CASE NOTES

PERI-ARTERITIS RETINAE*

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THE case about to be described occurred during the Second World War in a Royal Canadian Air Force warrant officer shot down over Germany. He was taken prisoner and was first seen in Stalag 344, Lamsdorf, Upper Silesia. The unusual feature of his case was that the retinal lesions were confined to the retinal arteries and a diagnosis of peri-arteritis retinae was made, for want of a better name.

Case Report

Warrant Officer C., aged 26, was first seen on March 31, 1944, when he complained that he had been seeing black spots in front of both eyes for the preceding 2 months. He had noticed no signs of inflammation in the eyes.

Examination.—Visual acuity in the right and left eyes was 4/4.5. Each eye had pigmented spots on the anterior surface of the lens and vitreous opacities. Ophthalmoscopic examination showed multiple small white areas on the retinal arteries (Figs 1 and 2), more marked in the left eye. The retinal veins in both eyes were dilated. An investigation was made to see whether there were any foci of infection elsewhere in the body.

FIG. 1.—Right eye, 23.4.44.

FIG. 2.—Left eye, 23.4.44

White plaques on course of arteries.

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The blood sedimentation rate was 3 after one hour and 15 after two hours. The urine was clear. The blood pressure and blood count were normal. The Wassermann reaction was negative. X ray of chest showed no abnormality and an intradermal tuberculin test was negative. He had some stuffiness of the nose, and examination by Capt. A. F. Stallard, R.A.M.C., revealed muco-purulent discharge from the middle meatus on the left side and a little less from the superior meatus on the same side. He was given Argyrol packs and douches and later ephedrine and menthol drops. An x ray examination showed that both antra were probably opaque. The patient was later referred to a German hospital for examination where a detailed investigation was again carried out, including examination of the sputum for tubercle bacilli, with negative result.

The clinical picture was therefore one of old iridocyclitis with a few posterior synechiae and vitreous opacities, along with multiple white plaques on the retinal arteries. Some of these appeared to encircle the artery like a cuff, while others appeared to be applied to the side of the artery (Fig. 2, upper temporal artery).

Clinical Course.—The fundi were examined at intervals and it was found that the white plaques tended to become absorbed. Four months after the first examination (Figs 3 and 4), fluffy pink areas began to make their appearance on the course of several of the retinal arteries. These were fainter in the left eye (Fig. 4, lower nasal artery) and more obvious in the right (Fig. 3, lower nasal artery). At the lower extremity of the right lower nasal artery a fluffy patch was visible through which sheathing of the underlying artery could be seen (not shown in Fig. 3). No white plaques were visible in the right eye, but two were still visible on the course of the left upper temporal artery in the area of the optic disk (Fig. 4). In both eyes small, bright yellow, circular dots were beginning to make their appearance on the course of the retinal arteries at sites roughly, but not necessarily, corresponding to the former position of the white plaques.

FIG. 3.—Right eye, 19.8.44

FIG. 4.—Left eye, 19.8.44

Yellow refractile circles and pink fluffy areas on course of some arteries.

Seven weeks later the appearances tended towards recovery (Figs 5 and 6) but a fresh fluffy pink patch could be seen on the course of the left upper temporal artery (Fig. 6). In the right eye several small, bright yellow circles could be seen outside the lower branch of the superior temporal artery (Fig. 5).

About nine weeks later the left eye showed two small fresh white circular areas on the course of the lower temporal artery (not shown in the diagrams). The white plaques on the course of the left upper temporal artery in the area of the optic disk were still

visible about 10 months after the first examination when it became impossible to follow up the case further.

FIG. 5.—Right eye, 10.10.44

FIG. 6.—Left eye, 10.10.44

Yellow refractile circles, fewer in number in left eye, but occurring outside one branch of temporal artery in right eye. One pink fluffy area can be seen in each eye. Only left eye still shows two white plaques in optic disk area.

Discussion

Peri-arteritis is a much rarer condition than periphlebitis in the eye and, in this case, appeared to be a complication of iridocyclitis. It is well known that periphlebitis can occur as a spread backwards from iridocyclitis but peri-arteritis is not such a common complication. It is, of course, possible to have the two conditions occurring in an eye simultaneously, but, in the present case, apart from some dilatation of the veins, the changes were confined to the arteries and no haemorrhages were present.

A study of the changes which have occurred brings out the following points:

- (1) The first changes seen were white plaques, sometimes apparently encircling the artery like a cuff and sometimes apparently applied to the side of the artery.
- (2) Small refractile circular areas appeared on the course of the arteries; these were apparently at the former site of a white plaque, but not necessarily so.
- (3) Pink fluffy areas appeared on the course of the arteries, some of which were succeeded by refractile yellow circles as before.
- (4) Although the majority of the white plaques disappeared there were still three small ones applied to the left upper temporal artery in the area of the optic disk after an interval of about 10 months.

The significance of the pink areas is not clear. They seem to indicate a small focus of activity of some kind and it would be attractive to suggest that they were the forerunners of the white plaques. Such a change, however, was not seen to occur. It is curious too, that, although the arterial

wall must have been damaged by the infective process, if such it be, no haemorrhages were seen to occur.

The question of aetiology is difficult. In recorded cases, tuberculosis has been regarded as a possible cause, and Muncaster and Allen (1939) have described a case which bears a striking resemblance to the present one. Their case followed a tuberculin test and it is interesting to note that it was associated with a generalized uveitis which, presumably, included iridocyclitis as in the present case. The case referred to is illustrated in Duke-Elder (1940), and it will be seen that the white plaques are smaller than those seen in the initial stages described above, but a few circular white areas of similar size did develop in the present case which do not appear in the illustrations. In addition, a fluffy patch can be seen on the artery at 6 o'clock in Muncaster and Allen's case which bears some resemblance to the pink fluffy patches described above.

Tuberculosis was considered to be a causal factor of the iridocyclitis and the peri-arteritis in the present case, but all investigations in this direction were, as already stated, negative.

The only other possible source of infection here was in the nasal air sinuses and an x ray of the skull showed that both antra were probably opaque. Although it is very difficult to determine the causal factor, it must be recorded that, under treatment of the nose with Argyrol packs and douches and, later, with ephedrine and menthol drops, the condition of both nose and eyes improved. This, however, was probably coincidental.

Summary

A case of peri-arteritis retinae apparently following an attack of iridocyclitis is described. The signs presented were white plaques and later pink fluffy patches on the course of the retinal arteries. No focal cause of these changes was found but the aetiology is discussed.

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