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# Clinical Course before and after Cataract and Glaucoma Surgery under Systemic Infliximab Therapy in Patients with Behçet's Disease

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## Key Words

Behçet's disease · Cataract · Glaucoma · Infliximab · Intraocular surgery

## Abstract

**Purpose:** Patients with Behçet's disease often need intraocular surgeries for the treatment of secondary cataract or glaucoma. This study aims to report the clinical course before and after the intraocular surgeries of 5 patients who were systematically treated with infliximab.

**Methods:** Retrospective case series.

**Results:** Seven eyes of 5 male patients with Behçet's disease, who underwent intraocular surgery while under systemic infliximab therapy at Yokohama City University Hospital from 2007 to 2009, were included in the study. The mean age at surgery was 44.2 years. Phacoemulsification was performed on 4 eyes, and trabeculectomy was done on the remaining 3 eyes. The mean duration since the onset of the ocular symptoms was 107 months. Control of the ocular attacks with the use of other systemic medications was difficult for all patients; however, the use of infliximab enabled adequate control of the attacks. The visual acuity status during the preoperative stage did not worsen during the postoperative period. No infectious complication was observed in all cases.

**Conclusions:** Our results suggest that infliximab treatment does not complicate any subsequent intraocular surgery. Patients with Behçet's disease in need of intraocular surgery can benefit from control of attacks with infliximab treatment.

## Introduction

Behçet's disease (BD) is characteristically an incurable systemic disease with recurrent inflammation [1–3]. In Japan, BD is known as one of the three major causes of uveitis. In general, uveitis is frequently associated with complicated cataract and secondary glaucoma [4, 5]. In some cases, surgical treatment is required. When surgical treatment of ocular inflammatory diseases is considered, control of the ocular inflammation before and after surgery is an important factor [4, 5]. For an ideal outcome of surgical treatment it is necessary that ocular inflammation has been under control for a few months prior to surgery [4]. Since the attacks of BD tend to be induced by surgical invasion [3], the decision to conduct surgery for BD is meticulous compared to other uveitis. However, there are cases of BD with uncontrollable uveitis, and such cases occasionally need surgical treatment.

Infliximab is a monoclonal antibody against tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) [3]. Infliximab has been approved for treatment of incurable BD uveoretinitis in Japan since 2007, and definite promising effects have been noticed. On the other hand, the drug can possibly induce infectious complications of surgical treatment because of the systemic suppression of TNF- $\alpha$  [1, 2, 6–8].

This study presents 5 cases of BD with cataract and glaucoma surgeries under infliximab treatment.

## Case Reports

Seven eyes of 5 patients with BD, who underwent intraocular surgery while under systemic infliximab therapy at Yokohama City University Hospital from 2007 to 2009, were included in the study. Patient characteristics are summarized in [table 1](#). All patients were men, and the mean age at the time of surgery was 44.2 (30–70) years. Four eyes underwent phacoemulsification, while trabeculectomy was performed on the remaining 3 eyes. The mean duration since the onset of ocular symptoms was 110 (34–180 months). Before infliximab was administered, all patients were systemically given colchicine, cyclosporine, and other immunosuppressive agents. However, control of the ocular attacks was difficult with the medicine administered, and the patients frequently experienced active ocular attacks. Fortunately, infliximab could suppress the severe ocular attacks in all patients. Infliximab therapy was administered at 5 mg/kg at 0, 2, and 6 weeks; after that, the infusion was administered every 8 weeks, except for patients b and e. Minor ocular attacks still occurred; thus, the infusion interval was decreased to every 6 weeks, which resulted in control of attacks. During the postoperative period, ocular attacks were observed in patients a and b; however, every attack was controlled with temporary medicines. All patients who underwent phacoemulsification recovered preoperative visual acuity status. Moreover, ocular tension was well controlled in all patients who had trabeculectomy. No infections were observed in any of the patients after surgery.

## Discussion

Ever since infliximab has been available for the treatment of BD, its excellent efficacy against ocular attacks of BD has been reported [1–3, 6]. However, in cases where surgical treatment is considered, it is possible that infliximab might induce infections during the perioperative period because it suppresses cytokines for improved postoperative wound healing [1, 2, 7]. Surgical treatment of rheumatoid arthritis under infliximab therapy is recommended to be performed 4 weeks after infliximab infusion in order to assure a minimum systemic concentration of infliximab [1, 2, 7]. Previously, some patients with BD who underwent cataract surgery under systemic infliximab treatment were reported in Japan [1, 2]. The reports followed the rheumatic guidelines, and no remarkable complications were described in any cases. The patients recovered their preoperative visual acuity status.

In the field of orthopedic surgery, it was previously reported that infliximab did not increase the risk of either infections or surgical complications occurring in patients with rheumatoid arthritis within 1 year of orthopedic surgery [7]. Furthermore, in the same field, previously reported complications were localized infections, and infliximab is considered to be relatively safer than the other anti-TNF- $\alpha$  drugs in the perioperative period. In our search of the literature, we could not find any report of a correlation between endophthalmitis or toxic anterior segment syndrome (TASS) and systemic immunosuppressive treatment. The localized infection-like wound complications could be a concern in the field of orthopedic surgery as well as ophthalmology.

In our study, both glaucoma and cataract cases were encountered. Perioperative infection was more frequent among the glaucoma than cataract cases in the previous report [5]. However, there were no complications in all our glaucoma cases. Ocular inflammation after surgery could be controlled with medicine as well. Based on our limited sampling of infliximab-treated patients with BD, infliximab has the potential not to complicate any subsequent surgery, not only for cataract but also for glaucoma. To reach a clearer conclusion, a greater number of subjects is necessary as well as a comparison with cases without infliximab treatment. Although further investigation is needed, we suggest a possible efficacy of infliximab in intraocular surgeries of BD.

## Disclosure Statement

The authors declare no conflict of interest.

**Table 1.** Profile of patients

Case	Age at surgery (years)	Sex	Type	Surgery	Duration since onset	Attack after surgery	Medicine besides infliximab
a	30	Male	Incomplete	R) Lectomy L) Phaco	34 41	None Minor attack in the left eye after 8 months	Topical Topical
Presurgery: RV = 20/600 (n.c.), LV = 20/1,000 (n.c.) → Postsurgery: RV = 20/600 (n.c.), LV = 20/200 (20/30)							
b	70	Male	Incomplete	R) Phaco	58	Major attack in the left eye and both eyes after 9 and 16 months, respectively	Topical and systemic short-term administration and subtenon injection of steroid
Presurgery: RV = 20/600 (n.c.), LV = 20/200 → Postsurgery: RV = 20/200, LV = 20/200							
c	44	Male	Incomplete	R) Lectomy	180	None	Topical
Presurgery: RV = 20/600 (n.c.), LV = 20/200 → Postsurgery: RV = 20/200, LV = 20/200							
d	39	Male	Incomplete	R) Phaco L) Phaco	155 157	None None	Topical Topical
Presurgery: RV = HM (n.c.), LV = HM (n.c.) → Postsurgery: RV = 20/600 (n.c.), LV = (20/200)							
e	38	Male	Incomplete	R) Lectomy	123	None	Topical
Presurgery: RV = 20/1,000 (n.c.), LV = NLP → Postsurgery: RV = 20/1,000 (n.c.), LV = NLP							

Lectomy = trabeculectomy; Phaco = phacoemulsification; RV = right vision; LV = left vision; HM = hand motion; n.c. = non corrigible; NLP = no light perception.

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