Summary

An unusual complication was observed which developed after cataract extraction.

After intra-capsular cataract extraction with a round pupil in a woman of 83 years, the surface of the vitreous was covered by a pigment layer, similar to pigmented after cataract (so called Pigment-nachstar) causing her serious sight disturbances.

LITERATURE

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A CASE OF PYOCYANEUS RING ABSCESS OF THE CORNEA TREATED WITH STREPTOMYCIN *

BY

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RING abscess of the cornea is a rare and always a dramatic event for the oculist. Its treatment until a few years ago was a most ungrateful task. Since the appearance of the sulpha drugs and the modern antibiotics new hopes have arisen. The number of cases published since then is so small, however, that I may be justified in reporting a favourable effect of streptomycin treatment on a ring-ulcer caused by *pseudomonas aeruginosa* (B. pyocyaneus).

Case History

The 15 years old apprentice M. St. was hurt on August 15, 1947, by a tiny splinter of iron which stuck in the superficial layers of his right cornea near its centre. It did not hurt him very much, and he appeared in the eye-infirmary of the worker's Sick Fund only two days later. There was already a small infiltration around the foreign body which was easily extracted. He received atropine, hot poultices were ordered, and when he came back the next day, there was no change for the worse. I, myself, saw the patient only on the third day of treatment, when he told me that during the previous night he had felt unbearable pains in the hurt eye which had become blind during the last few hours. The eyeball was highly irritated, the whole right cornea, save a narrow peripheral rim of 1 mm., was occupied by a large abscess, the central part of which was slightly

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transparent. A hypopyon filled a quarter of the anterior chamber. The green-blue hue of the pus immediately raised the suspicion of a pyocyanus infection, and it was confirmed on the next day by culture. As I had no streptomycin at my disposal I provisionally used penicillin. 100,000 units of pure white penicillin were dissolved in 2 c.c. distilled water, half of it was injected under the conjunctiva, the anterior chamber was punctured, the hypopyon removed, and two drops of the solution introduced into the anterior chamber. The remaining content of the vial was injected intramuscularly, and in addition 500 units of vitamin C into the cubital vein. The patient was admitted to hospital, hot cataplasms, atropine, and 6 grms. of sulfadiazine daily were prescribed. The father of the young patient with much difficulty succeeded in getting hold of 5 ampoules of streptomycin within two hours, and from then on it was applied every 3 hours intramuscularly, instilled into the eye hourly, and injected under the conjunctiva daily. On the second day of his stay in hospital 2 drops of the streptomycin solution (2,500 units) were introduced into the anterior chamber. This procedure was much more painful than introducing penicillin, but no doubt it was more useful. The patient received totally 1 gm. streptomycin daily, and in addition repeatedly powdered boric acid and sulphathiazole into the conjunctival sac, and sulfadiazine per os 6 grms. daily.

After the beginning of this intensive treatment, the purulent corneal infiltration did not proceed further, though the anterior chamber kept on filling with thick pus. On the third day of streptomycin treatment only, when a broad Saemisch's section was performed, the corneal infiltration rapidly declined. Two days later marked regression of the whole inflammatory process was established. The cornea became more lustrous and transparent, and the clear peripheral zone, chiefly in its upper part, broadened to 2 mm. The top margin of the atropine widened pupil became visible; the patient was able to distinguish hand movements before the eye, and light projection was correct; tension -1. The patient remained in hospital for two more weeks. When dismissed he still had slight ciliary irritation, the cornea appeared somewhat flattened and to a large extent occupied by a leucoma, through whose more translucent centre the pupil was distinctly visible; the cornea regained its normal lustre, and on the nasal side there was a peripheral anterior synechia. Tension was at first -1, but a few days later secondary glaucoma appeared which ultimately compelled me to antedate the already contemplated iridectomy. It was performed *ab externo* on October 16, 1947. After an uneventful post-operative course, the tension dropped to normal. Vision for the moment is finger-counting only, in spite of a broad coloboma; though its further improvement may be expected.

Comment

It seems clear that the quick control of the fulminating infection was brought about by the intensive streptomycin therapy. Five grms. of it were applied systemically in the course of 5 days, apart from the initial dose of 100,000 units of pure white penicillin, and 36 grms. sulfadiazine during 6 days. In addition streptomycin was given twice subconjunctivally and once into the anterior chamber.

In order to make sure that streptomycin was the effective factor, the strain of pyocyaneus was tested in the bacteriological laboratory of Dr. W. Hirsch for its sensitiveness to streptomycin. It became evident that 500 units were able to check the growth of the bacteria, whereas 50 units still allowed it.

The publications about therapeutic effects in pyocyaneus infections in the era of sulpha-drugs, penicillin and streptomycin are rather sparse and it appears that we have still not got over the stage of tentative trials. The effect of even high doses of sulphathiazole against pyocyaneus meningitis was not encouraging¹. The same applies to penicillin which finally was summed up as inefficient against pyocyaneus in most handbooks. The case of Alpert², however, shows that it is not always true. He succeeded in stopping a ring abscess of the cornea caused by pyocyaneus and staphylococcus aureus haemolyticus with intracameral injection of only 75 units of penicillin, though in combination with sulfadiazine and typhoid vaccine within a week. Owens³ reports in August, 1946, a ring abscess of the cornea caused by *Escherichia coli* which he was able to stop by hourly instillation of streptomycin.

Adcock and Plumb⁴, and Pool and Cook⁵ report in two very instructive papers on the influence of streptomycin on infections of the urinary tract caused by a mixed flora of aerobacter aerogenes, *B. coli* and *B. pyocyaneus*. They pointed out that although in all their cases fever and pyuria promptly subsided, only the aerobacter group quickly disappeared in the urine, whereas *B. coli* and *B. pyocyaneus* were found a long time afterwards. They conclude that both *B. coli* and *B. pyocyaneus* respond to streptomycin on a limited scale only.

Just because of the many discrepancies contained in the reports mentioned above, I have felt obliged to add my case to the small number so far recorded.

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