, play grounds and the habits of people is of great help.

Allergy tests. Skin, inhalation, conjunctival and passive transfer tests are used in diagnosing of allergic diseases. Blood counts and nasal smears for eosinophils are the additional tests. The chest x-ray is usually clear, and this should be emphasized to the parents. Of the skin tests, the modified prick test (Milner, personal communication) is best suited in infants and children. It introduces a small amount of allergen and the danger of reaction is minimized.

Passive transfer test (Prausnitz-Küstner reaction) is used in very young and ill infants who may react violently to direct skin testing. It is a very useful test in detecting milk antibodies in infants allergic to milk.

The nervous factors in allergic diseases

It is accepted that allergic diseases are aggravated by nervous factors. Psychiatrists claim that they can get an asthmatic child better in a hospital without any therapy. This is called parentectomy—removal of the child from the anxious parents. The allergists attribute such improvement to the removal of the child from allergic factors: house dust, pets, feathers, tobacco smoke and foods. The even temperature of a hospital ward is also important.

The treatment of allergic diseases in children

Recognition of allergic factors and their removal should be the aim of treatment (Britton, personal communication). Education of the parents and children on how to avoid the allergens takes a long time. Efforts should be made to explain to the parents and the children what the allergy means. Printed instructions like egg-free, milk-free diets and how to avoid house dust are of great help to the parents. If the parents know what their child is allergic to, they can do something positive about it. By avoiding the allergens the

child will get less attacks of asthma, less nasal catarrh and less skin rashes.

Desensitization. There is no age limit to this method of treatment (Milner, personal communication). It is advisable to postpone the desensitization till the child attains the age of natural immunity against common respiratory infections. It is impossible to avoid pollens completely and desensitization can be effective treatment of pollinosis. The oil adjuvants have been in use for over ten years and they help to cut down on the number of injections.

The drug therapy of allergic diseases in children

Continuous steroid therapy, even in minimal doses, should be avoided in children (Britton, personal communication). Sympathomimetic and antihistamine drugs still remain the drugs of choice in treatment of allergic diseases. They have no effect on gastro-intestinal allergy. Ephedrine is a stable drug and it can be combined with the elixirs of the various antihistamines according to age of the baby or child (Bendkowski, 1956). The child should be encouraged to drink as much as possible to prevent the drying effects of these drugs.

Hay fever can be a serious handicap to a child taking examinations in summertime. Ephedrine given together with an antihistamine will prevent the drowziness caused by the antihistamines. Antihistamine eye drops, like diphenhydramine (benadryl eye drops) are of great help in keeping the eyes clear from congestion. Tripolidine (pro-actidil) might be an effective antihistamine in solar erythema and in skin conditions caused by photosensitivity (Smith, personal communication).

Milk allergy. This can cause gastro-intestinal symptoms, asthma and skin rashes. The following milk components are recognized as being allergenic: casein, alpha, -beta lactalbumin, and bovine serum albumin. Usually there is a sensitivity to all the above components of milk in various degree. A milk-free diet is the only treatment of milk allergy.

Penicillin allergy. 6—aminopenicillanic acid is the nucleus of all the penicillin preparations. All types of penicillins should be avoided once the penicillin allergy is diagnosed. Penicillin reactions may persist for a few months and are propogated by penicillin present in the milk.

Insect bites. The stings of hymenoptera, like bees and wasps, may cause severe allergic reactions including anaphylactic shock. Desensitization against wasp and bee stings offers an effective protection to a sensitive child (Shaffer, 1961). Animal fleas are often the cause of persistent urticaria in children (Shire, personal communication).

Treatment of the pets and furniture with D.D.T. powder will eliminate the cause of urticaria.

Vaccination and immunization of allergic children

Vaccination against smallpox in children suffering from eczema is contraindicated. Triple antigen sometimes causes reactions. Such reactions are caused by the pertussis component and are more of a toxic than allergic nature. There is no contraindication to the use of the triple antigen in asthmatic children. Indeed, the asthmatic children should be immunized with the triple antigen. It is known that whooping cough can start or aggravate the asthma. A.T.S. injections can produce severe reactions in horse-sensitive children.

Respiratory viruses. Common cold viruses, adenoviruses, respiratory syncytial viruses and influenza virus are frequent causes of respiratory infections which aggravate asthma in children. There are no effective vaccines against these conditions with an exception of influenza. Influenzal infections are not considered important diseases in childhood, and immunization against influenza is not recommended in children (Himmelweit, personal communication).

Conclusions

History-taking is most important in diagnosing allergic diseases in children. Knowledge of the local sources of allergens and the habits of the patients is of great help.

Of the skin tests, the modified prick test is the most useful and least dangerous.

Education of the children and their parents on how to avoid the allergens is the ideal treatment of allergic diseases in children.

Desensitization is indicated in severe hay-fever asthma (pollinosis) when the complaint interferes with the child's school progress.

Ephedrine combined with anthistamines offers the best symptomatic relief in respiratory allergy.

Steroids should be avoided if possible.

Antibiotics should be used only when there is a clinical indication.

Care should be taken with vaccination and immunization of allergic children.

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