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Internal Limiting Membrane Graft for Persistent Macular Holes after Primary Surgical Failure

Hospital de Braga, Braga, Portugal

Porto, 5th September 2014

Internal Limiting Membrane Graft for Persistent Macular Holes after Primary Surgical Failure

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- Macular hole surgery was first reported in 1991 by Kelly and Wendel
- Surgical advances have improved the primary success rate of the surgery to close to 95%
- Surgical failure is rare…

…but difficult to treat

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Several different techniques have been employed with varying degrees of success…

- Enlargement of the area of ILM peel
- Tamponade with silicone oil or long-lasting gases
- Autologous platelets/thrombin
- Brushing the margins of the hole together
- Arcuate superficial retinal incision
- Radial incision around the hole
- LASER....

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Inverted Internal Limiting Membrane Flap Technique for Large Macular Holes

Zofia Michalewska, MD, PhD,[1] Janusz Michalewski, MD, PhD,[1] Ron A. Adelman, MD, MPH,[2] Jerzy Nawrocki, MD, PhD[1]

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- High closure rate
- ILM could serve as a scaffold for cell growth…

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*After **previous surgical failure**…*
…no ILM around the macular hole!!!

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*After **previous surgical failure**…*
…no ILM around the macular hole!!!

Peripheral ILM graft placed on Macular Hole bed

- High closure rate
- ILM could serve as a scaffold for cell growth…

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Methods

- Persistent MH
  - Failed vitrectomy with ILM peel and gas tamponade
- Six eyes of 6 patients
- All pseudophakic

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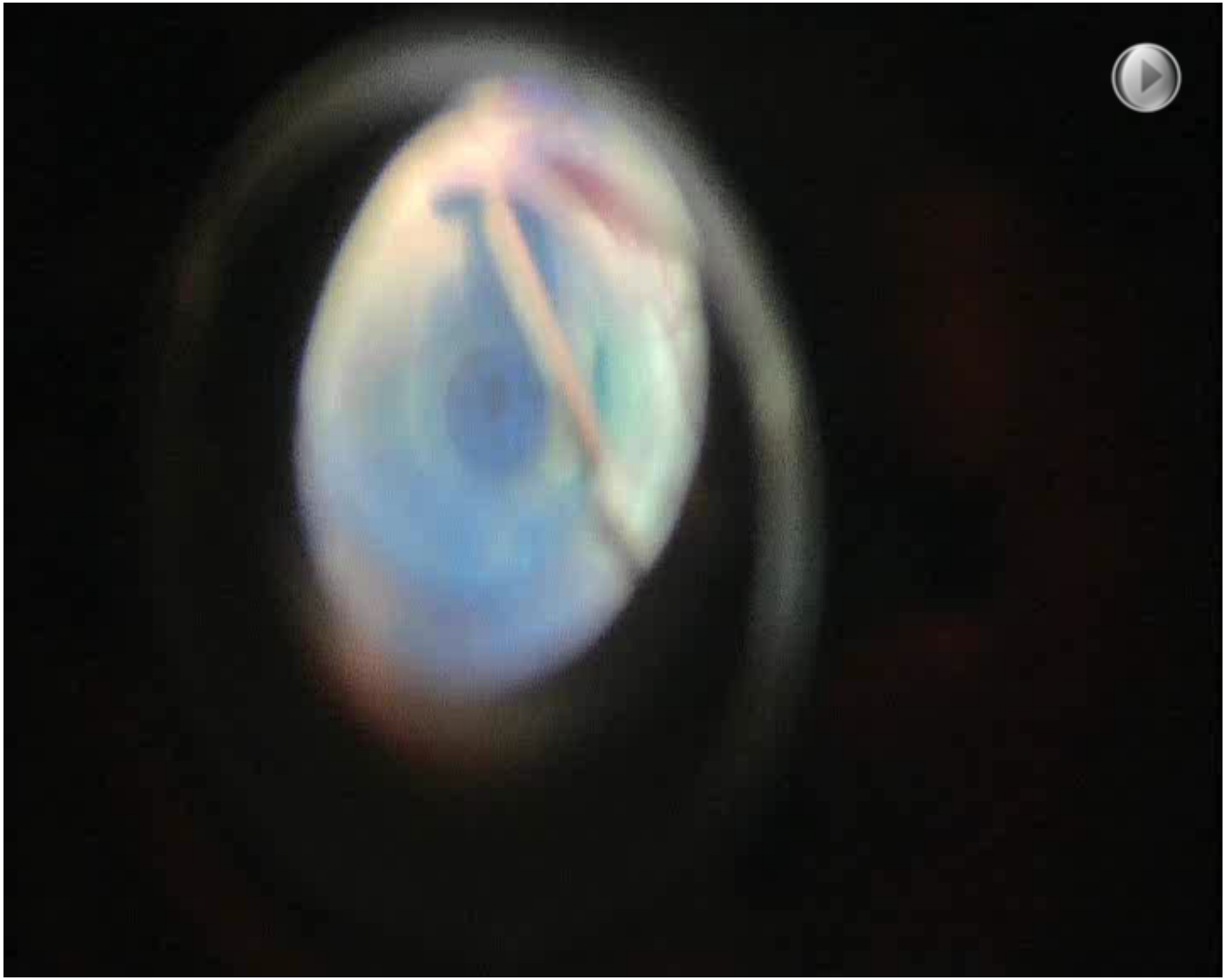
Methods

Surgical Technique

- 23G *pars plana* vitrectomy
- BBG to stain the remaining ILM
- Peel a graft of peripheral ILM and placing it on the bed of the MH
- Carefull fluid-air exchange
- Gas-tamponade with C_3F_8 (14%)
- Avoid prone position for 3 days



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Results

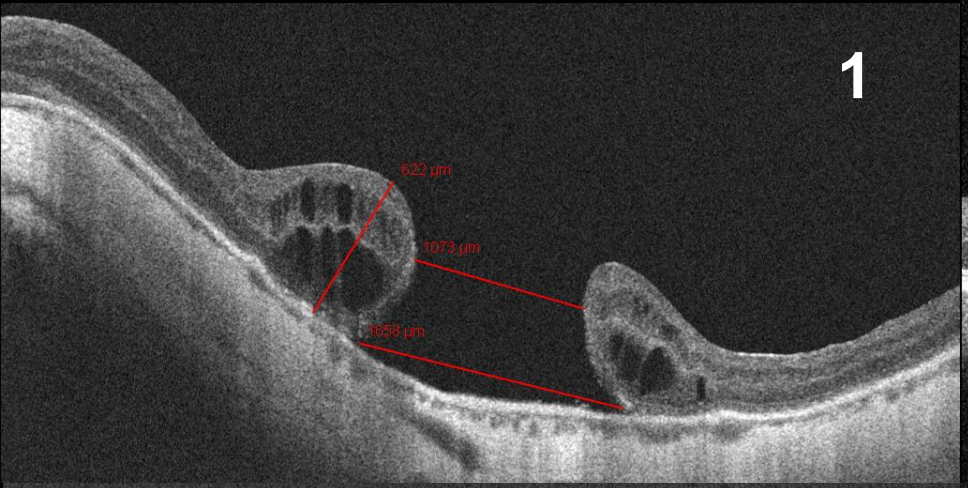
Baseline characteristics

Pre-op MH measurments:

- Minimum MH diameter – **659 µm** (range 392 – 1073 µm)
- Base diameter – **1627 µm** (range 964 – 2847 µm)
- Hole height – **465 µm** (range 316 – 662 µm)
- Macular Hole Index **<0.5** in all cases

Pre-op Visual acuity

- CF in 3 patients
- 20/400 in 1 patient
- 20/200 in 2 patients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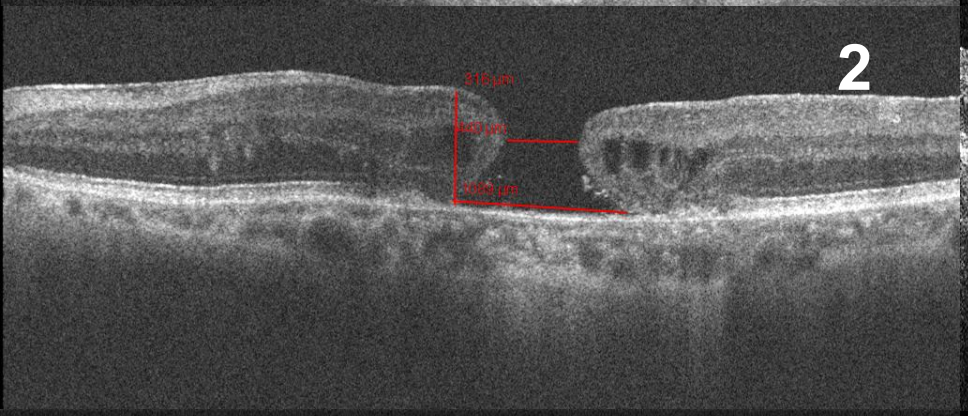
622 µm
1073 µm
1658 µm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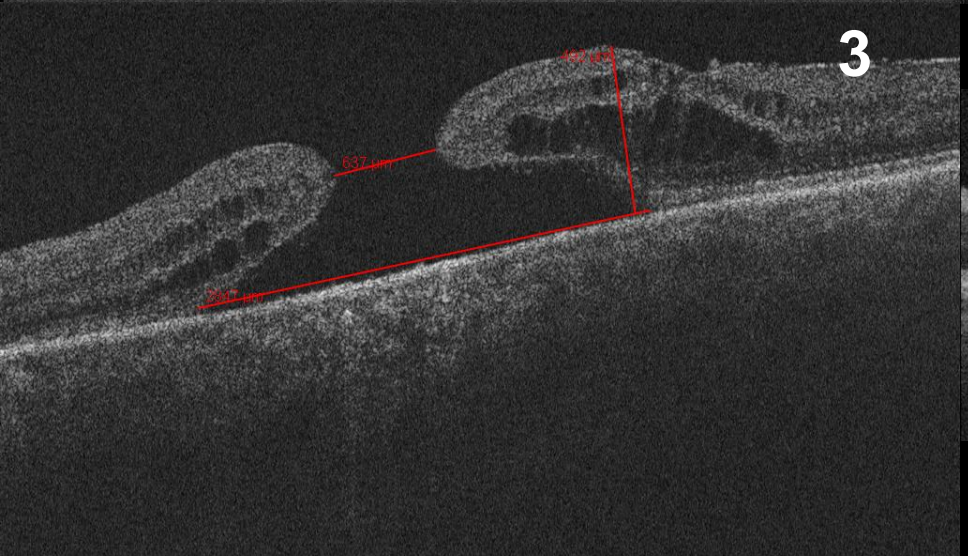
316 µm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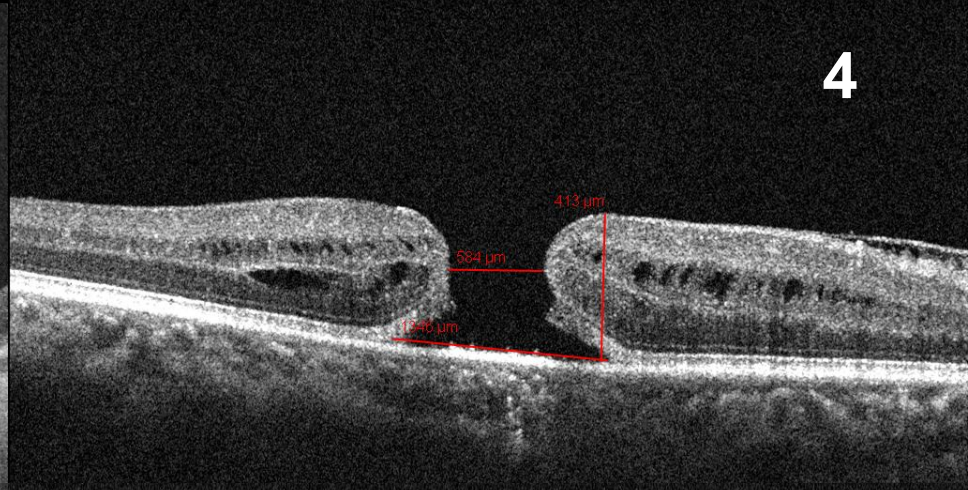
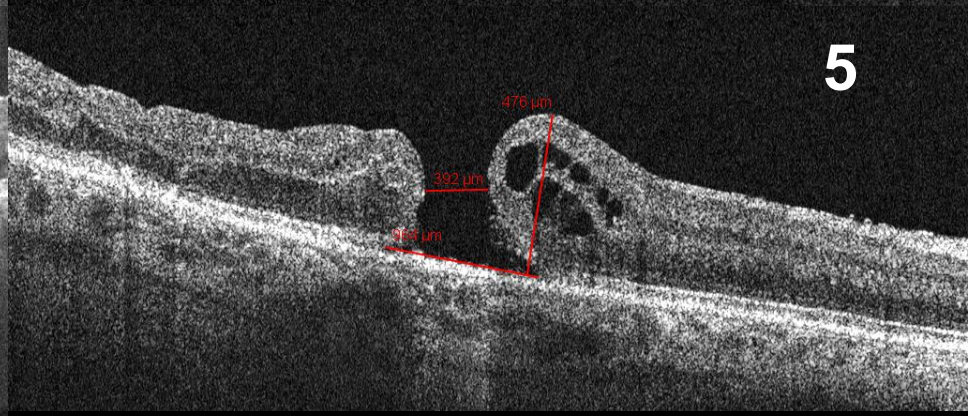
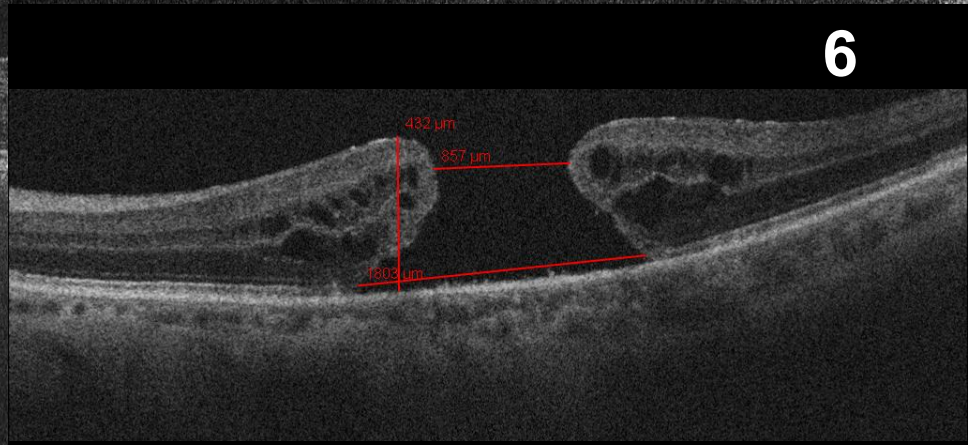
637 µm


4
413 µm
584 µm


5
476 µm
392 µm


6
432 µm
857 µm

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Results

- Macul
- VA im
  - No
- No ma

Pre-op VA	Post-op VA
20/200	20/100
CF	20/200
CF	20/200
20/200	20/200
20/400	20/400
CF	20/400

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- Macul
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CF	20/200
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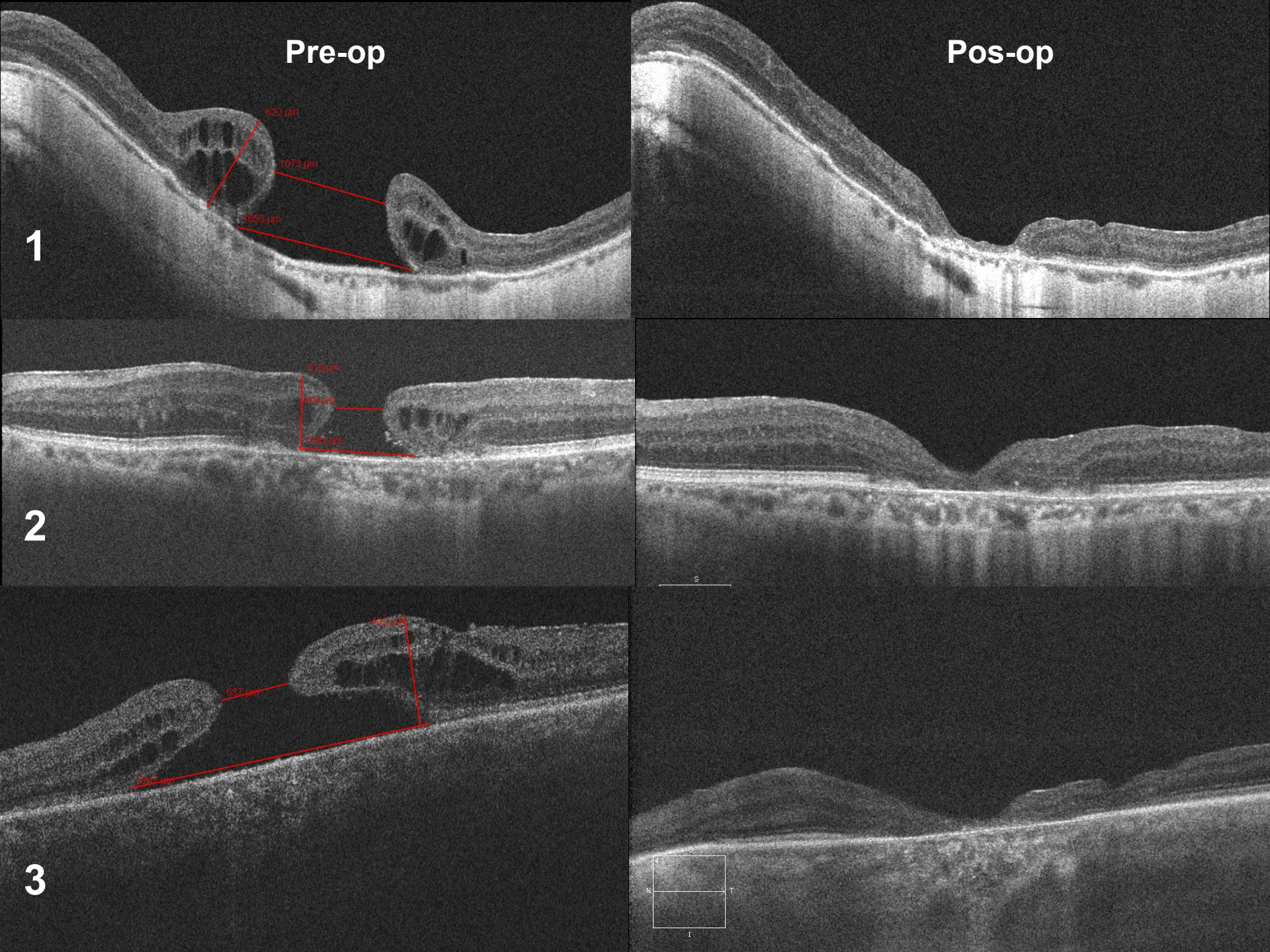
CF	20/400


Pre-op
Pos-op
622 µm
1073 µm
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1
316 µm
2
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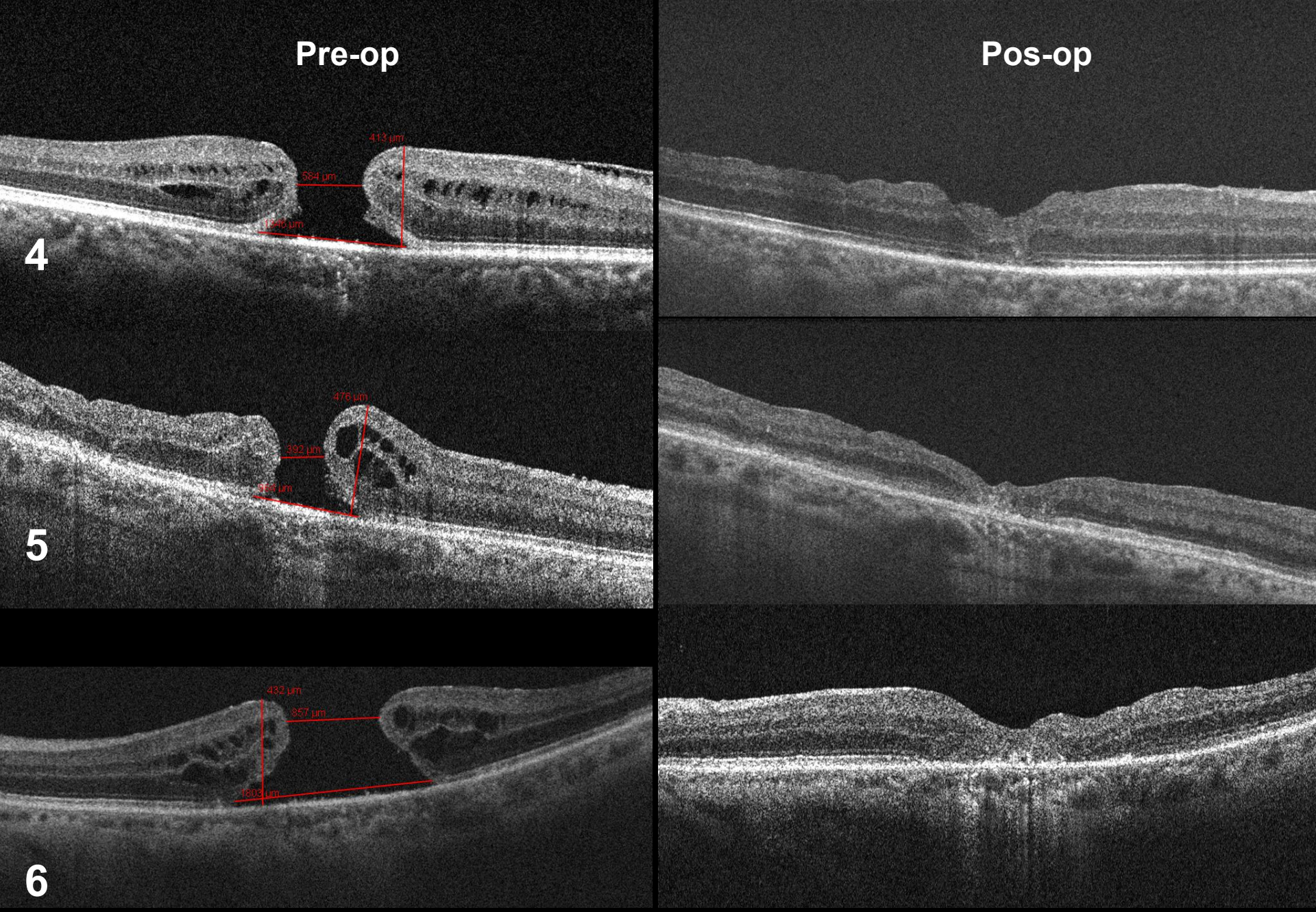
Pre-op
Pos-op
413 µm
584 µm
4
476 µm
392 µm
5
432 µm
857 µm
6

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Conclusions

- This technique should be considered an option for persistent macular holes
- Less trauma to the retina than some of the alternative techniques
- Easily performed and safe
- More cases...

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Obrigado!
Thank you!

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- Which side of the ILM is up?

- Impossible to know!!!!
- Does it matter???
- Hole closes and VA improves….

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- Tips and tricks?
  - Stain
  - Lower pressure (valves are great!)
  - Grab flap gently
  - Bimanual surgery
  - Slow fluid/air exchange
  - Patience is a virtue!!!!