SOUTHERN EYE CONGRESS 2022

MY TOP 10 PEARLS TO MORE CONSISTENTLY EXECUTE THE YAMANE TECHNIQUE

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Clinical Assistant Professor of Ophthalmology
Medical College of Georgia

SOUTHERN EYE CONGRESS 2022

FINANCIAL DISCLOSURES
Corza/Katena (consultant)
Tarsus (consultant)
Ocuphire (consultant)

WHY MODIFY THE TECHNIQUE???

- SHOW OF HANDS, WHO HAS EXPERIENCE WITH THE YAMANE TECHNIQUE?
- SOME SURGEONS PERFORM THE TECHNIQUE AS DESCRIBED BY SHIN YAMANE
- WHILE OTHERS HAVE DEVELOPED THEIR OWN MODIFICATIONS (INCLUDING ME)
- BUT ALL WOULD PROBABLY AGREE THAT THERE ARE SOME TECHNICAL CHALLENGES AND NUANCES TO THE TECHNIQUE.


BRAVO
TOP CHEF


BRAVO
TOP CHEF


PRO VS. AMATEURS

WHY MODIFY THE TECHNIQUE???

- I DID A SEARCH ON YOUTUBE "YAMANE TECHNIQUE" AND THESE ARE THE FIRST 10 VIDEOS THAT POPPED UP:
- DISCLAIMER: THE PURPOSE IS NOT TO CRITICIZE BUT TO ILLUSTRATE HOW AND WHY THESE MODIFICATIONS CAN LEAD TO PROBLEMS

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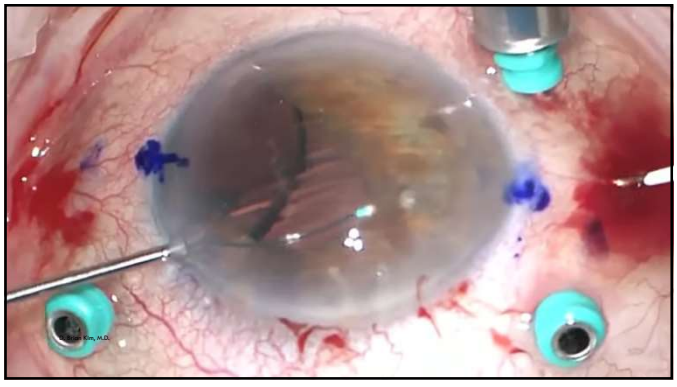

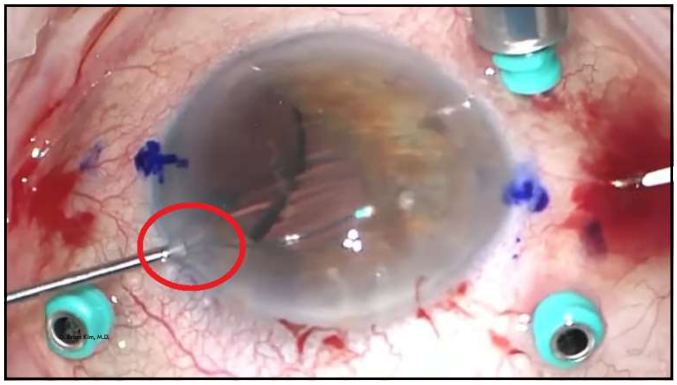
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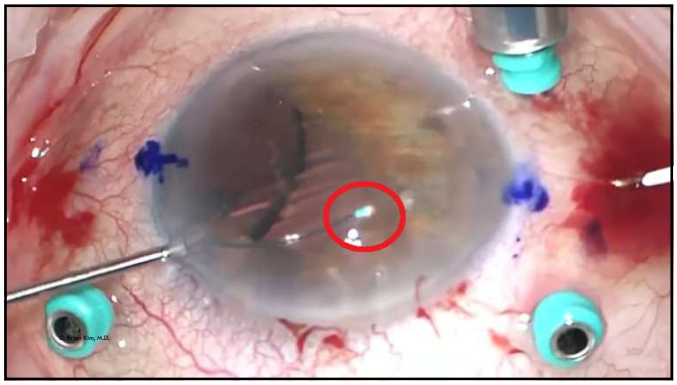
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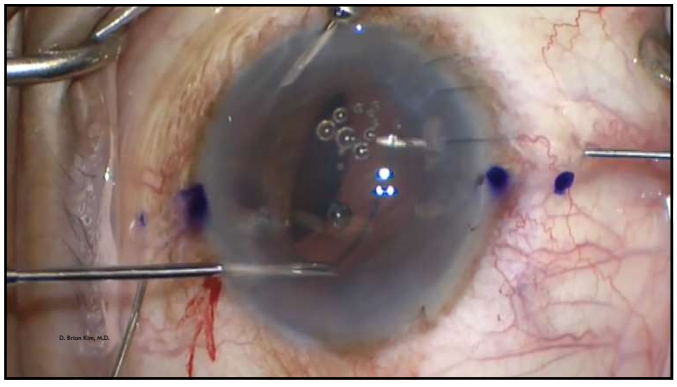
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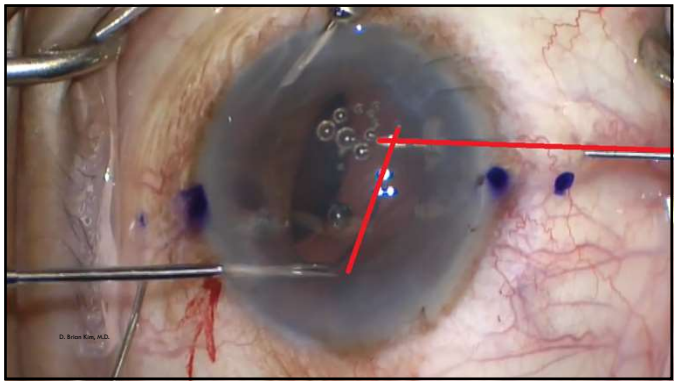
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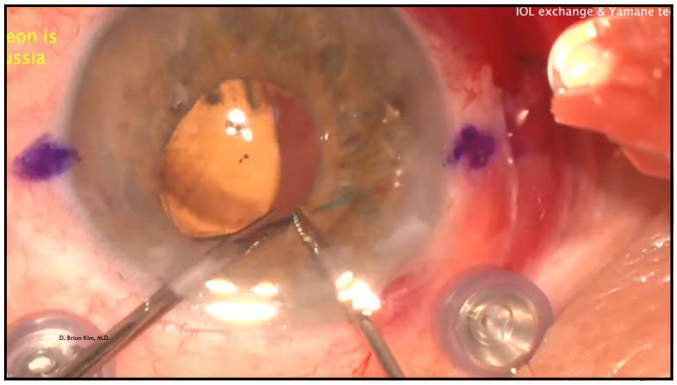
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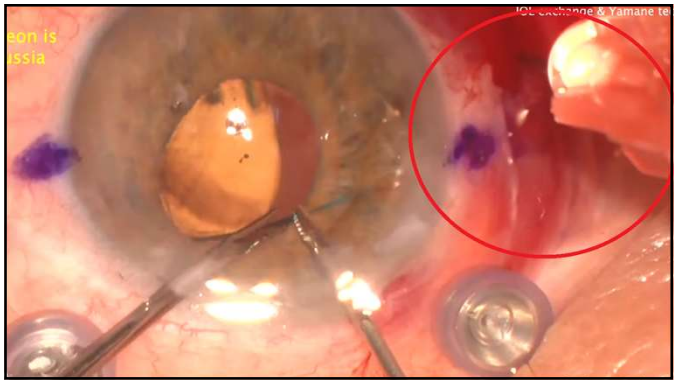
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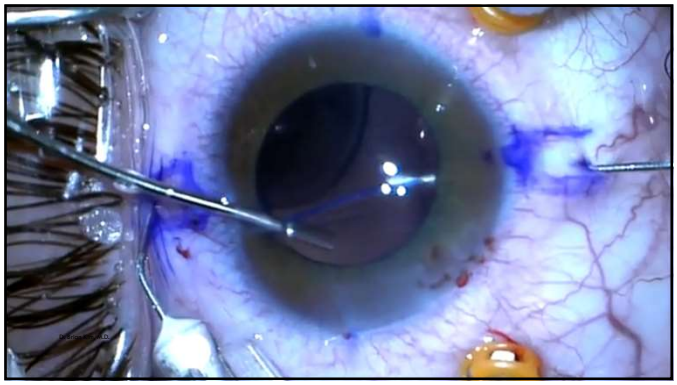

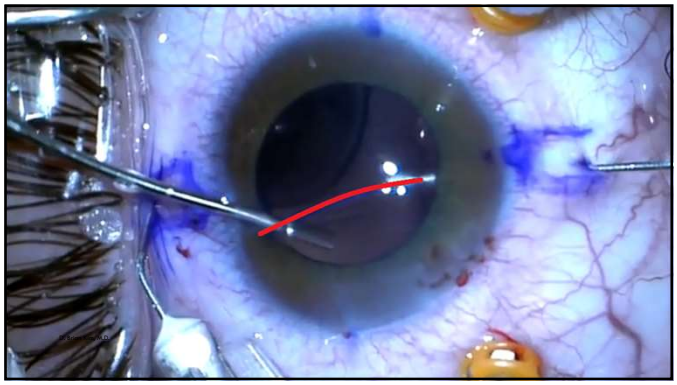

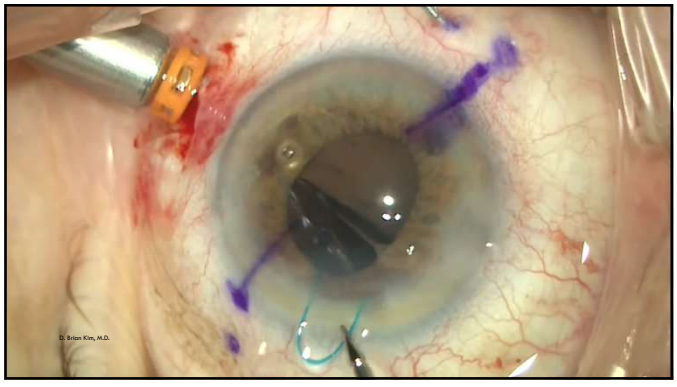
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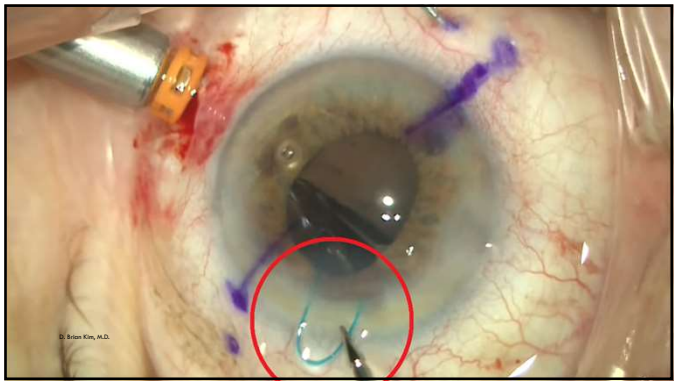
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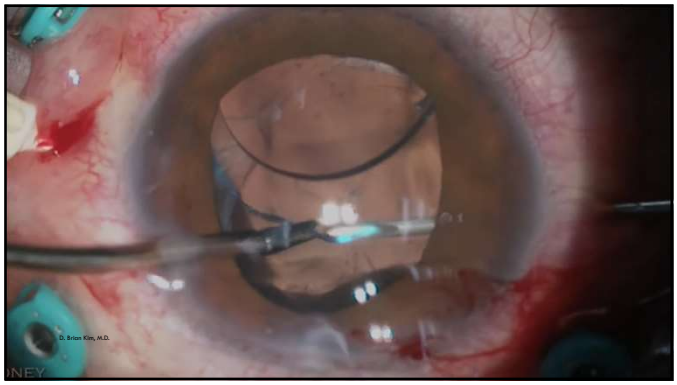
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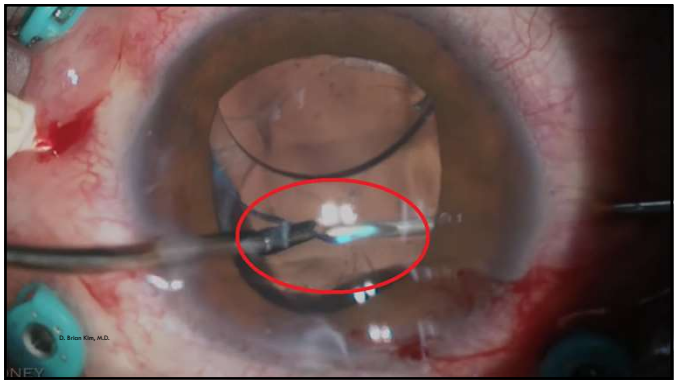
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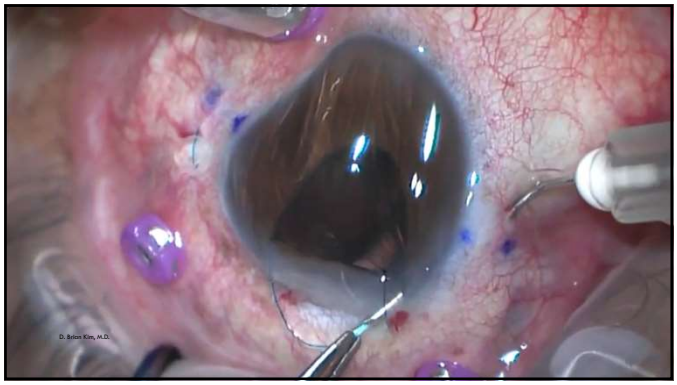
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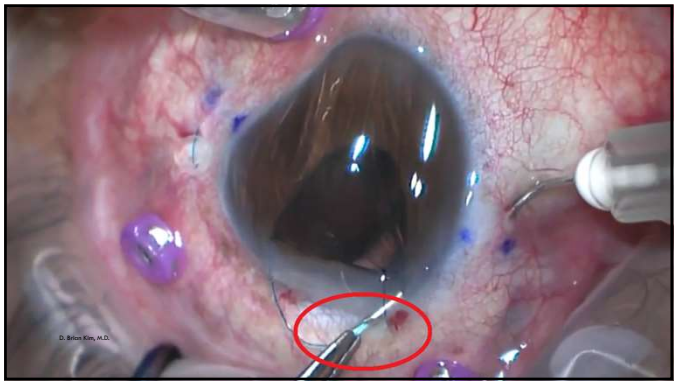
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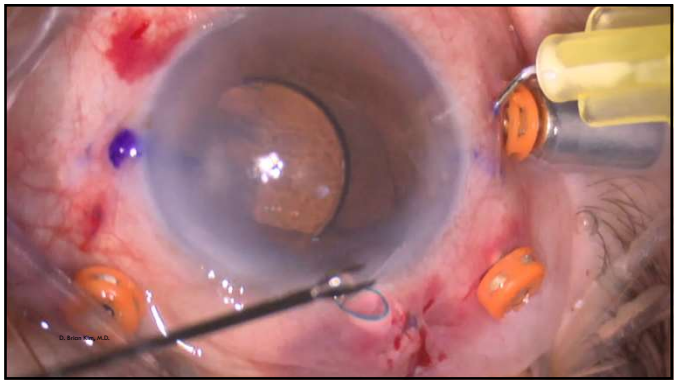
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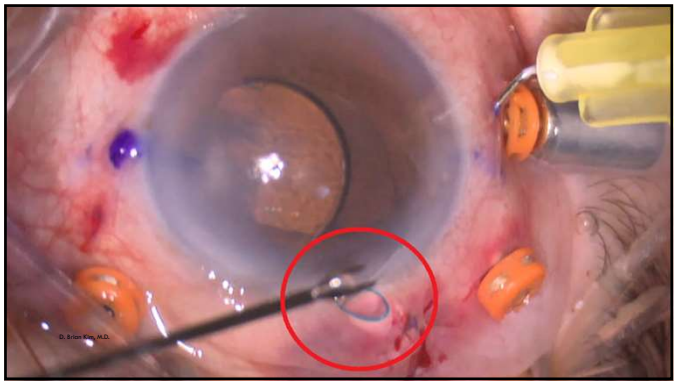
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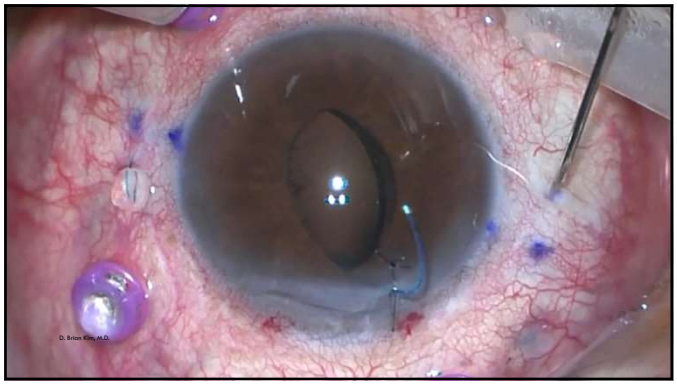
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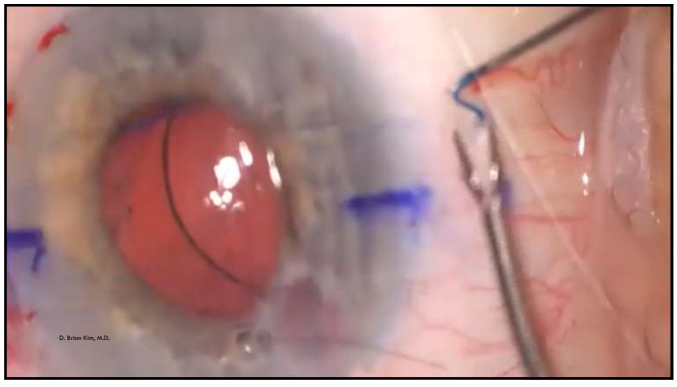
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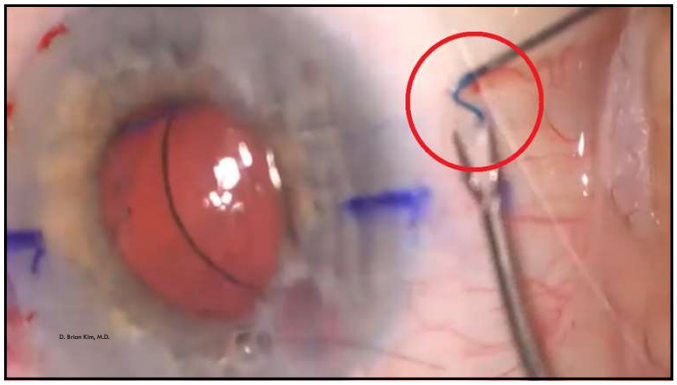
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MY FIRST FIVE CASES
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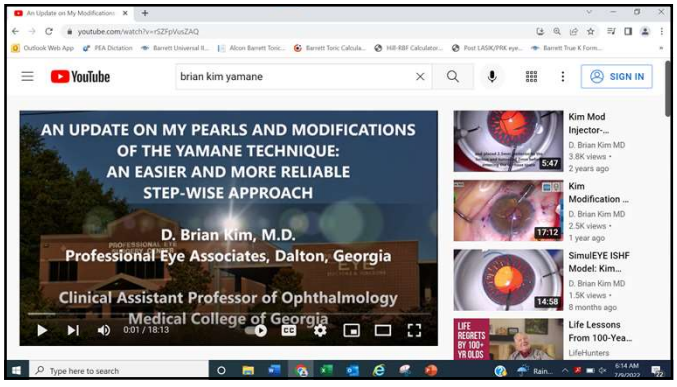
youtube.com/watch?v=rSZFpVusZAQ
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AN UPDATE ON MY PEARLS AND MODIFICATIONS OF THE YAMANE TECHNIQUE: AN EASIER AND MORE RELIABLE STEP-WISE APPROACH
D. Brian Kim, M.D.
Professional Eye Associates, Dalton, Georgia
Clinical Assistant Professor of Ophthalmology
Medical College of Georgia
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D. Brian Kim MD
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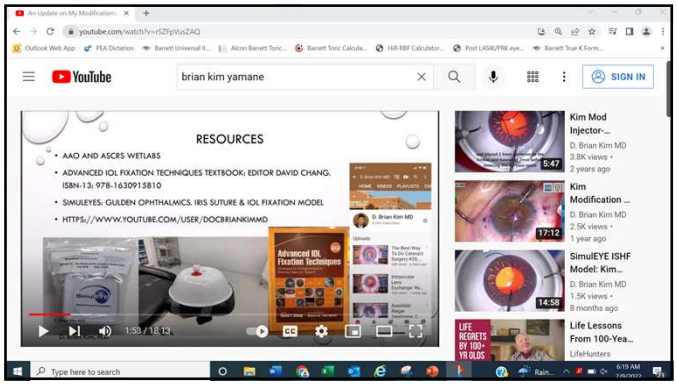
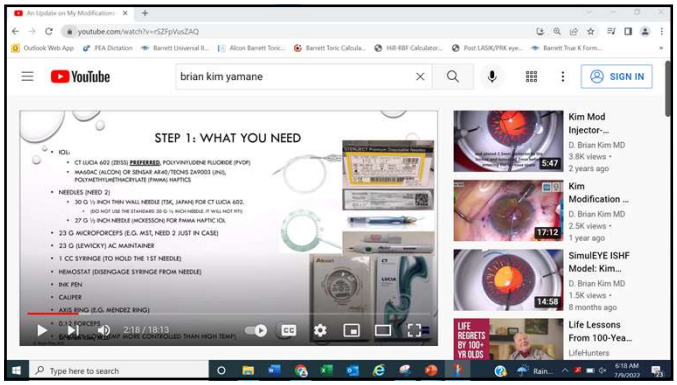
LIFE REGRETS OF 100+ YR OLDS
Life Lessons From 100-Yea...
LifeHunters





WHY MODIFY THE TECHNIQUE???

- OBJECTIVE:
  - EXECUTE THE PROCEDURE WITH MORE CONSISTENCY TO REDUCE COMPLICATIONS AND TO IMPROVE REFRACTIVE OUTCOMES
  - PERFORM A MORE GENTLE TECHNIQUE ON THE HAPTICS TO LIMIT FORCEFUL MANIPULATION AND REDUCE RISK OF DAMAGE TO THE HAPTICS

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#1: CONJUNCTIVAL MARKING

- 2017
  - ORIGINAL TECHNIQUE: THE NEEDLE IS PLACED 2MM POSTERIOR TO LIMBUS.
  - COMPLICATION: POTENTIAL OPTIC CAPTURE OR IRIS-IOL CHAFE.
- NOW 2022 (AND SINCE 2018)
  - I PLACE THE NEEDLE **2.5MM POSTERIOR** TO THE LIMBUS **NOT 2.0MM**
  - I CHOOSE A **-1.00D IOL POWER** FOR A PLANO REFRACTIVE TARGET
  - I HAVE NOT HAD OPTIC CAPTURE SINCE MAKING THIS CHANGE.

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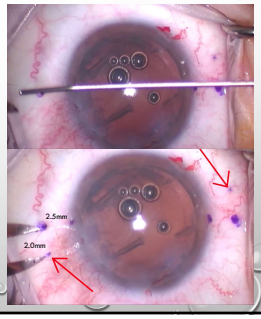
#1: CONJUNCTIVAL MARKING

- PLACE 2 ROUND MARKS AT THE LIMBUS, 180 DEGREES APART (**CANNULA**, AXIS RING, ETC)
- **PLACE ANOTHER MARK 2.5MM POSTERIOR TO THE LIMBUS OF EACH MARK**
- PLACE ANOTHER MARK 2MM AT RIGHT ANGLE
- THE LEFT MARK IS BACKWARDS "7" CONFIGURATION
- THE RIGHT MARK IS BACKWARDS "L" CONFIGURATION
- THE NEEDLE ENTERS THE SCLERA AT THE RED ARROW.
- **THIS STEP ENSURES GOOD IOL CENTRATION**



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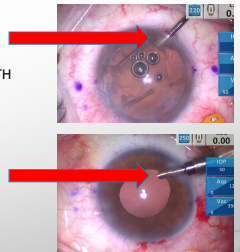
#2: ANTERIOR CHAMBER MAINTAINER

- 2017
  - 23G AC MAINTAINER: NOT ENOUGH INFUSION WHICH CAN CAUSE THE GLOBE TO COLLAPSE WITH MANIPULATION
- NOW 2022
  - 20G AC MAINTAINER (KATENA #K7-6713): STRONGER INFUSION, BETTER CHAMBER STABILITY, FIRMER GLOBE FOR MORE CONTROLLED MANIPULATION.



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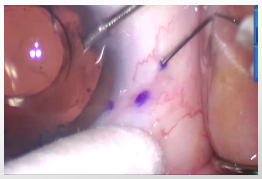
#3: SCLERAL NEEDLE PLACEMENT

- 2017
  - HELD THE CONJUNCTIVA WITH A COTTON TIP
  - PROBLEM IS THE CONJUNCTIVA CAN MOVE!
  - BUT I REALIZED IF THE CONJUNCTIVA MOVES, THE NEEDLE PLACEMENT MAY NOT REFLECT THE INTENDED SCLERAL PLACEMENT!
  - COMPLICATION: IOL TILT OR DECENTRATION



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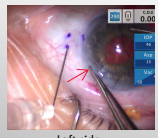
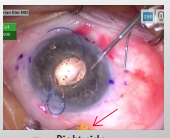
#3: SCLERAL NEEDLE PLACEMENT

- NOW 2022
  - FIRM GLOBE FIXATION WITH FORCEPS TO MAINTAIN THE CONJUNCTIVA IN THE NEUTRAL POSITION TO BETTER ALIGN WITH INTENDED SCLERAL NEEDLE PLACEMENT.
  - ACHIEVE A CONSISTENT SCLERAL TUNNEL FOR A STABLE HAPTIC SHELF.



Left-side:
Forceps Holds Incision



Right-side:
Forceps Holds Trocar

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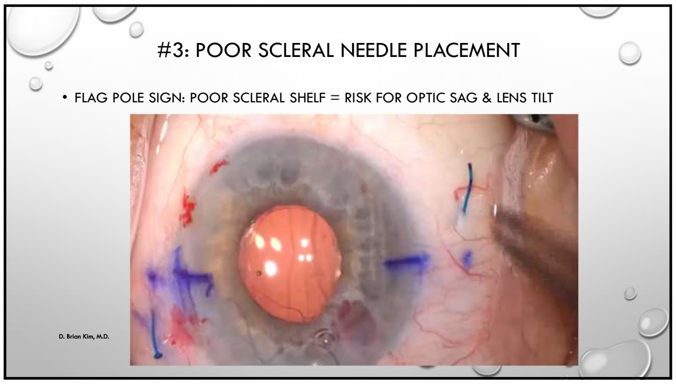
#3: POOR SCLERAL NEEDLE PLACEMENT
• FLAG POLE SIGN: POOR SCLERAL SHELF = RISK FOR OPTIC SAG & LENS TILT
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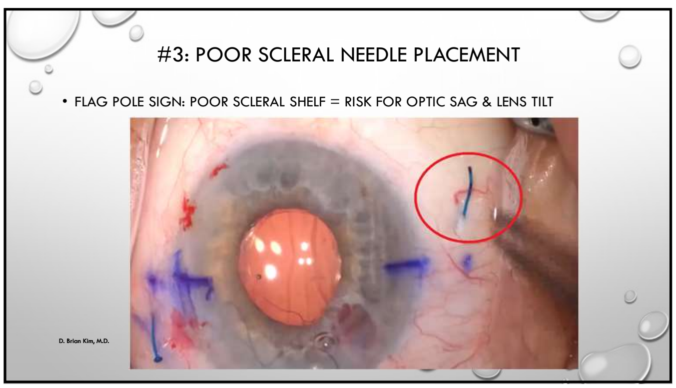
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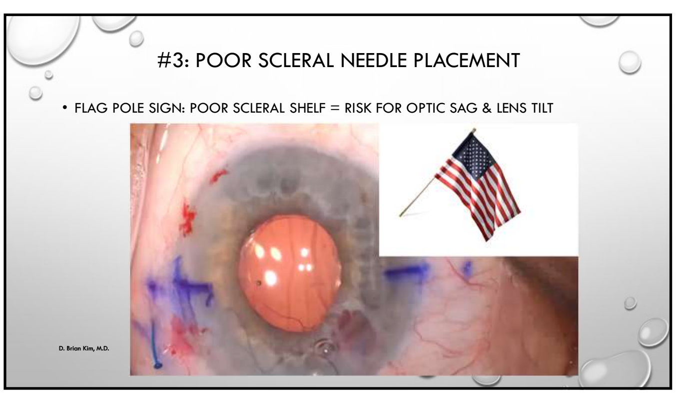
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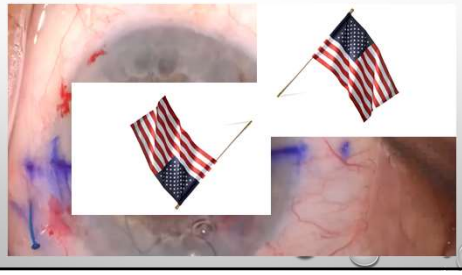

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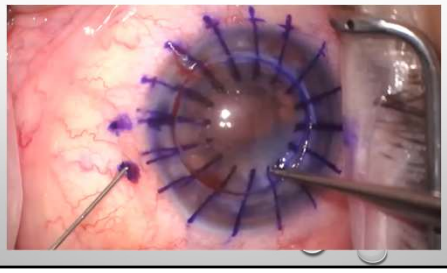
#3: POOR SCLERAL NEEDLE PLACEMENT

- ANGLE IS WRONG & NO SCLERAL TUNNEL = INSUFFICIENT SCLERAL SHELF



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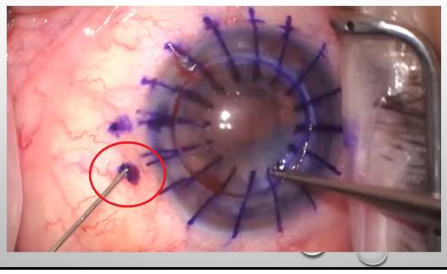

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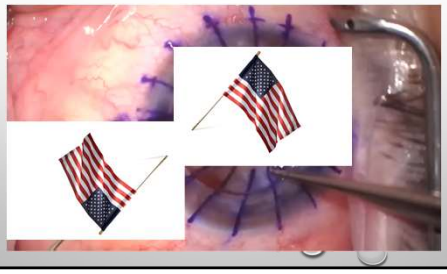

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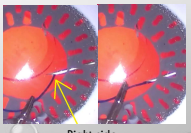
#4: ANGLE AND DIRECTION OF THE NEEDLE BEVEL

- 2017 AND NOW 2022 (NO CHANGE)
  - THE HAPTIC MUST FACE THE BEVEL OF THE NEEDLE TO FACILITATE DOCKING.
  - THE LEFT-SIDE NEEDLE BEVEL FACES AWAY AND THE RIGHT-SIDE FACING TOWARD YOU, BUT THE BEVEL ALWAYS FACES THE APPROACH OF THE HAPTIC.

Left-side:
Bevel Away from You

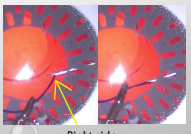


Right-side:
Bevel Toward You

#4: ANGLE AND DIRECTION OF THE NEEDLE BEVEL

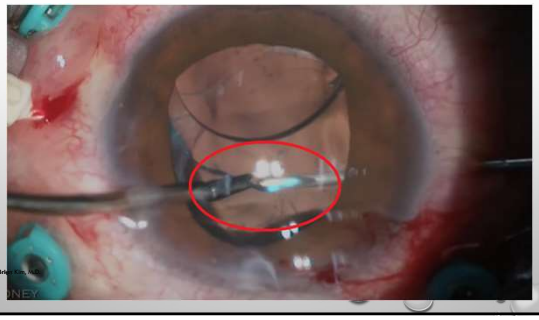
- DOCKING ENABLES:
  - PLACEMENT OF THE HAPTIC ON THE NEEDLE PLATFORM
  - FLATTENING OF THE HAPTIC ON THE BEVEL TO EASILY ALIGN IT WITH THE NEEDLE
  - SMOOTHER AND EASIER CANNULATION OF THE HAPTIC WITHIN THE NEEDLE

Left-side:
Bevel Away from You



Right-side:
Bevel Toward You

PREVENTS CRIMPING OF THE HAPTIC



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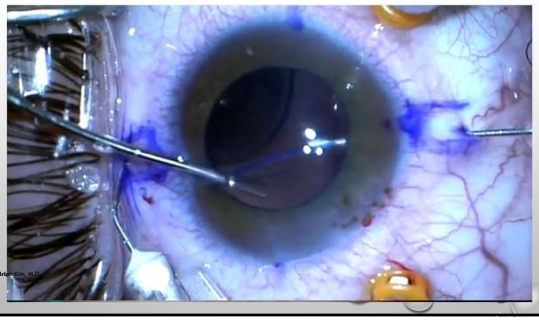
DON'T HAVE TO BEND THE HAPTIC TO CANNULATE



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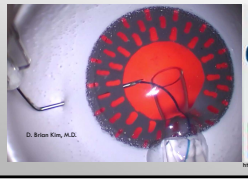
#5: WHICH HAPTIC TO CANNULATE FIRST?

- 2017
  - I FIRST DESCRIBED INJECTOR-ASSISTED-HAPTIC FIXATION WHICH ENABLES AN EASY 1 STEP CANNULATION OF THE LEADING HAPTIC WITHIN THE LEFT-SIDE NEEDLE
  - PROBLEM: THIS DOES NOT ADDRESS THE MORE CHALLENGING TRAILING HAPTIC!



https://crstodayeurope.com/articles/2017-nov/dec/the-next-big-thing-in-icter-of-haptic-fixation/

THE PROBLEM WITH THE ORIGINAL YAMANE TECHNIQUE: "TUG-OF-WAR EFFECT" WITH THE TRAILING HAPTIC:

https://www.kidspot.com.au/things-to-do/activity-articles/tug-of-war/news-story/c757e29eeb3bfd4334489ee410b731cf

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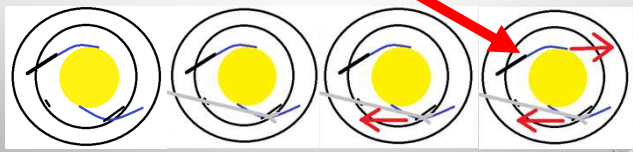
#5: WHY IS THE TRAILING HAPTIC A PROBLEM???

- ONCE THE LEADING HAPTIC HAS BEEN CANNULATED WITHIN THE LEFT-SIDE NEEDLE, AS YOU ATTEMPT TO CANNULATE THE RIGHT-SIDE NEEDLE WITH THE TRAILING HAPTIC, THE LEADING HAPTIC-NEEDLE COMPLEX RESISTS THE ALIGNING OF THE TRAILING HAPTIC TO CANNULATE THE RIGHT-SIDE NEEDLE.



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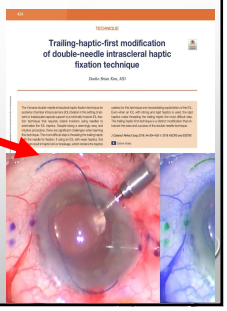
#5: WHICH HAPTIC TO CANNULATE FIRST?

- TO OVERCOME THIS PROBLEM, IN 2018 I PUBLISHED THE TRAILING-HAPTIC FIRST MODIFICATION IN JCRS
  - EXTERNALIZE THE LEADING HAPTIC THROUGH A CONTRALATERAL LIMBAL INCISION
    - SECURES THE IOL FROM FALLING
    - THE OPTIC IS POSITIONED AWAY = IMPROVES ACCESS TO THE TRAILING HAPTIC & RIGHT-SIDE NEEDLE
    - LESS OF A TUG-OF-WAR EFFECT = MORE CONTROLLED & EASIER CANNULATION OF THE TRAILING HAPTIC
    - NO FORCEFUL MANIPULATION OF THE HAPTIC



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CT LUCIA OR BUST?

- 2017
  - I ONLY RECOMMENDED THE CT LUCIA 602 IOL BECAUSE I ONCE TRIED AN IOL WITH PMMA HAPTICS AND IT BROKE

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CT LUCIA OR BUST?

- 2017
  - I ONLY RECOMMENDED THE CT LUCIA 602 IOL BECAUSE I ONCE TRIED AN IOL WITH PMMA HAPTICS AND IT BROKE
- AND AS YOU SAW ON THE YOUTUBE EXAMPLES, SOME SURGEONS HAVE DEVELOPED CREATIVE WAYS TO CONTORT THE PVDF HAPTICS
  - BUT I THINK PMMA HAPTICS WOULD LIKELY BREAK OR BE DAMAGED
  - IF YOU'VE EVER HANDLED THE CT LUCIA LENS, YOU CAN BEND AND ALTER THE HAPTICS! THEY'RE NOT INDESTRUCTIBLE SO I WORRY THAT USING THESE TECHNIQUES CAN LEAD TO MORE PROBLEMS

D. Brian Kim, M.D.

CT LUCIA OR BUST?

- 2021
  - THE SHORTAGE OF CT LUCIA LENSES FORCED ME TO CRITIQUE MY TECHNIQUE
  - WITH PMMA HAPTIC IOLS, PULLING THE LEADING HAPTIC OUT WITH MICROFORCEPS CAN DAMAGE THE TIP OF THE HAPTIC & INTERFERE WITH CANNULATING THE NEEDLE.

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#6: 25G NEEDLE DOCKING OF LEADING HAPTIC

- 2021
  - THE SHORTAGE OF CT LUCIA LENSES FORCED ME TO CRITIQUE MY TECHNIQUE
  - WITH PMMA HAPTIC IOLS, PULLING THE LEADING HAPTIC OUT WITH MICROFORCEPS CAN DAMAGE THE TIP OF THE HAPTIC & INTERFERE WITH CANNULATING THE NEEDLE.
- NOW 2022 PREFERRED TECHNIQUE
  - 25G NEEDLE DOCKING TECHNIQUE TO EXTERNALIZE THE LEADING HAPTIC.
    - NO DAMAGE TO THE TIP OF THE HAPTIC
    - I CAN CONFIDENTLY USE PMMA HAPTIC IOLS SUCH AS THE JNJ SENSAR AND TECNIS

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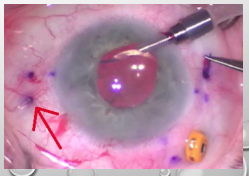
#7: SIMULTANEOUS VS SEQUENTIAL NEEDLE PULL OUT?

- 2017
  - I ALWAYS PERFORMED SEQUENTIAL PULL OUT OF THE NEEDLES BECAUSE OF FEAR THAT THE HAPTIC COULD SLIP BACK IN THE EYE.
  - BUT EVEN WITH SEQUENTIAL PULL OUT, IT COULD STILL HAPPEN.



#7: SIMULTANEOUS VS SEQUENTIAL NEEDLE PULL OUT?

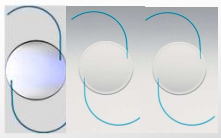
- NOW 2022
  - MY PREFERRED TECHNIQUE IS TO PULL THE HAPTICS OUT SIMULTANEOUSLY BUT JUST SHORT OF PULLING THE NEEDLES OUT COMPLETELY AND THEN SEQUENTIALLY CAUTERIZING THE HAPTIC TIPS.
    - THIS REDUCES RISK OF THE HAPTIC SLIPPING BACK IN THE EYE.
    - THIS REDUCES UNDUE TENSION ON THE OPTIC-HAPTIC JUNCTION.
    - **THE KEY IS TO BE READY WITH FORCEPS TO GRASP THE HAPTIC WHEN THE NEEDLE IS PULLED COMPLETELY OUT.**

#8: SURGICAL PERIPHERAL IRIDECTOMY?

- 2017 & NOW 2022
  - I STILL PERFORM A TEMPORAL SURGICAL PERIPHERAL IRIDECTOMY TO REDUCE THE RISK FOR OPTIC CAPTURE, IRIS-IOL CONTACT, AND REVERSE PUPILLARY BLOCK
  - VITRECTOR-ASSISTED PI: BETTER CONTROL OF SIZE AND PLACEMENT OF THE PI
  - SETTING:
    - CUT RATE: 30 CPM (FIXED)
    - IOP 50 (FIXED)
    - ASPIRATION FLOW RATE 0-12 (LINEAR CONTROL)
    - VACUUM 0-350 (LINEAR CONTROL)

#9: MY PREFERRED IOL?

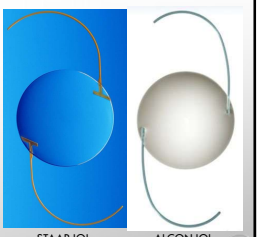
- HAPTIC DESIGN IS CRITICIAL
  - ENOUGH LENGTH
  - PROPER CURVATURE, I.E. CANNOT BE TOO CURVED
- HAPTIC MATERIAL: ZEISS CT LUCIA (PVDF):
- JNJ SENSAR/AR40, 3-PIECE TECNIS/ZA9003 (PMMA HAPTICS):
  - PMMA HAPTICS ARE DELICATE
  - WITH MY MODIFICATIONS, EASILY EXECUTED



CT LUCIA SENSAR TECNIS

#9: NOT MY PREFERRED IOL!

- STAAR IOLS (POLYIMIDE BROWN HAPTICS):
  - AFTER MANY YEARS, THESE HAPTICS WILL SHATTER AND CRUMBLE IN THE EYE!
- ALCON 3-PIECE IOLS (PMMA HAPTICS):
  - THE HAPTIC IS TOO SHORT AND TOO CURVED
  - PMMA HAPTICS CAN BREAK



STAAR IOL ALCON IOL

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#9: MY PREFERRED IOL

- NOW 2022: MY PREFERRED IOL IS THE SENSAR LENS.
  - THE SENSAR IS WIDELY AVAILABLE AND SURGEONS ARE FAMILIAR WITH IT
  - MY MODIFICATIONS ALLOW SAFE & EASY EXECUTION DESPITE PMMA HAPTICS
  - THE PMMA HAPTICS ARE ACTUALLY THICKER THAN THE CT LUCIA AND TEND TO STAY NICE AND SNUG WITHIN THE NEEDLES WHICH REDUCES THE RISK OF SLIPPING OUT

D. Brian Klein, M.D.

#10: EXCHANGE OR REPOSITION?

- 2017
  - IF THERE WAS A DISLOCATED IOL, MY DEFAULT WAS TO REMOVE AND REPLACE IT WITH A SCLERAL FIXATED CT LUCIA LENS.
- NOW 2022
  - UNDER THE RIGHT CIRCUMSTANCES (I.E. SUITABLE IOL WITHIN THE SULCUS OR EASILY FREED FROM THE CAPSULAR BAG), I HAVE BEEN ABLE TO PERFORM MY MODIFIED YAMANE TECHNIQUE WITH DISLOCATED IOLS IMPLANTED 20+ YEARS PRIOR.

D. Brian Klein, M.D.

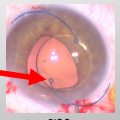
#10: EXCHANGE OR REPOSITION?

- ZEISS CT LUCIA (PVDF HAPTICS):
- JNJ SENSAR/AR40 (PMMA)
- JNJ 3-PIECE TECNIS/ZA9003, (PMMA):
- AMO REZOOM IOL (PMMA)
- **ALLERGAN SI30 IOL (POLYPROPYLENE HAPTICS CIRCLE HAPTIC/OPTIC JUNCTION):**
  - **THESE HAPTICS ARE STRONG LIKE PVDF**


CT LUCIA


SENSAR


REZOOM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CASE EXAMPLE

- 52 YO WF WITH A 3 WEEK HISTORY FOR SUDDEN VISION LOSS OS.
- S/P CEIOL OU WITH REZOOM MULTIFOCAL IOLS (2001 ELSEWHERE)
- UCDVA 20/20 OD, 20/100 OS
- MRX
  - OD: -0.25+0.25X129 20/20
  - OS: -3.00+3.00X159 20/70
- SHE PRESENTED WITH A SUNSETTING PCIOL OS WITH ONE HAPTIC IN THE AC
- SHE REQUESTS THAT I SAVE THE IOL BECAUSE IT GAVE HER SUCH GOOD VISION AND SO WE TRIED A GORETEX SCLERAL LASSO TECHNIQUE…

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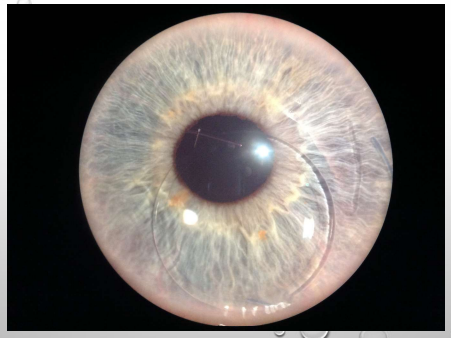

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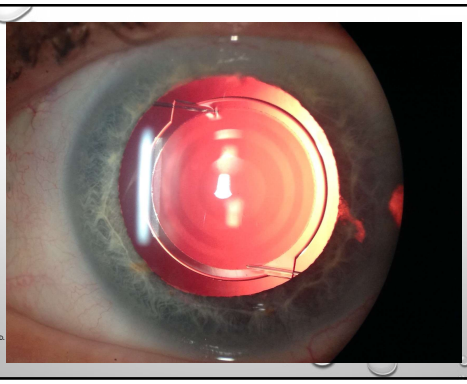

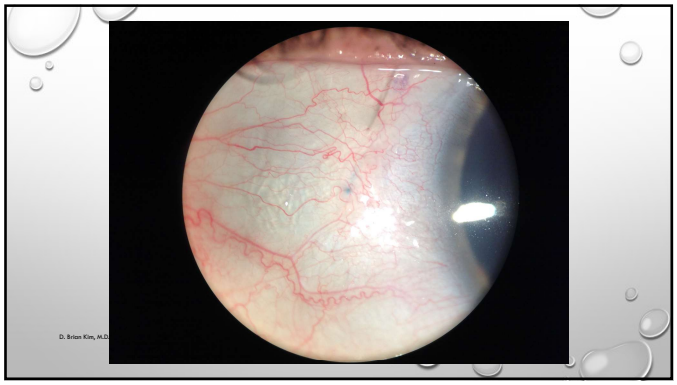

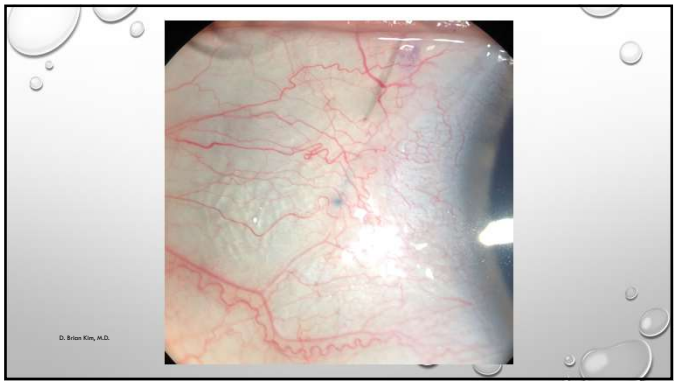

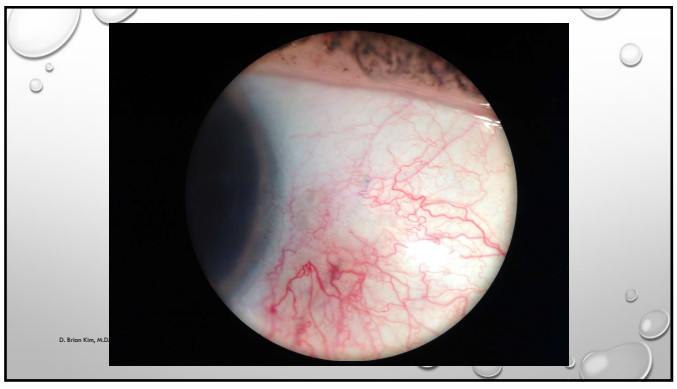

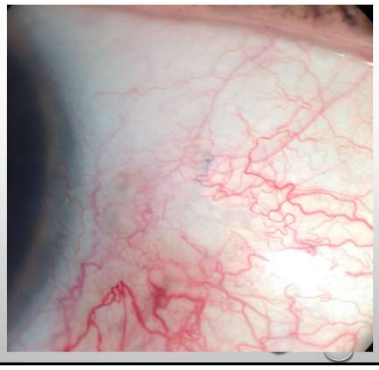

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CASE EXAMPLE

- POSTOP UCDVA: 20/60, UCNVA J1+
- MRX OS: -1.75 SPH, 20/20
- PT WAS ECSTATIC WITH HER VISION
- I OFFERED LVC TOUCHUP IF SHE DESIRED BUT SHE SAID SHE'S SEEING JUST AS WELL AS SHE DID AFTER HER CATARACT SURGERY

D. Brian Kim, M.D.

IN SUMMARY

- SURGEON'S HAVE DEVELOPED MODIFICATIONS TO THE YAMANE TECHNIQUE TO MAKE IT EASIER
- BUT SOME TECHNIQUES INVOLVE MORE FORCEFUL MANIPULATION OF THE HAPTICS
- THE BEST WAY TO TEST THE GENTLENESS OF A TECHNIQUE IS TO PERFORM IT ON HAPTICS WITH LOW TOLERANCE (PMMA)
- MY MODIFICATIONS HAVE WORKED ON PMMA HAPTIC IOLS AS WELL AS 20+ YO DISLOCATED IOLS
- I BELIEVE ANYONE WANTING TO LEARN THE YAMANE TECHNIQUE SHOULD CONSIDER FOLLOWING THESE STEPS TO HELP FLATTEN THE LEARNING CURVE AND TO EXECUTE THE TECHNIQUE WITH MORE EASE AND RELIABILITY

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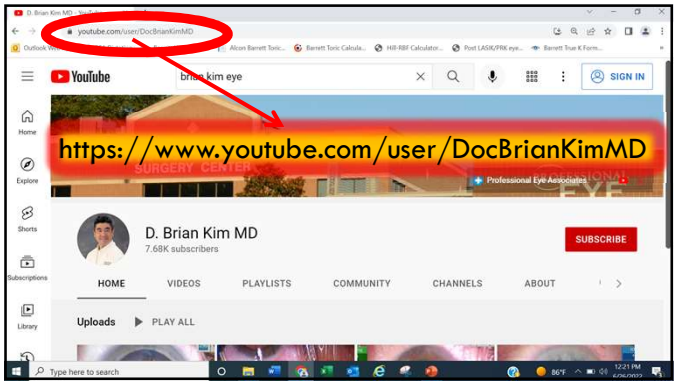
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