# Long-Term Outcomes of Sutureless Intrascleral Fixation of Intraocular Lens with Pars Plana Vitrectomy in Patients with Posterior or Panuveitis

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53rd Annual Scientific Meeting - The Retina Society 2020 VR
August 25, 2020

# Financial Disclosure

- Consultant: Allergan, Santen, Genetech, Bausch & Lomb, EyePoint Pharmaceuticals

- Speaker: Allergan, AbbVie, Genetech

# Summary

- This study describes the long-term outcomes of sutureless intrascleral intraocular lens fixation with pars plana vitrectomy in eyes with a history of posterior or panuveitis.
- Long-term visual improvement, infrequent complications, and a low rate of uveitis reactivation were seen.
- Given the extensive variability of uveitis patients, we suggest that eyes with a history of significant inflammation be monitored closely after surgery.

# Introduction

- Sutureless intrascleral fixation of intraocular lens (SIS IOL) with pars plana vitrectomy (PPV) has been shown to have favorable anatomical and visual outcomes.
- Patients with uveitis have a higher rate of IOL dislocation following routine cataract surgery.
- For patients with a history of uveitis, the literature is limited for long-term outcomes of SIS IOL with PPV.

# Purpose

- To report the long-term outcomes of sutureless intrascleral fixation of secondary intraocular lens (SIS IOL) with pars plana vitrectomy (PPV) in eyes with posterior or panuveitis.

# Method

- Retrospective, consecutive case series from multiple surgeons of a single center performing scleral fixation of intraocular lenses (IOLs) in uveitis patients from October 1, 2013 to September 31, 2018.

- Primary outcomes measures included post-operative IOL status and reactivation of uveitis at last follow up.

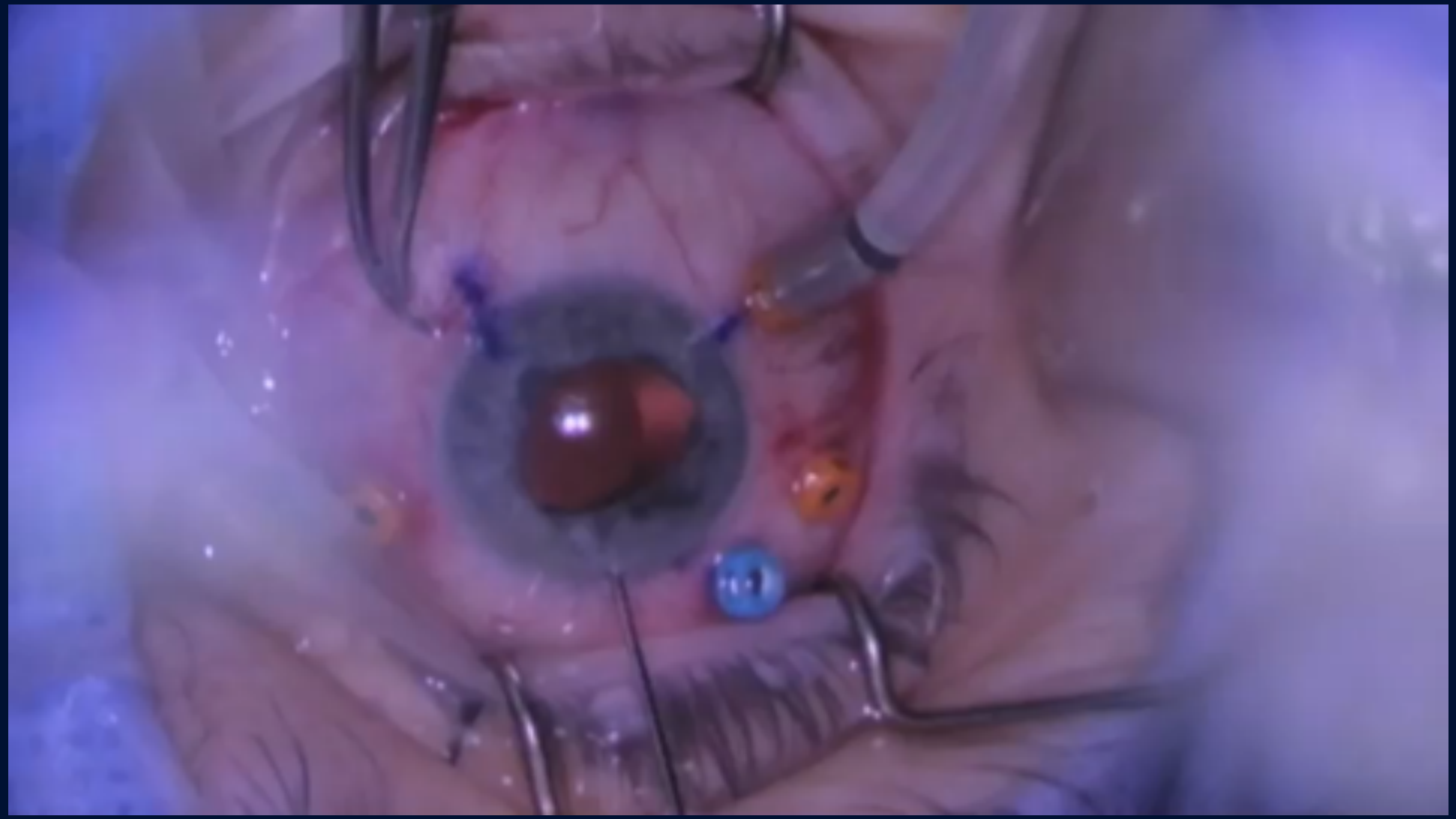
- Secondary outcome measures included difference in outcomes with peri-operative steroid and/or pre-operative immunosuppressive therapy.

# Methods

- *Inclusion criteria* included eyes that underwent SIS IOL with PPV, were previously diagnosed with posterior or panuveitis, and had at least 3 months of inactivity of uveitis prior to surgery.

- *Exclusion criteria* were eyes diagnosed with anterior uveitis or those that had follow up of less than 1 year.

- Clinic notes, imaging, and operative reports were reviewed, and age, sex, laterality, visual acuity (VA), refraction, medication use, examination and imaging findings, complications, and surgical technique were collected.



# Results

**Table 1: Baseline Characteristics of 12 Eyes with Posterior or Panuveitis that Underwent Sutureless Intrascleral Fixation of Intraocular Lens with Pars Plana Vitrectomy**

| | |
|---|---|
| Age, mean ± SD | 31.7 ± 21.0 years |
| Gender (%) | |
| Female | 10 (83) |
| Male | 2 (17) |
| Type of Uveitis (%) | |
| Panuveitis | 7 (58) |
| Posterior Uveitis | 5 (42) |
| Etiology of Uveitis (%) | |
| Idiopathic | 6 (50) |
| Rheumatoid arthritis | 4 (33) |
| Sarcoidosis | 2 (17) |
| Surgical Indication (%) | |
| Dislocated intraocular lens | 8 (50) |
| Aphakia | 3 (25) |
| Retained lens fragments | 2 (17) |
| Dislocated crystalline lens | 1 (8) |
| Pre-operative logMAR, mean ± SD | 1.23 ± 0.72 |
| Pre-operative Immunosuppressive Therapy Use (%) | 6 (50) |
| Peri-operative Oral Steroid Use (%) | 6 (50) |
| Mean Follow Up Time, years (range) | 3.1 (1.0 to 6.3) |

SD = standard deviation

# Results

- Mean follow up time was 3.1 years (range 1.0 - 6.3 years).
- Post-operative IOL dislocation occurred in 2 eyes (of 12, 17%) at follow up times of 5.5 and 6.0 months.
- Reactivation of uveitis occurred in 4 eyes (33%) at mean follow up of 19.4±6.3 months in 2 eyes with pre-operative immunosuppression and 2 eyes with peri-operative steroids.

# Results

**Table 2: Post-operative Findings at Last Follow Up of 12 Eyes with Posterior or Panuveitis that Underwent Sutureless Intrascleral Fixation of Intraocular Lens with Pars Plana Vitrectomy**

| | LogMAR VA | Spherical Equivalent (D) | Eyes with IOL Dislocation (%) | Eyes with Reactivation of Uveitis (%) |
|---|---|---|---|---|
| **All Patients** (n=12) | 0.58±0.34 | -0.92±1.84 | 2 (17) | 4 (33) |
| ***Peri-operative Steroids Use*** | | | | |
| Yes (n=6) | 0.53±0.38 | -0.40±1.82 | 2 (33) | 2 (33) |
| No (n=6) | 0.60±0.34 | -1.44±1.86 | 0 (0) | 2 (33) |
| | p=0.81 | p=0.35 | | |
| ***Pre-operative IMT Use*** | | | | |
| Yes (n=6) | 0.58±0.34 | -0.85±2.26 | 2 (33) | 2 (33) |
| No (n=6) | 0.57±0.38 | -0.98±1.53 | 0 (0) | 2 (33) |
| | p=0.94 | p=0.91 | | |

*VA = visual acuity*
*IOL = intraocular lens*
*n = number of eyes*
*D = diopters*
*IMT = immunomodulatory therapy*

# Limitations and Strengths

- Limitations
  - Retrospective nature
  - No standardization of peri-operative steroid use and treatment protocols for reactivation of uveitis
  - Differences in surgical technique among the surgeons, such as the gauge of cannulas used for vitrectomy and IOL haptic externalization
- Strengths
  - Sample size in comparison to prior studies
  - Length of follow up
  - Inclusion of only eyes with posterior or panuveitis

# Conclusion

- Long-term outcomes of SIS IOL with PPV in eyes with posterior or panuveitis revealed infrequent complications.
- Statistically significant visual improvement was seen in this cohort.
- There was a low rate of uveitis reactivation and its occurrence was well beyond what one would expect from the timing of the surgical procedure.