DIAMOX THERAPY IN FLAT CHAMBER*

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AFTER intra-ocular operations the anterior chamber may re-form slowly or not at all. Apart from cauterization of the leak, if it can be found, little can be done. A recent report of Murphy (1955) in treating a leaking chamber prompted us to try Diamox therapy in all cases of non-re-formation of the anterior chamber.

The complication of non-re-formation of the anterior chamber after intra-ocular surgery, particularly after surgery of lens and glaucoma, has long been recognized. The two most common reasons for this complication are a leaking chamber and choroidal detachment. If the two are found together the chances of the recovery of the eye are meagre, and they usually result in the formation of anterior synechiae, secondary glaucoma, and loss of the eye. Kronfeld (1954) reviewed the question of delayed restoration of the anterior chamber with regard to aetiology and possible therapy. He regarded leaking of the anterior chamber as one and pupillary block as the other mechanism responsible for this complication. He advocated repair, removal of suture, strong miotics, and air injection in leaking cases, and mydriatics in pupillary block cases, with effective results. Murphy (1955) used Diamox in two cases of leaking chamber, giving 500 mg. twice daily with good results in both.

Material

45 patients in which the anterior chamber had not re-formed by the fifth post-operative day were chosen for this study. In 25 cases intracapsular or extracapsular cataract extraction had been done, in ten trephine, and in the remaining ten iridencleisis.

Method

All these patients were given 250 mg. Diamox orally morning and evening for one week or until 2 days after the restoration of the anterior chamber, whichever was earlier. If the chamber did not form after one week of therapy the case was regarded as a failure

Results

The anterior chamber was restored in forty of the 45 cases and in five the treatment was a failure. The cases in which the chamber did not form had all been operated for cataract. In two of these the chamber was leaking and was restored after cauterization (of the whole extent of the section) with 2 per cent. trichloroacetic acid. Of 23 cases associated with choroidal detachment only three did not respond and were discharged. The results are summarized in the Table (opposite).

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TABLE
RESULTS OF DIAMOX THERAPY IN NON-RESTORATION OF ANTERIOR
CHAMBER AFTER OPERATION

Type of Operation	Cause of Non-restoration	No. of Cases Treated	Dose of Diamox	No. of Failures	Chamber Re-formed (No. of Days)					Total Cured
					1	2	3	4	5	
Cataract Extraction	Leaking chamber with choroidal detachment	12	250 mg. twice daily	2	4	2	3	—	1	10
	Choroidal detachment with or without leaking chamber	13	250 mg. twice daily	3	2	4	3	1	—	10
Trephine for Glaucoma	Leaking chamber without choroidal detachment	4	250 mg. twice daily	—	1	2	1	—	—	4
	Leaking chamber with choroidal detachment	6	250 mg. twice daily	—	1	2	2	1	—	6
Iridencleisis	Leaking chamber without choroidal detachment	6	250 mg. twice daily	—	2	2	1	1	—	6
	Leaking chamber with choroidal detachment	4	250 mg. twice daily	—	2	1	1	—	—	4

Discussion

Of the 45 cases, 23 were those complicated by choroidal detachment. The frequency of this association is not fully realized from Kronfeld's series. A fundus examination should be done as a routine when the chamber has not re-formed within a reasonable time (by the fifth day after the operation). What Kronfeld terms a pupillary block may actually be due to a degree of choroidal detachment, and his advocacy of mydriasis in these cases is in keeping with the recognized treatment of choroidal detachment. Murphy (1955) administered Diamox in two cases of leaking chamber with good results but did not try this therapy in other conditions. He believes in a relationship between Diamox administration and restoration of the anterior chamber and suggests that the passage of aqueous through the wound may be diminished with a consequent acceleration of epithelial and fibroblastic repair. This may be quite true of the cases of leaking chamber. Our experience of the restoration of the anterior chamber in cases of non-formation

not associated with wound leakage suggests that, though the explanation offered by Murphy may be one of the mechanisms of action, it does not cover the whole field. Some other mechanism also seems to play a part in the restoration of anterior chamber; perhaps a diminished pressure in the posterior chamber pulls on the iris and, so that it falls back, remains in this position, and allows the chamber to re-form. With the re-formation of the anterior chamber the choroidal detachment also disappears, through the re-adjustment of pressure in the various ocular compartments.

Summary

(1) 45 cases of non-restoration of the anterior chamber (25 after cataract extraction, ten after trephine, and ten after iridencleisis) were reviewed.

(2) Choroidal detachment was found to be an important cause of non-restoration of anterior chamber.

(3) Diamox was effective in restoring the anterior chamber in 88 per cent. of cases.

(4) The mechanism of action of Diamox is uncertain, but it may cause a re-adjustment of pressures in the ocular spaces and at the ciliary head.

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