

Japanese Survey of Prophylactic Intracameral Moxifloxacin Injection

Shin-ichi Sasaki, MD

Kazuki Matsuura, MD

Yoshitsugu Inoue, MD

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Background

- *Postoperative endophthalmitis is a concern for surgeons because the results can be devastating.*
- *Intracameral antibiotic administration at the final stage of a surgical procedure has recently been reported to be effective in many cases.*
- *59.0% of ESCRS members performed intracameral administration according to a 2012 ESCRS report.*

Purpose

- *To report the rates of postcataract surgery endophthalmitis and the incidence of complications following intracameral moxifloxacin (MFLX) injection.*

Why moxifloxacin?

- *Commercial MFLX (Vigamox[®]) is preservative free and can be diluted and used for intracameral administration.*
- *MFLX is concentration dependent and requires approximately 2 hours to be effective.*
- *Antibacterial spectrum of MFLX is wide, MFLX is effective against Enterococcus faecalis, whereas cefuroxime is not effective.*

Methods

- *Twenty-one clinics in institutions that administered intracameral MFLX injection in Japan was retrospectively surveyed.*
- *The number of surgeries and endophthalmitis cases in the past 4 years before and after the introduction of intracameral MFLX was evaluated.*
- *The survey was performed by mail or interview in February 2013.*

Results

- *All institutions employed total replacement of aqueous chamber by MFLX solution rather than small volume injection. In 13 of 19 institutions, bag and chamber flushing technique was carried out.*
- *At three institutions, 50–100 $\mu\text{g}/\text{mL}$ MFLX; at nine institutions, 100–300 $\mu\text{g}/\text{mL}$ MFLX; and at nine institutions, 500 $\mu\text{g}/\text{mL}$ MFLX was administered.*
- *The highest concentration (500 $\mu\text{g}/\text{mL}$) was administered in 20,020 cases.*

Results 2

Table 1. Incidence of postoperative endophthalmitis before and after MFLX administration

Prophylaxis	Cataract surgeries (n)	Endophthalmitis cases (n)	Infection rate
Without IC MFLX	17485	8	1/2186 (0.046%)
With IC MFLX	23501	3	1/7834 (0.013%)

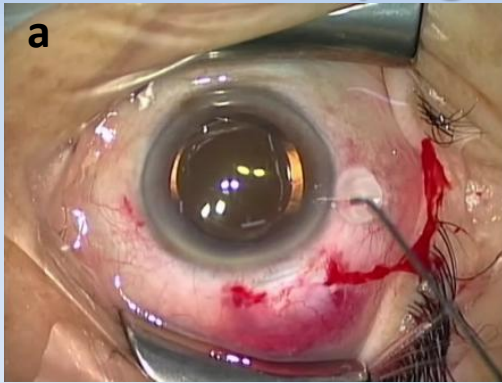
IC: intracameral, MFLX: moxifloxacin

Matsuura K., 2014, J Cat Refract Surg., in press.

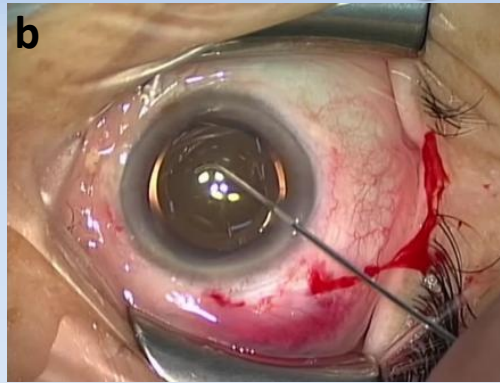
- ***No difference was observed in corneal endothelial cell loss between the group with intracameral moxifloxacin administration (555 of 18,794 cases [3.1%]) and the group without intracameral moxifloxacin administration (222 of 15,958 cases [3.6%])***
- ***Among >23,000 cases MFLX administration ≤ 500 $\mu\text{g}/\text{mL}$ did not result in any severe complications, such as toxic anterior segment syndrome or corneal endothelial cell loss.***

Intracameral MFLX injection

(Bag and chamber flushing technique)



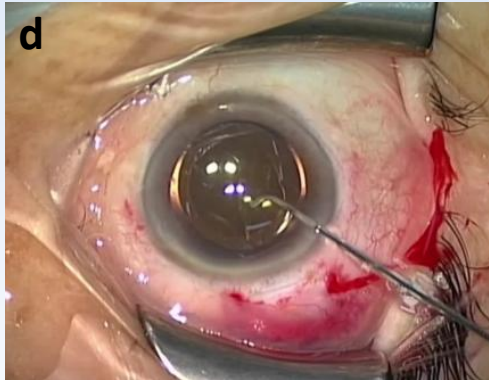
A cannula through which the antibiotic solution flowed was inserted through a side port.



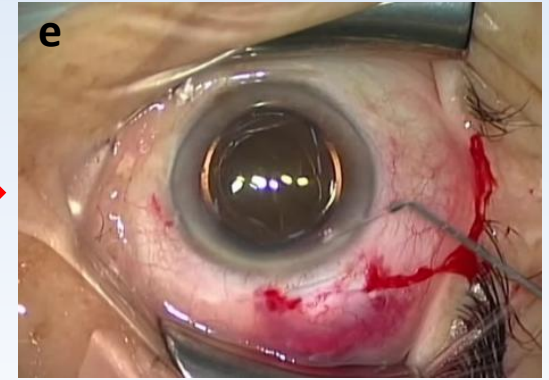
The anterior chamber was flushed for 10 to 20 seconds.



Intentionally irrigated the area behind the intraocular lens (IOL).



The needle was removed while the solution flow was maintained.



Advantage of BC flushing technique

- *compared with a small-volume injection, the concentration is stable.*
- *90% or more of the aqueous humor can be diluted and flushed at the final stage of the surgery*
- *Because MFLX can be diluted and used directly, complicated preparation procedures are not necessary.*

Conclusion

- *Intracameral MFLX (50–500 $\mu\text{g}/\text{mL}$) administration decreased the risk of endophthalmitis by 3.6 fold without any adverse effects.*