Round Table Discussion

PEDIATRIC ALLERGY

C. COLLINS-WILLIAMS, M.D., Chairman, Toronto;
BRET RATNER, M.D., New York City
HOWARD J. MORRISON, M.D., Savannah, Ga., and
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SPECIFIC DIAGNOSTIC PRACTICE

Chairman Collins-Williams: The specific diagnosis of the child with respiratory allergy comprises the following: (1) general pediatric care; (2) careful allergic history; (3) complete physical examination; (4) indicated laboratory procedures including nasal smears; (5) skin testing.

Skin testing is necessary in order to help determine the specific etiologic allergens. The allergens tested with should include the common foods and the common inhalants, pollens and molds in the environment.

EOSINOPHILES AND EOSINOPHILIA

Eosinophilia occurs in a great many conditions other than allergy and these must be taken into account in interpreting differential blood counts.

The nasal smear is a useful laboratory test in the diagnosis of nasal allergy. Eosinophiles may temporarily appear in considerable numbers in the nasal smear of the nonallergic child during recovery from a respiratory infection, but otherwise a predominance of eosinophiles in the nasal smear is diagnostic of nasal allergy.

OFFICE TREATMENT OF RESPIRATORY ALLERGY

The office treatment of a child with respiratory allergy includes the following: (1) general pediatric care; (2) symptomatic relief of allergic symptoms; (3) removal of incriminated foods from the diet; (4) as complete an elimination of environmental allergens as possible; (5) specific desensitization.

SPECIFIC DESENSITIZATION

Dr. Ratner: The method of specific desensitization which we use in practice is as follows:

The treatment extract consists of a 1:5,000 dilution of each of the inhalants, pollens and molds with which the patient gave a positive reaction. Each week the patient receives one injection from a tuberculin syringe containing 0.15 cc. of this treatment extract, 0.15 cc. of a 1:20 dilution of mixed bacterial vaccine, 0.15 cc. of a 1:20 dilution of pertussis vaccine, and 2 minims of adrenaline. Injections are given weekly until there is definite improvement and then are given every 2, then 3 and finally every 4 weeks. However, each case must be individualized.

HAY FEVER IN CHILDREN

Pollen allergy is much more common in children than is generally realized and too often these children are treated for repeated "colds." Diagnosis can be established by correlation of symptoms with the pollen season, examination of nasal smears and diagnostic skin testing. Because of the usual low level of pollen skin sensitivity in children, the intracutaneous test is usually necessary, and tests should be done with all the common pollens in the environment. Specific desensitization therapy based on the history and skin tests is indicated in the manner previously outlined.

DERMAL-RESPIRATORY SYNDROME

Chairman Collins-Williams: The association of dermal allergy with respiratory allergy is so common that it may be referred to as the dermal-respiratory syndrome. In one large series of allergic children which we have studied 35% suffered from both dermal and respiratory allergy while under

observation, and of those children who suffered from eczema, 59% eventually suffered from respiratory allergy. The practical application of this is that any child who has frequent severe "colds" and who has a history of eczema should be regarded as a potential case of respiratory allergy. If investigation confirms this, specific treatment should be started before severe respiratory allergy such as asthma develops.

**Salient Diagnosis Problems in Asthma**

*Dr. Ratner:* There are many causes of wheezing other than asthma and to make a correct diagnosis of asthma we must use all available means at our disposal including a careful history revealing especially repeated episodes of wheezing, precipitating factors, seasonal incidence and associated allergies; physical examination during the attack revealing wheezing accompanied by sibilant and sonorous rales; nasal smears; and fluoroscopy and roentgenography. Protein skin tests are then used to confirm specific etiologic agents. One must be especially on guard against misdiagnosing other correctable conditions such as foreign body.

**Treatment of the Asthmatic Attack**

The most serious errors in the management of the asthmatic attack are overmedication and an unfortunate choice of drugs. Subcutaneous adrenaline, 2 or 3 minims of 1:1,000 dilution, is the drug of choice. Syrup of ipecac to produce vomiting is indicated if there is not adequate response to adrenaline. Other treatment measures include propping up the patient, removal to another environment, circulation of air, steam, a cheerful attitude on the part of the attendants, intravenous fluids, rectal sedation such as bromide, phenobarbital or ether, oral sedation such as triple bromide, phenobarbital or seconal, and oxygen. Morphine and demerol should never be used.

*Dr. Joseph H. Davis, Palo Alto, Calif.:* In starting an elimination diet do you eliminate any skin reactors other than those indicated by history?

*Chairman Collins-Williams:* Any food incriminated either by history or by a positive skin test should be eliminated from the child's diet. If you start eliminating important foods such as egg, wheat and milk without valid reason you are going to deprive the child of foods which he needs for growth, and at the same time not help to relieve his allergic symptoms. However, as soon as the allergic symptoms are controlled, the forbidden foods are added one at a time to see if they can be tolerated.

*Dr. Ratner:* One of the most dangerous things is to deprive a child of a balanced diet. For that reason we like to use a denatured diet consisting of thoroughly cooked foods such as evaporated milk, well cooked cereals, boiled vegetables, stewed fruits, boiled meats and hard-boiled eggs. We believe that the boiling process greatly reduces the antigenicity of protein. Later we add unheated foods which the patient is not sensitive to, and later still small amounts of the offending allergens in nonheated form to see if they can be tolerated.

*Dr. R. M. Matthews, Peterborough, Ont.:* In connection with eosinophilia, is trichinella extract reliable for diagnosis?

*Chairman Collins-Williams:* Trichinella extract is reliable for past or present infection, but it does not give definite information about the present condition. For this reason trichinella extract has restricted value in diagnosis.

*Dr. F. A. Olivieri, Toronto:* You mentioned many conditions other than allergic rhinitis and asthma that caused eosinophilia. Do any of these conditions give rise to a local eosinophilia in the nasal secretion and other secretions?

*Chairman Collins-Williams:* As far as I know only respiratory allergy produces nasal eosinophilia with one exception—there is a transient nasal eosinophilia during the healing stage of an acute respiratory infection.

*Dr. Ratner:* I do not think that this problem has been studied well enough. It might be interesting to see if a case of trichinosis has a nasal eosinophilia. I do not think that anyone has done this.

*Dr. Martin J. Harris, Louisville, Ky.:* Are dilutions stronger than 1:5,000 ever used for desensitization therapy?

*Dr. Ratner:* Very few allergists use such low dilutions. Most use much stronger solutions.

*Dr. J. S. Hunt, Charlotte, N.C.:* Is the dosage of 1:5,000 pollen dilution decreased during the pollen season?

*Chairman Collins-Williams:* If you are using that dosage you ordinarily do not need to decrease
the dosage during the pollen season. However, if the child is having many symptoms you would be wise to cut it in half.

Dr. Davis: Is there any maximum number of pollens which you give in your treatment mixture? Cannot one pollen serve to desensitize for a group of pollens?

Dr. Ratner: Although some people feel that one pollen may be used to desensitize against a whole group of pollens, we feel that it is better to skin test the child with all the common pollens in the environment, and then to desensitize with all of them which give positive reactions. This is worth while as the treatment results are better.

Dr. C. L. Steinberg, St. Paul, Minn.: What is the longest interval used in perennial therapy?

Chairman Collins-Williams: I like to start by giving an injection every week. As soon as the patient is doing well these may be given 2 weeks apart, and finally as much as 4 weeks apart. This usually takes a long time, well over a year.

Dr. W. R. Whitney, Evanston, Ill.: You mentioned that you always give adrenaline in the same syringe as your desensitizing solutions. As all injections of diphtheria-tetanus and pertussis alum precipitated toxoid are given intramuscularly, would the administration of 1 to 2 minims of adrenaline delay the absorption?

Dr. John J. Miller, San Francisco, Calif.: I don’t know whether adrenaline would delay absorption. Absorption is slow anyway.

Dr. Ratner: So, in that instance the adrenaline would serve as an antiallergic addition. Adrenaline definitely delays absorption for several hours.

Dr. Miller: Yes.

Dr. Thurman Shuller, McAlester, Okla.: Is there any place for histamine injection in the desensitization program?

Dr. Ratner: No.

Dr. Park S. Bradshaw, Muskegon, Mich.: For dust desensitization do you recommend an autogenous extract or a product like Endo housedust? What dosage do you give?

Dr. Ratner: For dust desensitization we recommend using a commercial preparation of housedust (Arlington Chemical Co.) which is mixed with the other indicated inhalants, pollens and molds, each in a 1 in 5,000 dilution.

I particularly recommend that the offending articles such as mattresses be covered with an impervious material like Egyptian cotton or Pima cotton or plastic, and that every attempt be made to reduce the dust content of the environment. This is sometimes a formidable job. Furthermore, visits to the attic, cellar, barn, etc., should be reduced and these places cleaned up as much as possible. Then desensitization procedures can be expected to be much more effective. The most brilliant results in all of allergy are obtained by the elimination of an offending substance.

Dr. Irving Weinstock, Brooklyn, N.Y.: In practice we find that allergic children are more susceptible to upper respiratory infections than normal children. Preventive injections of dust, vaccine, etc., are often not too successful. Why is this so and how do you treat this type of child?

Chairman Collins-Williams: It is true that allergic children are more susceptible to upper respiratory infections, but by means of the nasal smear it can be demonstrated that many of these so-called infections are in reality allergic manifestations. These cases should be handled as follows: (1) The nasal smear should be used routinely to determine which are infective episodes and which are allergic episodes. (2) Infective episodes should be treated early with appropriate chemotherapy, especially in the case of the asthmatic child whose acute asthmatic attacks are often precipitated by respiratory infections. (3) Allergic episodes should be treated with proper antiallergic symptomatic therapy such as an aminophylline-epinephrine-phenobarbital mixture. (4) The child should be skin-tested with the common inhalants, pollens and molds in his environment. (5) The child should be desensitized with those environmental allergens which give positive skin reactions and with mixed bacterial vaccine and the same allergens should be removed from the child’s environment as much as possible. If this routine is always followed, the child will almost always show considerable improvement.

Dr. Alexander Kahn, Indianapolis: Are respiratory vaccines really useful and if so, what preparations are recommended in the treatment of the child with repeated respiratory infections?

Dr. Ratner: The question of the value of vaccine therapy is one that will be debated as long as we practice medicine. The truth is that we do not know how valuable they are. Most of us use stock
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vaccines and think that they do some good. Autogenous vaccines have a limited value and the additional trouble and expense involved in their manufacture probably does not justify their use.

Dr. Howard Lange, Belleville, Ill.: What is the dosage and frequency of injection for bacterial vaccine?

Chairman Collins-Williams: I usually include 0.15 cc. of a 1 in 20 dilution of mixed bacterial vaccine in the same syringe with the desensitizing treatment extract for any child with respiratory allergy. These injections are given weekly until there is definite improvement in symptoms and then every 2 or 3 or 4 weeks as required. Many people use larger doses and this is quite justified provided one does not produce reactions.

Dr. Marcus E. Farrell, Clarksburg, W.Va.: What relationship is there between nasal and sinus infections and the onset of allergic symptoms?

Chairman Collins-Williams: Practically all allergic manifestations are made worse by bacterial infections and for that reason there is a close relationship between allergic manifestations on the one hand, and infections in the nose and paranasal sinuses on the other. For this reason it is important to clear up nasal and sinus infections, especially in the asthmatic patient.

Dr. Farrell: Is it practical to use sulfa prophylaxis in such cases?

Dr. Ratner: I think that this whole question of nasal and sinus infection is very important. Rather than using sulfa prophylaxis I prefer to evaluate each acute episode by means of the nasal smear. If the nasal smear is predominately neutrophiles, I begin oral antibiotic therapy immediately and thereby produce a recession of the infectious process which might lead to a nonspecific allergic episode. I prefer the use of oral penicillin or terramycin at these times, since I have seen a great deal of allergy to sulfa drugs.

Dr. H. E. Edwards, Toronto: Would you discuss the anemnestic reaction?

Dr. Ratner: The effect is produced by the development of various antibodies and the original work on the anemnestic reaction was with animals who were injected with 5 or 6 antigens. After an incubation period a nonspecific rise in antibodies of all the antigens could be elicited by an injection of any of the original antigens injected. So the anemnestic reaction may be nonspecific in action. If you take milk, feathers and eggs, and produce antibodies to each and give any one of those antigens at some later time there will be a small rise in antibody titer to all of them, but the greatest rise to the antigen you inject.

Dr. Jacob Rosenblum, Brooklyn, N.Y.: Would you say a word about the Gay treatment?

Dr. Ratner: He is practicing a good type of psychotherapy. This is not enough in allergy if you are very much interested in the basic principles of medical practice.

Question: What is the incidence in an average practice of being able to cure a case of asthma by removal of the cat or dog or some other single item? I have rarely been able to obtain good results by doing that.

Chairman Collins-Williams: In my experience it is very rare to get a good result by doing that. Nearly all children with asthma are sensitive to many things. However, by making the child's room "dust-free" you can often help him a great deal.

Dr. Ratner: I would like to emphasize what has been said about control of the environment. We have had rather poor results with desensitization against dust and we think that best results stem from control of the environment. We just had a case of raw silk sensitivity and when we removed every bit of old silk from the environment we began to get a good result. Control of the environment produces the best results in the long run. It is the completeness with which the child is tested and the completeness with which these things are eliminated which spell success.

Dr. Davis: There has been some discussion in the literature that dog hair is not nearly as allergenic as cat hair and not as important to eliminate in the environment as other animals. Please discuss this.

Chairman Collins-Williams: This is going to depend a little on the history of the child. For example, if the child has seasonal asthma and has a dog to which he is very attached and does not seem to have any symptoms due to the dog, I think that it is all right for him to keep the dog. On the other hand, if he has severe asthma the year around, I think the dog should be eliminated from the environment.

Dr. Martin J. Harris, Louisville, Ky.: Do you adhere to the principle of prophylactic skin testing and treatment in children who have few symptoms but repeated growth of adenoid tissue?
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Dr. Ratner: We do not do skin testing for this condition alone, but if an allergic child has residual or compensatory enlargement of the pharyngeal lymphoid tissue we sometimes have a reliable nose and throat specialist treat the pharynx with radium. It has value in certain cases.

Dr. Shuller: Where do antihistaminics fit into the management of hay fever and asthma in children?

Dr. Ratner: Antihistamines have provoked quite a sensation in medical practice in the last few years. They were presented to the lay public first and then to the doctors. They proved to be an interesting group of drugs that have antispasmodic properties and a tendency to dry the secretions. They are mildly palliative in allergy. Perhaps in the next few years we will not use them quite so much. Antihistamines do not get at the core of hay fever nor at the core of asthma. I might say here that at the present time everything is hitting allergy practice. There is a terrific swing toward ACTH and cortisone. Psychosomatic medicine has made inroads in the practice of allergy as well as the antihistamines. Some of us feel that after these things are tried for a number of years those people who have trouble will have more trouble and eventually will seek the advice of an allergist who is soundly concerned with the antigen antibody mechanism. We still think that is the best approach to allergy and we like to think of allergy practice as the rehabilitation of the allergic cripple. Environments have to be corrected, certain foods have to be modified, certain immunities have to be built up and certain constitutional factors recognized. It is no different than our whole program of preventive pediatrics. With such care of the allergic child the majority of children who are willing to stay for a year or 2 are definitely rehabilitated.

Dr. H. Lander, Chicago: Have you had any experience with Dust-Seal?

Dr. Ratner: We have had some experience with it and we think it is begging the question of allergy. It is expensive and is not nearly as effective as ridding the environment of the dust-producing substances like cotton linters, old feathers, etc. It seems to me that we should try to eliminate these things rather than try to weigh the dust down with oil.

Dr. H. P. Fine, Perth Amboy, N.J.: How does dampness aggravate hay fever or asthma?

Chairman Collins-Williams: There are 2 ways it may affect it. First of all if a patient goes into a damp place he may come in contact with allergens to which he is sensitive, particularly molds. Secondly, many patients who have either allergic or nonallergic respiratory disease are worse in damp places. I do not know the reason for this.

Dr. W. R. Britton, Montgomery, Ala.: Spasmodic croup usually occurs late at night during sudden changes of weather. Is this not a physical allergy?

Dr. Ratner: It may be infection and it might be physical

Dr. Howard J. Morrison, Savannah, Ga.: What is the average duration of the state of sensitivity to a particular food in infants and children as compared to adults?

Chairman Collins-Williams: I do not think that I can answer that fully. In general terms it is usual for an infant's food sensitivities to disappear during childhood though in an individual case the sensitivity may last into adult life.

Dr. Ratner: There may be instances when an individual is sensitive to sea foods, and if they are left out of the diet for one or more years they can be eaten without difficulty. Everytime an infant takes a protein food for the first time he goes through a stage of allergy. As he takes that food repeatedly he goes into a state of immunity and that is why we feed foods cautiously because we know that the infant can bypass the state of allergy and go into a state of immunity. What actually happens is that as one takes food regularly, one becomes immunized.

Dr. H. Lander, Chicago: I have been impressed by the number of asthmas I see at the tail end of the hay fever season. Many of these patients are not hay fever patients. Is there some explanation of this and is it a common finding?

Chairman Collins-Williams: Are these mold cases?

Dr. Lander: No.

Chairman Collins-Williams: I think the answer to this problem is that the cases have not been adequately tested to determine all their sensitivities. Or, it may be that these patients are just developing new sensitivities and do not yet give positive skin tests.

Dr. Edwards: We have noted this phenomenon in Toronto this year and in going back over the cases we have been treating, we wondered whether it would be a good idea to include ragweed and grasses in the treatment extracts of these patients.
Dr. George H. Garrison, Oklahoma City: Would you discuss the indication and value of irradiation therapy over the chest in asthmatic individuals?

Dr. Ratner: I do not know anything about it, but I would be afraid to use it.

Dr. David R. Davis, Emporia, Kans.: Is ragweed dermatitis fairly common in children?

Dr. Ratner: Whether it is common or not it does actually occur and one must be alerted to it. If you get a positive skin test to a pollen and the dermatitis becomes aggravated during the pollen season, the pollen may be the cause of the dermatitis.

Dr. Charles J. Eldridge, Kansas City, Mo.: Will you discuss the dietary treatment of infantile eczema before skin tests can be made?

Dr. Ratner: For many years we have used a denatured diet consisting of boiled milk, boiled eggs and thoroughly cooked foods of all kinds.

Dr. Philip J. Panitz, Akron, Ohio: How often does breast milk produce eczema or other allergies?

Dr. Ratner: Is this eczema of the face to which you are referring?

Dr. Philip J. Panitz, Akron, Ohio: Yes.

Dr. Ratner: That may not be an eczema, but may be due to contact dermatitis with the mother’s breast. I disagree with Dr. Collins-Williams’ attitude that a breast-fed baby with eczema should be left on the breast. I don’t believe that breast milk is as reliable a food as he seems to think. When it is good breast milk it is the best food obtainable, but when it is bad breast milk it is a poor food.

Dr. W. Eugene Keiter, Kinston, N.C.: Is the pulse rate in food sensitivity testing an indicator of sensitivity?

Dr. Ratner: Dr. Coca claims that the pulse rate is increased when you have food intolerance, but we have been unable to try it out in children because their pulse rate is always shooting high.

Dr. George H. Garrison, Oklahoma City: Of what value are repeated white blood counts (every 15 minutes) after feeding a suspected food?

Dr. Ratner: That is the leucopenic index and has been abandoned.

Dr. M. B. Lou, Greenfield, Mass.: What proportion of your allergic children do you treat for hypothyroidism?

Dr. Ratner: Just those that show evidence of hypothyroidism.

Dr. M. C. Carlisle, Jr., Dallas, Texas: Is ether per rectum of any value in status asthmaticus?

Dr. Ratner: The answer is yes. It has great value and you give about 2 or 3 teaspoonfuls mixed with 2 ounces of olive oil as a retention enema. It does have a satisfactory effect in some cases and in others it does not.

Dr. Nathan Goluboff, Saskatoon, Sask.: Do you find isuprel® or other types of inhalers of much value? Have they any dangers in repeated use in asthma for symptomatic relief?

Chairman Collins-Williams: The inhalers are of use if used properly. The difficulty is that they are apt to be used too often particularly by the older child who uses an inhaler himself. There is therefore a great danger of overdosage, whereas if you prescribe some type of oral medication the mother is more apt to keep to the dosage prescribed.

Dr. Ratner: I think, too, that the use of inhalers has a tendency to produce an addiction. With benzedrine inhalers those people who once begin to use them often keep it up. It gives a lift and for that reason we think that a remedy which is so easily available results in psychologic dependence.

Dr. Joseph H. Davis, Palo Alto, Calif.: Is intravenous epinephrine liable to be lethal?

Dr. Ratner: The use of intravenous adrenaline perhaps might be lethal or dangerous. I might say this, large doses of adrenaline are ill advised. If you give 1 or 2 minims you are getting the best physiologic reaction. But, if you give more than that it causes vascular reactions with a rapid pulse, pounding headache, syncope and further constriction of the bronchioles. The patient has a reaction which is worse than the asthma for which he was treated.

Dr. Arthur J. Cramer, Buffalo, N.Y.: What value, if any, for the treatment of asthma are the following: pyromen or diethylene sulphonate?

Dr. Ratner: Pyromen is thought to act like cortisone and some men are trying it out. Diethylene sulphonate is an absolutely spurious medication. It has been proved that it has no value whatsoever and it is equivalent to triple distilled water.

Dr. Alexander Kahn, Indianapolis: Is adrenaline in oil a useful preparation in treating acute asthmatic attacks? What dosage do you recommend?
Dr. Ratner: Oil should never be used for the simple reason that you get an oleoma which may necessitate removal of a large tumor mass produced by the oil.

Chairman Collins-Williams: I do not use the oil for that reason and also because you cannot expect a better result with adrenaline in oil than with the same dosage of aqueous adrenaline. It is better to give 1 or 2 minims of adrenaline and repeat it, rather than \( \frac{1}{2} \) cc. of the oil which is the usual dose.

Dr. Philip L. Paull, Akron, Ohio: Do you recommend the use of a combination of oxygen and steam such as in the croupette for asthma?

Chairman Collins-Williams: I certainly do recommend the use of oxygen and steam as in the croupette for the severe asthmatic attack. However, there is one danger in the use of oxygen in the severe attack. After a prolonged attack of asthma the patient is suffering from respiratory acidosis due to carbon dioxide retention. The respiratory center, the main stimulus for breathing, may finally become poisoned by the carbon dioxide. The main stimulus for respiration then falls on the aortic body, which responds mostly to anoxia and very little to high levels of carbon dioxide. Therefore, the oxygen, by raising the oxygen content of the blood, may abolish the chief stimulus to respiration, and the patient may stop breathing. For this reason, when you put a severely ill asthmatic into oxygen you must watch him and take him out immediately if he stops breathing. This chain of events does not happen often, but is something which we must bear in mind.

Dr. Ratner: The reason we like to give steam along with the oxygen is that the asthmatic child has tremendous dehydration of the respiratory tract.

Dr. F. A. Olivieri, Toronto: Have you had any cases of asthma made worse with rectal seconal?

Chairman Collins-Williams: I have not had any cases, but large doses will make the child very much worse.

Dr. Ratner: That is an important question because that type of drug is the thing that might kill the child. Sedatives like seconal are fairly safe, but I think it is better judgment to use small doses of these—\( \frac{1}{4} \) grain of phenobarbital, \( \frac{1}{4} \) grain of seconal. Don't give a child a knockout blow. for the harder he breathes and the more fight he has in him, the better off he is.
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