Management of Posterior Synechiae, Peripheral Anterior Synechiae, Iridocorneal Adhesions, and Iridectomy

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Core Messages

■ Surgical interventions in uveitic patients frequently produce frustrating results, due either to intraoperative complications or exuberant postoperative inflammation. The primary goal of every uveitis therapy, therefore, should be the prevention of ocular damage requiring subsequent surgery.
■ Posterior synechiae are the most common ocular complications in chronic or recurrent anterior uveitis, occurring in 13–91% of affected eyes.
■ Peripheral anterior synechiae are usually asymptomatic unless large areas of at least 270° are involved.
■ Central iridocorneal synechiae are frequently associated with rubeotic iris vessels. Thus, due to the high frequency of intraoperative bleeding and to the high recurrence rates, a synechiolysis should rather be avoided if possible.
■ Complete quiescence should be sought; however, when acute surgical interventions are required, especially in the case of iridectomies, they should not be postponed until further irreversible adverse events occur.
13.1 Introduction

Uveitic eyes, even those appearing clinically quiet, tend to show unexpected intraoperative complications. Bleeding from the corneoscleral wound, the iris or detachment of Descemet’s membrane following the dissection of iridocorneal adhesions may occur. Exuberant inflammation is also a dreaded postoperative complication, frequently leading to frustrating results of the ocular surgery. Hence, the main goal in treating uveitic patients should be the prevention of complications of chronic or recurrent uveitis to reduce the need for surgery in the first place [1]. If surgery is inevitable, every effort should be made to keep inflammation under control for as long as possible preoperatively, except for those situations requiring immediate surgery. In those instances, inflammatory activity should be reduced as far as possible, but surgery should not be postponed indefinitely, as this would risk additional irreversible damage [2]. Even with the most potent anti-inflammatory drugs, there may be irreversible damage to the normal ocular architecture, most commonly in the form of posterior synechiae [3–6].

13.2 Posterior Synechiae

13.2.1 Etiology

Posterior synechiae usually develop with chronic persistent or recurrent uveitis, such as HLA B27-associated uveitis, idiopathic anterior uveitis, iridocyclitis in juvenile idiopathic arthritis, sarcoidosis, intermediate uveitis, lens-induced uveitis (e.g., phacolytic, lens particle, phacoanaphylaxis) and uveitis-glaucoma-hyphema (UGH) syndrome. Infectious uveitis entities such as herpes simplex, herpes zoster, tuberculosis and syphilis may also be associated with formation of posterior synechiae. Fuchs heterochromic iridocyclitis, however, typically lacks posterior synechiae.

13.2.2 Incidence

In HLA B27-associated uveitis, posterior synechiae are described in 13–91% of cases. In patients suffering from HLA B27-negative uveitis, the numbers vary from 7% to 46% [3–6].

13.2.3 Clinical Appearance

Posterior synechiae may be present as focal adhesions, or may extend over the entire surface of the lens, if pupillary or prelental membranes are present.

13.2.4 Procedures

13.2.4.1 Medical Treatment

Newly formed synechiae should be treated with intensive local anti-inflammatory therapy in addition to short-acting mydriatics. Alternatively, mydriatic combinations (containing 0.3% cocaine hydrochloride, atropine sulfate 0.1%, adrenaline (epinephrine) 1:10,000.03) [7] can be injected subconjunctivally into the inferior fornix. Subconjunctival mydriatic combinations should, however, be used with care, since adverse cardiac events may occur.

13.2.4.2 Surgical Treatment

Posterior synechiae surgery is usually combined with cataract surgery or to ensure optimal visualization for vitrectomy. Local, circumscribed adhesions can easily be lysed with a blunt spatula or by injection of high molecular weight ophthalmic viscoelastic devices (OVD). Sharp dissections of posterior synechiae should be avoided.

13.2.4.3 Surgical Technique

Depending on the surgeon’s experience, the extent of the posterior synechiae, the patient, as well as additional surgical steps planned, such as vitrectomy, the procedure can be done under general, retrobulbar, peribulbar as well as topical anesthesia. After a corneal incision, attempts can be made to hydrodissect the posterior synechiae using a 27-gauge cannula attached to a 2 ml syringe filled with a mydriatic agent such as adrenaline 1:10,000. Alternatively, circumscribed synechiae are usually easily lysed with an iris spatula. In instances of pupils of less than 3 mm, large prelental membranes should be expected. In these eyes, the dissection of posterior synechiae should be attempted only in the presence of intracameral high molecular weight OVD, to maintain constant intraocular pressure as otherwise bleeding from iris vessels can be expected.