AN ANALYSIS OF THIRTY CONSECUTIVE CASES OF ALLERGIC CONJUNCTIVITIS

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Review and History

The question of allergic conjunctivitis dates back to the year 1796, at which time Edward Jenner vaccinated for smallpox successfully. Many other workers have contributed to this subject. Among the more prominent ones are Magendie and Pasteur, and in recent years such workers as Wilmer and Woods. There is no need to go into a resumé of the etiology and contributions, as Hansel has made a very complete and adequate report of these observations[1].

The present series of cases consists of consecutive patients in which a diagnosis of allergic conjunctivitis was made. In addition, these cases have had an adequate allergic investigation. Approximately 90 per cent of these patients were seen by Dr. A. D. Ruedemann of the Department of Ophthalmology, and he has concurred in the diagnosis of an allergic conjunctivitis. A large number of these cases were referred to us by him for study from the point of view of allergy as a possible factor in their presenting problem. These patients were treated locally only in certain isolated instances, according to recommendations made by the Eye Department. In the majority of cases, all local medication was discontinued. Also, possible contact factors such as cosmetics, and exposure to various inhalants, for example, dust, feathers, etc., were eliminated.

Out of thirty cases, nine of these patients were in the third decade of life. It was interesting to observe that there was an equal distribution of cases in the first, second, fifth, sixth and seventh decades (three patients in each decade). (See fig. 1.)

SEASONAL EXACERBATION OF SYMPTOMS

Four of the thirty cases showed seasonal variations of their conjunctivitis, and two of this group also had perennial symptoms, but with definite seasonal exacerbations. One patient had trouble only during the summer months. The second patient had symptoms only during the fall of the year, especially during the ragweed season and had, in addition to his allergic conjunctivitis, a perennial and seasonal allergic rhinitis, migraine, food allergy and bronchial asthma. The seasonal symptoms were entirely controlled by ragweed therapy. His conjunctivitis was due to molds and inhalants most likely, as he gave very strong reactions to dust, orris root, and slight reactions to other of the common inhalants and strong, definite reactions to seven different molds to which he was tested. On a program of hyposensitization he showed a definite and steady improvement of his symptoms. He is not having any trouble with his eyes

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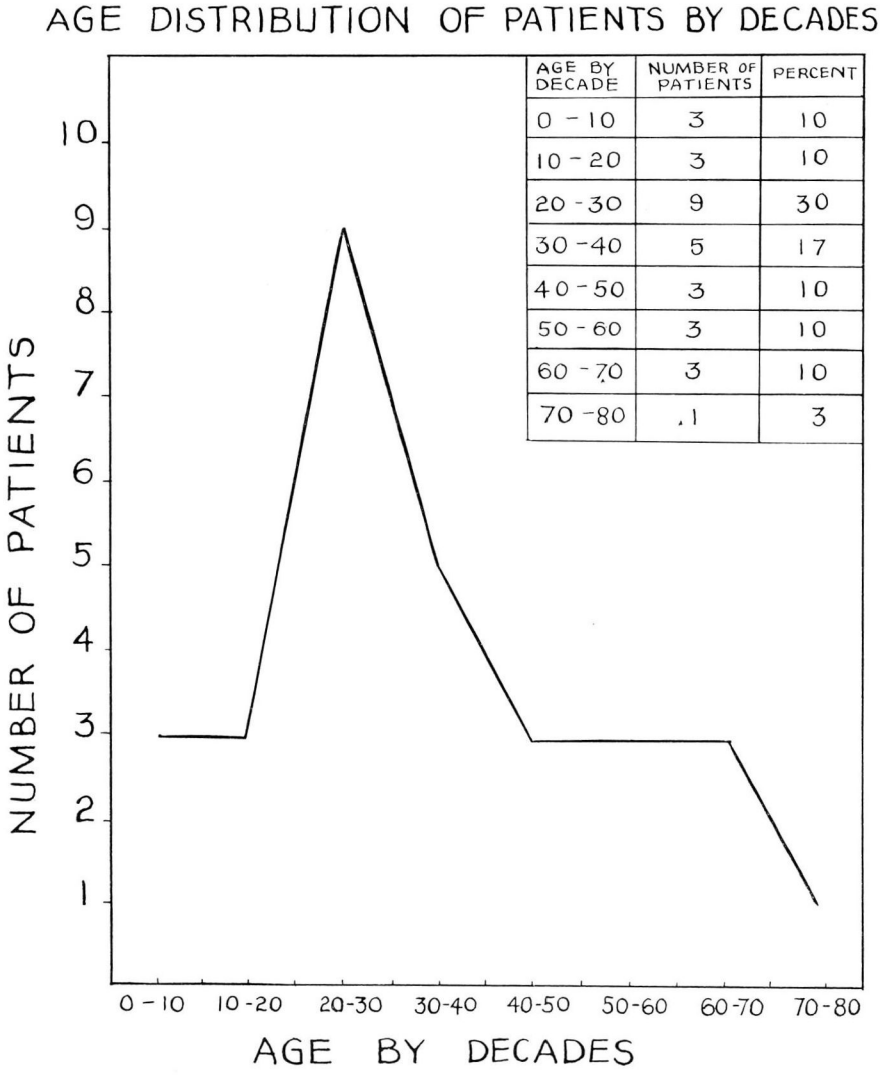

AGE BY DECADE	NUMBER OF PATIENTS	PERCENT
0 - 10	3	10
10 - 20	3	10
20 - 30	9	30
30 - 40	5	17
40 - 50	3	10
50 - 60	3	10
60 - 70	3	10
70 - 80	1	3

FIGURE 1: Age distribution of patients by decades.

at this time, although the air contains a moderate pollen count (150).

The second case is that of a student who had symptoms throughout the year, with a definite flare-up with his eyes during the summer months, especially during June and July. He too gave very strong reactions to a large number of the common inhalants and to a number of the molds. He gave positive scratch reactions to house dust and cat and dog hair, and positive scratch reactions to alternaria and monilia. He had a seasonal hay fever (fall) in addition to his allergic conjunctivitis. His symptoms were so severe at the time of his original studies that he had some difficulty in carrying on his school work. Since the onset of the ragweed sea-

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son he has not experienced any symptoms of hay fever. He received preseasonal ragweed hyposensitization and we attempted to desensitize him to the inhalants and molds to which he reacted. He reported that he has had excellent results with no symptoms during the past seven months.

Another patient (case No. 26) had a vernal conjunctivitis with characteristic cobblestone lesions which was entirely seasonal, in addition to an atopic dermatitis, perennial allergic rhinitis and chronic urticaria. Her first symptoms developed on May 1, 1938, and continued until September 1, 1938. The second attack started April, 1939, and was similar to the previous attack, but more severe. She had a marked photophobia, and found it necessary to use many different types of eye drops in order to gain any relief. This patient gave very strong reactions to the common inhalants and molds. She has had fair results on a program of hyposensitization and dietary restrictions, eliminating especially those foods to which she gave a strong reaction (two or three plus).

At one time during the program of treatment, after her eyes had improved, she started having a flare-up of symptoms after taking 0.5 cc. of an extract containing dust, orris root, mattress dust, tobacco smoke and ashes 1:1,000, silk 1:5,000 and a second extract containing a mixture of the molds 1:1,000 and oidiomycin 1:10,000. This was controlled to some extent by a reduction of the dosage of extract.

The fourth patient having a pure seasonal allergic conjunctivitis was a lad nine years of age who had had recurrent attacks of vernal catarrh

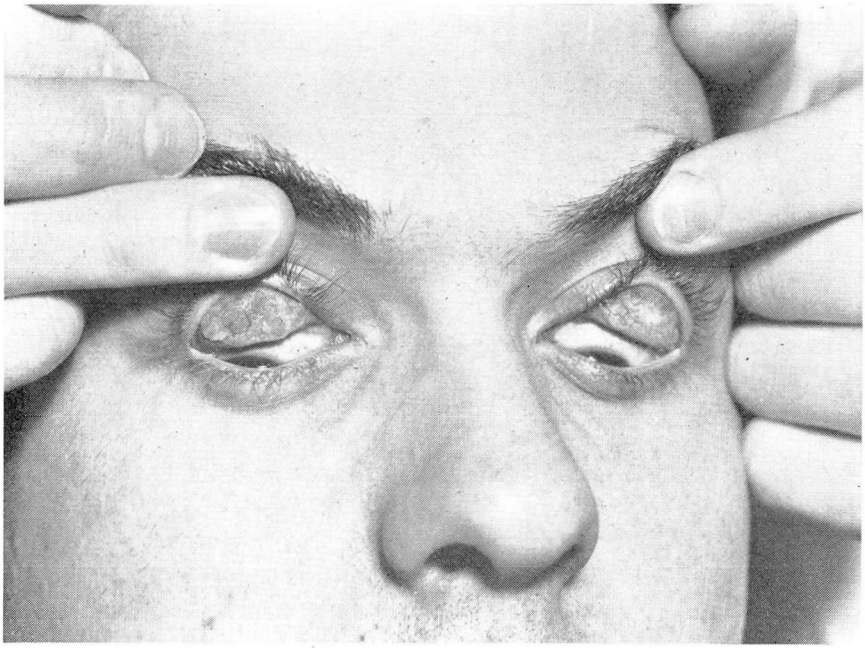

FIGURE 2: Typical cobblestone lesions seen in vernal catarrh.

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during the past four years, coming on each spring and lasting several months. Last year was the first time that his conjunctivitis continued until frost. At the time that he was originally observed here at the Clinic he had marked ulcerations of the cornea, and typical cobblestone lesions (see figure 2) on the inner surfaces of the lids. He gave negative reactions to all of the pollens by the scratch method and by Ophthalmo test (grasses, ragweed and trees). He gave only moderate reactions to the inhalants and molds and was placed on a program of hyposensitization against dust, tobacco smoke and ashes, and a mixture of the molds. He was also restricted in diet and was seen at five-week intervals. He had recurrent flare-ups until the dosage of the extract was stabilized. He was last observed on September 16, 1939, and his eyes had entirely cleared up, with the disappearance of the characteristic cobblestone lesions and corneal ulcerations. His parents reported that he had been "getting along fine" and that he had gained some eight pounds in weight during the summer months. They stated that during a similar period of time last year, his symptoms were most pronounced.

Etiological Agents Suspected by the Patients

The patients were questioned as to the possible causative agents or factors that they themselves felt might be related to their presenting symptoms. These were classified under the headings of (1) inhalant factors including dust, feathers, orris root, silk, molds, etc., (2) foods, (3) chemicals, such as paints, fumes, drugs and cosmetics, and (4) physical or climatic factors such as wind, bright lights, sunshine, heat and cold. Fourteen patients, or forty-seven per cent, felt that inhalants were responsible for their symptoms.

Case No. 18 reported for study three weeks after the onset of his symptoms, the latter part of May, 1939. He complained of stabbing pains in his eye and stated that at the time of onset of his symptoms he had been cleaning some old books and records in the office and was covered with dust. He had had fall hay fever up until four years ago. Since that time, his symptoms have been controlled by ragweed hyposensitization. He has had in the past some bronchial asthma (seasonal) and a possible food allergy. He gave significant and strong reactions to the common inhalants and strong reactions to the molds. He was placed on a program of hyposensitization against the inhalants and molds along with his preseasonal ragweed treatments. Certain foods to which he gave severe reactions were eliminated from his diet. He has responded nicely to treatment and has obtained excellent results.

Five patients felt that foods were definitely related to the exacerbation of their symptoms. Of this five, two knew definitely which foods caused them trouble. One patient, case No. 14, thought that foods might be a factor, but was unable to state any definite food as being responsible for

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TABLE 1

	ALLIED ALLERGIC CONDITIONS									OTHER ALLERGIC (?) OCULAR DISORDERS					
Patient Number	*Asthma*	*Asthmatic Bronchitis*	*Perennial Allergic Rhinitis*	*Hay-fever*	*Atopic Dermatitis*	*Urticaria and A.N.E.*	*G. I. Allergy*	*Migraine*	*Misc.*	*Recurrent Styes*	*Contact Derm. Lids*	*Chronic Meibomianitis*	*Vernal Catarrh*	*Herpetic Keratitis*	*Phlyctenular Keratoconjunctivitis*
1			+				+								
2															
3			+												
4															
5															
6															
7			+	+											
8				+						+					
9			+				+	+							
10		+	+						+ (b)						
11			+											+	
12			+												
13															
14		+	+												
15															
16															
17			+								+				
18	+ (a)	+ (a)	+	+			+	+							
19				+						+					
20			+				+								
21												+			
22	+ (a)			+											
23							+								+
24		+	+					+					+		
25			+												
26			+		+	+							+		
27			+												
28			+			+							+		
29					+										
30			+						+ (c)		+				

a. Seasonal. b. Laryngitis.
c. Contact dermatitis.

The instance of the various allergic manifestations or allied allergic conditions in addition to the diagnosis of an allergic conjunctivitis.

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her eye symptoms. She did feel that she had experienced a definite exacerbation of symptoms usually in the evening, after supper.

One little patient, four and a half years of age, (case No. 23) has had recurrent conjunctivitis and gastro-intestinal symptoms. The mother questioned whether some foods might be related to the "ulcers in the eyes." She further went on to state that following the use of atropine the child had had some atropine dermatitis. This was confirmed by the referring physician who said she was also slightly susceptible to scopolamine.

A man (case No. 7), aged twenty-one, stated definitely that he had an exacerbation of his symptoms following the ingestion of cantaloupe. Another patient (case No. 29) experienced an exacerbation of symptoms following the ingestion of strawberries. In addition to the conjunctivitis, she had a contact dermatitis caused by using certain creams and lotions on her hands, which cleared up entirely following elimination of the offender.

One patient (case No. 1) had an increase of eye symptoms following the ingestion of eggs. This patient also had an associated genito-urinary allergy, characterized by paroxysmal nocturia following the ingestion of eggs. On the elimination of eggs from his diet, the nocturia cleared up and has not recurred. He has had some continuation of eye symptoms since that time, and we felt that although the eye symptoms may be related to the ingestion of eggs, there were other factors which have to be considered. His genito-urinary symptoms were so pronounced that he has refused to eat eggs again.

Five patients stated that they had a definite conjunctivitis following contact with chemical agents. Fresh paint in two instances (cases No. 1 and No. 16) caused symptoms. Another patient (case No. 17) found that during the time that she was using a certain washing powder, her eye symptoms were always increased. A young lady (case No. 30) experienced a definite flare-up of her conjunctivitis after using mascara on several successive nights. She stated that occasionally she could use this preparation for one night only without any exacerbation of symptoms but that she was unable to use it continuously as she always experienced trouble after three or four days' use.

A man (case No. 27), thirty-nine years old, found that following the taking of aspirin he experienced an exacerbation of his conjunctivitis. This cleared up after the drug was eliminated. In addition, he observed intense redness and itching following the use of a feather pillow. This was controlled by the use of an Allergen-Proof Pillow encasing.

Under the miscellaneous causes, six patients felt that certain physical factors caused them trouble. Of this six, four experienced a definite

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conjunctivitis following exposure to wind. Two of the group had an increase of symptoms after exposure to bright lights or sunshine.

A Comparison of the Results of Skin Tests with the Suspected Etiological Agents

Results of skin tests concurred with the history of inhalant factors responsible for eye symptoms in 14 cases. Significant skin tests were found in three cases out of five in which foods were suspected. Positive patch tests were found in two instances where contact factors were suspected.

The entire group of patients was tested with stock bacteria consisting of vaccines made from nine different varieties of organisms. Fifty per cent of the cases studied gave very strong bacterial reactions, more so than one usually finds in the routine study of allergic individuals. We have not drawn any definite conclusions from this, but report it as a possible coincidental factor.

Other Related Allergic Manifestations

Only six of the thirty cases, or 20 per cent, had no related allergic manifestations. Seven of the patients had, in addition to their conjunctivitis, one additional allergic manifestation. Nine had two other allergic manifestations. Seven cases had three or more other allergic conditions with their conjunctivitis. (See table No. 1.)

One-third of the cases studied gave a history of one or more previous allergic manifestations which they had not experienced during recent months.

Results of Treatment

These patients were observed over a period of time from two months to four years and eight months. One-half of the cases were observed for six months or longer, and the rest were observed over a period of two to six months.

Our results of treatment were classified under the following headings: excellent, good, fair, poor, no report, not treated.

From the reports of the results of treatment to date, we have experienced satisfactory results in over fifty per cent of these patients. This group of patients was not selected, but consists of thirty consecutive cases of allergic conjunctivitis with no exceptions.

Reference

1. Hansel, French K.: "Allergy of Nose and Paranasal Sinuses". C. V. Mosby Co., St. Louis, 1936.

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