

CLINICAL EXPERIENCE WITH OBJECTIVE DIAGNOSTIC TESTS IN CORN SENSITIVITY

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AT MY request Dr. Loveless sent the 3 starch puddings described in her paper* containing cornstarch, arrowroot and tapioca, but identified only with code numbers, A-1, F-1, and E-1, respectively, and also 1 of corn meal, to 5 patients presumed on the evidence given in the case reports below to be clinically sensitive to corn antigen. Each of these patients reacted on scratch test with corn meal extract with a wheal 15 mm. or greater transverse to the starch.

Each patient was instructed to eat one of the starch puddings at midmorning on successive days, or at longer intervals, after a breakfast consisting only of usual foods, and was warned against any unusual activity for several hours afterward. Symptoms or signs observed during the next several hours were to be noted and reported to me. Neither the patients nor I knew the contents of the respective puddings, except the obvious corn meal.

CASE 1.—J.R.L., 82 years old, an attorney, was first seen in St. Vincent's Infirmary in July, 1949, wearing an oxygen mask because of severe dyspnea. His son stated that he had had asthma for over 20 years, and chronic indigestion even longer. He knew that dust from livestock feed had formerly caused paroxysmal sneezing, but had had no exposure for years. The present attack of asthma had been severe and continuous for 3 months.

Physical examination revealed no evidence of circulatory impairment nor sinus infection. The only significant findings, except a rather poor nutritional state, were those typical of bronchial asthma. The response to 5 minims (0.3 ml.) of epinephrine 1-1000 was dramatic.

Scratch tests to all cereals were strongly positive. He had been eating corn and wheat daily. On a cereal-free diet he was able to leave the hospital on the third day. He has eaten no cereal and has had no dyspnea since.

He ate the 3 starch puddings without symptoms, but preferred not to try the corn meal.

He is now 83, has gained 25 pounds since July, 1949, practices his profession, and recently made a trip to Chicago alone.

CASE 2.—B.K., a medical student on whom experiments were reported in the International Correspondence Club of Allergy, ate all the 4 puddings. He reported: A-1 (cornstarch) no symptoms; E-1 (tapioca) and F-1 (arrowroot) followed immediately by mild nausea which he attributed to the physical properties of the puddings. The corn meal, however, caused the usual symptoms of "tingling, burning, and a thick feeling" in the mouth and throat almost immediately. That evening he had severe cramping in his abdomen, along with urticaria.

CASE 3.—C.A., 30 months old, known to be sensitive to corn and to cottonseed by inhalation and suspected by his mother of being sensitive to corn starch by ingestion, ate A-1 (cornstarch) at 9:00 A.M. By noon he was having some urticaria about the knees. At 9:00 P.M. the urticariae were general and asthma was noted. Before morning he had severe asthma and was taken to the hospital. The parents refused to try E-1 and F-1. This was the only severe asthma the boy had had since his original examination in January, 1949. Previously he had been hospitalized repeatedly because of it, and I think we may consider this episode a response to the corn starch. A scratch test with corn starch paste produced a definite but not an irregular wheal 3 mm. across with 15 mm. of erythema.

*Contained in this issue (p. 500).

CASE 4.—D.McK., 3 years old, with severe asthma and atopic dermatitis, showed only moderate to doubtful improvement for several months after avoiding house dust and excluding corn and wheat from his diet, having reacted by scratch test to all of these. An unusually severe attack of asthma with aggravation of the rash followed a known exposure to flour and corn meal in the kitchen. This suggested he was absorbing cereal antigens by inhalation. All home baking was stopped 4 month ago, and he has had very little trouble. He ate the 3 starch puddings without symptoms. On my advice the corn meal was not given.

CASE 5.—J.R., a 4-year-old asthmatic, was known to be sensitive to corn by ingestion when brought to me some 2 years ago. He too reacted with whealing to a scratch test with moist corn meal. He has eaten corn starch pudding, corn oil, and Karo on numerous trials without symptoms.

He had no symptoms from the few teaspoonsful of the 3 starch puddings which his mother could persuade him to take. He has eaten much greater quantities of starch in the past, however, without symptoms. Against my advice the mother tried to feed him the corn meal pudding and although he ate 2 teaspoonsful of it he had no ill effect. A few nights later, however, he was given canned green corn for dinner. That night he had severe asthma with vomiting, which persisted for 2 days.

CONCLUSIONS

These observations suggest:

1. That the clinical allergic reaction is quantitative as well as qualitative.
2. That corn starch does not contain enough antigen to affect most corn-sensitive patients when eaten in the usual quantities.
3. That corn starch does contain some corn antigen to which extremely sensitive individuals may react from ingestion.