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Rheumatic Iritis
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Iritis

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A contribution to the study of Rheumatic Iritis.

By F. J. Poynton, M.D., and Alexander Paine, M.D.

(With Plate III, figs. 1 and 2.)

Introductory.

Before we commence this paper we must define our position to-night. We do not pretend to that skilled knowledge of irido-cyclitis which would be asked of an expert, but have—when investigating the subject of rheumatic fever—observed certain facts which may be of interest to ophthalmic surgeons, and which in this spirit we bring before you on this occasion.

For us rheumatic iritis is rather an incident in a general infection than a disease, and for our purpose it matters little whether it is rare or frequent in its occurrence. The question, as it presents itself, is sufficiently simple: Can a micro-organism which is a cause of rheumatic fever produce iritis as it does endocarditis, pericarditis, arthritis, pleuritis, and subcutaneous nodules?

For the ophthalmic surgeon the subject is much more complex, involving points in treatment and refinements in diagnosis and management to which we need not now allude. For him it is a disease of first importance; for us it is, as we have said, an incident in a general infection.

The clinical position of Acute Rheumatic Iritis.

Among ophthalmic surgeons we believe there is some divergence of opinion as to the frequency and occurrence of acute rheumatic iritis, though there appears to be little doubt that it is a rare, but not unknown event—a

statement which we would venture to support with such experience as we have ourselves had. Further support of its rarity was supplied in January, 1903, by Macrae, in the *Journal of the American Medical Association,* who noted its occurrence only once in 270 cases of rheumatic fever.

A good example of the condition was published in the *British Medical Journal* for March 7th, 1903, by Mr. F. C. Forster, of Lowestoft, and in addition Mr. Forster kindly sent us in a letter some further details, which we have his leave to quote. It may perhaps be remembered that it was the case of a girl, æt. 12½ years, who developed, after a definite chill, tonsillitis and arthritis. Then followed chorea, and later iritis of the right eye and endocarditis. In his letter Mr. Forster writes as follows:—"The iritis came on very suddenly when she was recovering from chorea. The right eye alone was affected; the pupil was altered in shape, and a naturally brown eye assumed a yellow tinge. . . . There was the usual marked congestion (especially circumcorneal), with great pain and photophobia; the pain was both topical and supra-orbital. . . . The iritis relapsed twice, and I feared that some posterior synechiæ would eventually lead to diminution of vision. . . . Recovery was eventually good. Rheumatic iritis," he adds, "is, of course, not common in children, but I have met with few more typical than the one under discussion. Syphilis, gonorrhœa, and trauma may certainly be excluded as causes in this particular case."

This seems to us a clear example of acute rheumatic iritis of unusual severity. Such examples as we have seen have been very transient.

Among those who are opposed to the acceptance of acute rheumatic iritis, much importance is attached to the gonorrhœal infection. Even if this may have occurred some years before, they attribute an iritis of a rheumatic type to that cause. In passing we would venture to point out the well-known fact that rheumatic symptoms are most liable to occur in those subjects of gonorrhœa who have suffered

PLATE III.

Illustrates Drs. Poynton and Paine's contribution to the Study of Iritis.

Fig. 1.—Experimental rheumatic iritis (d) produced by intra-venous inoculation of a rabbit. Under low magnification. The black mass represents the diplococci on the anterior surface of the iris lying in the exudation.

Fig. 2.—The same, more highly magnified, to show the diplococci in the exudation.

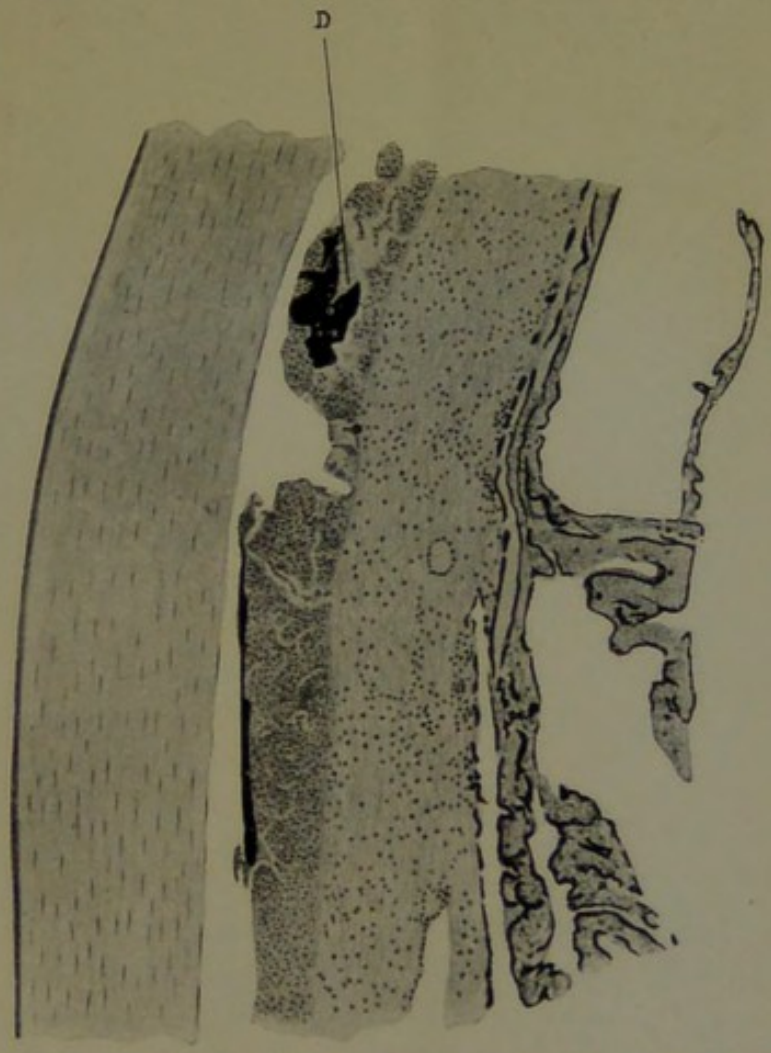

Fig. 1.

Fig. 2.

previously from rheumatic fever ; also that the diplococcus of the gonorrhœal infection was one of the earliest known of this type of micro-organism, and its recognition established in text-books on hard and fast lines, which with more mature experience are perhaps a little too hard and fast ; and, lastly, that the rheumatic infection equally as much as the gonorrhœal is liable to lurk in the system for long periods. Both diseases may theoretically be causes of iritis. Both linger in the system. We are thus in agreement with Mr. Lawford's opinion on the imperfection of this *proof* of the gonorrhœal origin of many cases of iritis as expressed at the British Medical Association meeting in August, 1901.

The Object of the Communication.

The object of our communication is to show that acute iritis may result in rabbits from experimental inoculations with a diplococcus or micrococcus which is a cause of rheumatic fever.

Other observers—for example, Birch-Hirschfeld—have produced septic panophthalmitis by inoculations from cases of septic endocarditis, but in our two cases the micro-organism was isolated, first, from a case of ordinary rheumatic fever in a child, and, secondly, from a case of malignant endocarditis of rheumatic origin, and in neither animal did there result septic panophthalmitis.

The cases we will detail immediately, but we first emphasise the fact that these inoculations were intravenous—into the auricular veins of rabbits,—and not local—into the eye. Had they resulted from local inoculations we should not personally have attached any importance to them.

The Investigation.

Case 1.—In 1899 a boy æt. 9 years, who was suffering from morbus cordis, developed, while under observation, active rheumatism—that is to say, arthritis,

pericarditis, and subcutaneous nodules. Death resulted from pericarditis. From the pericardial fluid, which was clear but contained also flakes of exudation, minute diplococci were isolated. They were also demonstrated in films of the pericardial fluid, in which they grew in chains. The necropsy showed the usual results of rheumatic fever in childhood—there was no suppuration.

The first rabbit inoculated intra-venously with the pericardial fluid died on the ninth day of arthritis, pericarditis, and broncho-pneumonia. The second died on the twentieth day with arthritis and pericarditis. The third recovered. The fourth was killed on the tenth day, and suffered from arthritis and mitral endocarditis. The fifth was killed on the ninth day, and suffered from pericarditis, pleurisy, endocarditis, pneumonia, and arthritis. The sixth developed choreiform movements, and was killed. The seventh died of malignant endocarditis. The eighth died, on the tenth day, of pericarditis and endocarditis with an infarct in the left lung. It was this one that developed iritis of the left eye. The ninth developed chronic rheumatic arthritis; and then we lost the strain, failing to recover the organisms from the exudation. Thus it will be seen that of a series of nine animals only one developed iritis. There was nothing unusual about the inoculation, but the animal was a feeble one. On the fifth day there was some lacrymation ; this continued for two days, and then followed injection of the conjunctival vessels, discoloration of the iris, and considerable exudation into the anterior chamber. It should be clearly stated that the appearance was not like that of an hypopyon, and after death the fluid was not opaque and yellow, but a little cloudy, although, as will be seen, it contained vast numbers of the micro-organism. The condition in no way resembled one of septic panophthalmitis. It was an easy matter to grow the micro-organism again from the fluid in the anterior chamber, and it showed the usual characters. The next rabbit inoculated developed chronic arthritis.

Under the three microscopes there are shown—

(1) A film of the exudation.

(2) A section of the iris under a low power showing the exudation, fibrino-cellular in character, on the anterior surface of the iris.

(3) The same under a high power showing the micrococci in the exudation.

The anterior surface of the iris, after removal, was seen to be dotted over with small, raised, white areas.

The minute description of the changes is given with the drawings placed beside the microscopes.

Since that investigation we have repeatedly studied the illness produced in rabbits by the injection of this micrococcus, and although we have from time to time noticed lacrymation and slight conjunctivitis, we have only once met with iritis again, and that with a culture obtained from the malignant type of rheumatic endocarditis.

Case 2.—A boy æt. 13 years, in December, 1900, was admitted under Dr. Lees to St. Mary's Hospital for heart disease. He had suffered two years before from an attack of rheumatic fever. The present illness had commenced insidiously. Mitral and aortic disease were discovered; the boy went from bad to worse, and died rather unexpectedly in January, 1901.

General pericardial adhesion, malignant mitral and aortic endocarditis, and a splenic infarction were found. There was no suppuration. Two hours after death we isolated from the cardiac valves a minute diplococcus.

Intra-venous inoculations were again made.

Rabbit No. 1 died of malignant mitral endocarditis with iritis.

" " 2 " pericarditis and endocarditis.

" " 3 " pericarditis and endocarditis.

" " 4 " pericarditis.

" " 5 recovered.

It is remarkable and interesting that in a considerable number of investigations we have only met with iritis

twice; and that Fritz Meyer, who has made extensive experiments with animals with a similar organism, does not mention its occurrence. Nor, to our knowledge, have Dr. Ainley Walker and Dr. Beaton met with it. It must, I think, be a rare occurrence, as in man.

There is still a great gap in our knowledge. For no one, so far as we are aware, has isolated this organism from a case of rheumatic iritis in man and produced rheumatic fever in animals. We have waited in vain for such an opportunity for three years, and bring this forward in the hope that someone may complete the chain of evidence.

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