Echothiophate Iodide for Flat Anterior Chamber Following Cataract Extraction

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SUMMARY

Three cases are presented of late flat anterior chambers which were cured by echothiophate iodide treatment. Two of the cases required repeated instillations to achieve permanent restoration of normal chamber depth. We now recommend that echothiophate treatment be considered in cases of late flat anterior chamber unresponsive to standard medical treatment.

Flat anterior chamber in the late postoperative period following cataract extraction continues to be a problem in management. Treatment has included cycloplegia, oral glycerol, dilatation with phenylephrine pack, and bilateral patching. A few cases have been reported responding to treatment with echothiophate iodide.

In this report three cases are presented to describe our experience in the use of echothiophate iodide in late flattening of the anterior chamber following cataract extraction.

CASE 1

A 50-year-old man underwent an uncomplicated intracapsular cataract extraction in his left eye. A fornix based flap, peripheral iridectomy, and seven 8-0 virgin silk sutures were used. A deep anterior chamber was present on discharge eight days later. On the 23rd postoperative day a flat anterior chamber was noted. No wound leak could be detected by Seidel’s test. Intraocular pressure measured two mm Hg. A peripheral choroidal detachment was seen. Dilatation and patching were tried for 48 hours without any deepening of the anterior chamber. Treatment was then begun with two drops of echothiophate iodide 0.125% repeated again after 12 hours. Within two hours after the second instillation the anterior chamber had reformed to normal aphakic depth, and remained normal after cessation of treatment.

CASE 2

A 53-year-old woman underwent an uncomplicated intracapsular cataract extraction in her right eye. A fornix based flap, sector...
iridectomy, and seven 8-0 virgin silk sutures were used. The postoperative course was uneventful. On the 26th postoperative day a shallow anterior chamber was noted, with central vitreous touch. The cornea showed a slight Descemet’s fold. Intraocular pressure was five mm Hg. No wound leak could be demonstrated, but a choroidal detachment in the supero-nasal quadrant of the fundus was seen. Treatment with dilatation, patching and oral glycerol did not deepen the chamber. Because of the presence of chamber peripherally it was felt that peripheral anterior synechiae would not develop, and it was therefore decided to follow the patient while treating with atropine 1% twice daily. On the 43rd postoperative day the chamber was seen to be almost completely flat despite continued dilatation. At this stage two drops of echothiophate iodide 0.06% were instilled and one hour later a normal deep anterior chamber was noted. One week later, without treatment, the chamber was again noted to be shallow, with intraocular pressure of 10 mm Hg. Echotothiophate iodide treatment again restored normal chamber depth within an hour, but was now continued twice daily for a week. At that time the echotothiophate iodide was discontinued and normal depth has been maintained since.

CASE 3

A 70-year-old woman underwent an uncomplicated cataract extraction in her left eye. Fornix based flap, peripheral iridectomy, and seven 8-0 virgin silk sutures were used. The patient was discharged on the eighth postoperative day with normal chamber depth and normal intraocular pressure. On the 12th postoperative day the patient was noted to have a flap anterior chamber. Mild striate keratopathy was present. Intraocular pressure was zero, and no leak could be detected with the Seidel test. Treatment with dilatation and patching for a three-day period did not alter the chamber depth. On the 15th postoperative day the patient was taken to the operating room where a choroidal tap was performed. A questionable area of the wound from 10 to 12 o’clock was resutured with 8-0 silk. Air was used to reform the anterior chamber.

For the next two weeks normal chamber depth was maintained with mydriatics and patching, but on the 30th postoperative day the chamber was again flat with zero intraocular pressure. Only two instillations of echotothiophate iodide 0.06% restored normal chamber depth within one hour. However, seven days later, the chamber was again noted to be flat. Echotothiophate iodide 0.06% again restored the chamber within an hour and treatment was then continued twice daily for a week. At that time treatment was discontinued and normal aphakic depth has been maintained since.

DISCUSSION

Late loss of the anterior chamber after cataract extraction is generally associated with a wound leak. This may cause the iris diaphragm to move forward and produce a relative pupillary block. According to Christensen, some of the factors responsible for this forward movement are pressure from misdirected or trapped aqueous behind the iris diaphragm, or displacement pressure of an expanding choroid. Treatment is directed toward wound leak closure by patching, and to relief of pupillary block by pupil dilatation and vitreous dehydration with oral glycerol. If necessary, the suprachoroidal space is drained and air injected into the anterior chamber.

Gorin was the first to report the use of echotothiophate iodide in late flat anterior chambers unresponsive to medical treatment. He mentions several cases, but his one detailed description is similar to our first case where echotothiophate iodide quickly restored normal aphakic depth of anterior chamber and this was maintained without further treatment. Vukcevich recently reported four similar cases. In addition, we have presented two other cases which responded initially to echotothiophate iodide, but reverted to flat or shallow depth with cessation of treatment. Only after continued instillation twice daily for a week could the echotothiophate iodide be discontinued without flattening of the chamber. It would seem that an anatomical or functional change induced by the surgery predisposing to flattening of the chamber was present in these patients and could only be reversed by intensive strong miotic treatment. We now recommend echotothiophate iodide treatment in cases of late flat anterior chamber unresponsive to standard medical treatment after careful examination of the fundi of both eyes to ascertain that changes are not present that predispose to retinal detachment.

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REFERENCES