RETINA-VITREOUS SURGEONS OF CENTRAL NEW YORK, P.C.

Outcomes of Pars Plana Vitrectomy for Retinal Detachment Anatomically Eligible for Pneumatic Retinopexy

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Disclosures

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Study:

- Retrospective study
- Consent waived
- IRB Crouse Hospital, Syracuse, NY

Summary

- Real-world data-set of 1797 charts derived from single private practice affirms high degree of anatomical and visual success of PPV for RRD anatomically eligible for pneumatic retinopexy (PR).

- Of 720 eyes eligible for PR: Single surgery success 94% and final anatomical success 99.9%.

- Greater visual improvement in eyes with primary surgical success.

- Limited number of secondary surgical procedures achieved final success in eyes with primary failure resulting in overall low morbidity.

Background

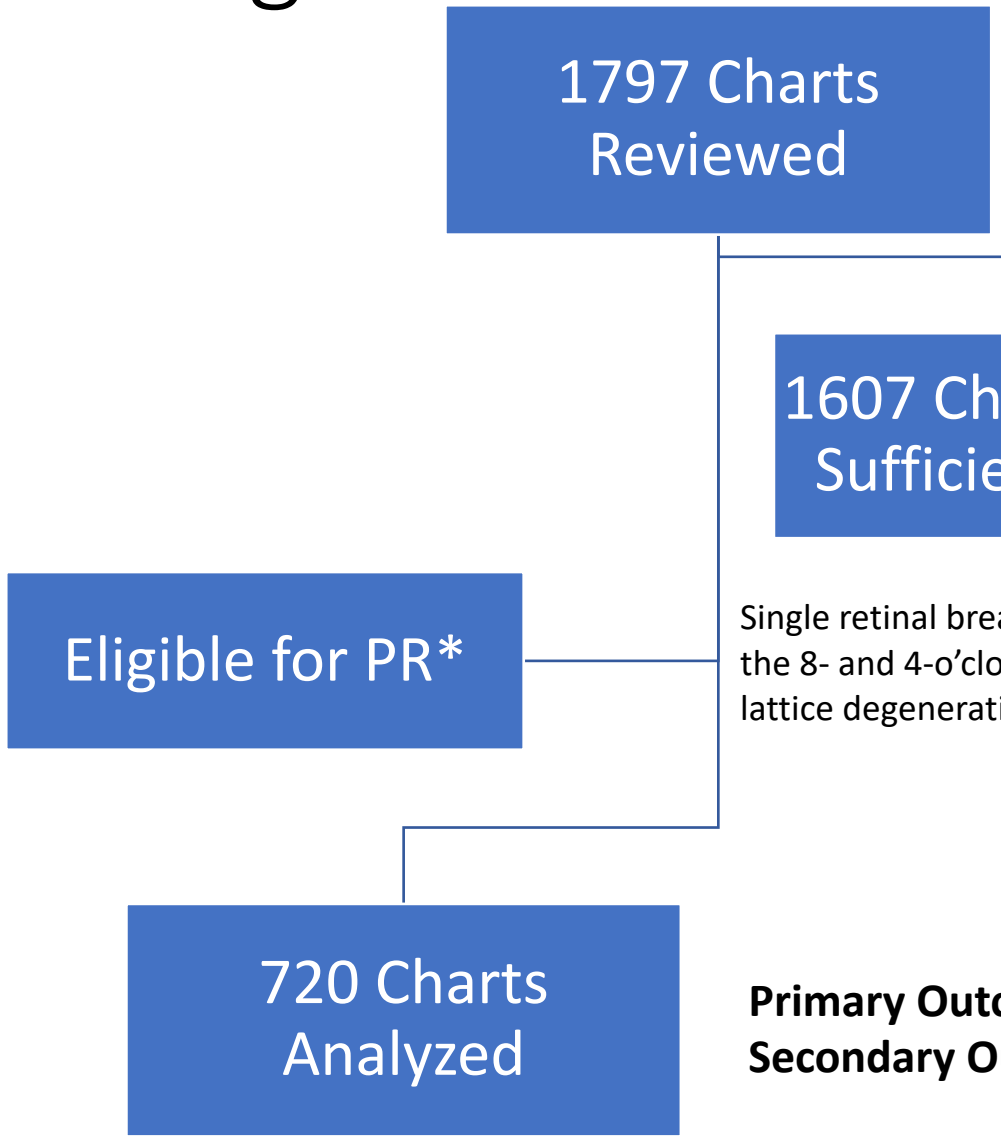
- Recent prospective randomized trial reported favorable outcomes for pneumatic retinopexy versus vitrectomy.[1]
- Retrospective studies report mixed results for pneumatic retinopexy (primary success ~50-70%).[2-4]
- Eyes with primary PR failure may need multiple secondary procedures, relatively poor final outcomes.[5]

1. Hillier. Ophthalmology 2019; 2. Emami-Naeini. Ophthalmol. Ret 2019.; 3. Fabian. JAMA Ophthalmol. 2013; 2019 4. Tornambe. Trans Am Ophthalmol Soc. 1997; 5. Anaya. Ophthalmology 2016

Key Clinical Question

What are the real-world outcomes of vitrectomy for retinal detachment that is anatomically eligible for repair by pneumatic retinopexy?

Study Design



Single practice, CPT code 67108, years 2011-2018

Single retinal break or a group of breaks in detached retina within 1 clock hour above the 8- and 4-o'clock meridians, with any number, location and size of retinal breaks or lattice degeneration in attached retina.[1]

Primary Outcome: Single and final anatomical success
Secondary Outcome: Change in LogMar BCVA

1. Hillier. Ophthalmology 2019

Baseline Information

Variable	Eligible for PR (n=720)
Age, Mean (SD)	62.9 (9.1)
Male (%)	444 (61.7)
Lens Status (%)	
Phakic	439 (61.0)
Pseudophakic	279 (38.8)
Aphakic	2 (0.3)
Macular Status (%)	
On	427 (59.3)
Number of Breaks (%)	
1 Break	621 (86.3)
>1 Break	99 (13.8)
Lattice degeneration (%)	194 (26.9)

Anatomical Outcomes

- **Single Surgery Success: 94.0%**
- **Final anatomical success: 99.9%**

Functional Outcomes

Variable	Single Surgery Success (n=677)	Single Surgery Failure (n=43)	P
Preoperative LogMAR	0.853	0.714	0.276
Postoperative LogMAR	0.293	0.648	**0.006**
LogMAR Improvement	0.561	0.066	**0.005**
	<0.001	0.686	
Final BCVA (Snellen)			**<0.001**
20/40 or better (%)	484 (71.5)	22 (51.2)	
20/200 or worse (%)	42 (6.2)	10 (23.3)	

Preop Characteristics

Variable	Single Surgery Success (n=677)	Single Surgery Failure (n=43)	P
Age, Mean (SD)	62.8 (8,4)	63.3 (9.2)	0.760
Male (%)	414 (61.2)	30 (69.8)	0.260
Lens Status (%)			0.925
Phakic	413 (61.0)	26 (60.5)	
Pseudophakic	262 (38.7)	17 (39.5)	
Aphakic	2 (0.3)	0 (0.0)	
Macular On (%)	400 (59.1)	27 (62.8)	0.631
Number of Breaks			0.106
1 Break	580 (85.7)	41 (95.3)	
>1 Break	97 (14.3)	2 (4.7)	
Lattice degeneration (%)	178 (26.3)	16 (37.2)	0.118

Surgical Characteristics

Variable	Single Surgery Success (n=677)	Single Surgery Failure (n=43)	P
Tamponade (%)			**0.039**
Air	14 (2.1)	0 (0.0)	
SF_6	552 (82.2)	31 (72.1)	
C_3F_8	104 (15.5)	12 (27.9)	
Silicone Oil	2 (0.3)	0 (0.0)	
Primary PPV and SB (%)	4 (0.6)	2 (4.7)	**0.045**

Postop Characteristics

Variable	Single Surgery Success (n=677)	Single Surgery Failure (n=43)	P
Hypertony (%)	89 (13.1)	6 (14.0)	0.879
Hypotony (%)	24 (3.5)	0 (0.0)	0.390
Vitreous Hemorrhage (%)	12 (1.8)	1 (2.3)	0.554
Macular Hole (%)	6 (0.9)	1 (2.3)	0.351
CME(%)	**40 (5.9)**	**9 (20.9)**	**<0.001**
ERM (%)	**103 (15.2)**	**12 (27.9)**	**0.028**
PVR (%)	**2 (0.3)**	**21 (48.8)**	**<0.001**

Eyes with secondary RD repair (n=43)

Variable	n
Mean number of additional surgeries	1.12
Mean number of days to second surgery	94
Scleral buckle (%)	15 (34.9)
Silicone oil (%)	9 (20.9)
Membrane Peel (%)	19 (44.2)
Lensectomy (%)	3 (7.0)

Conclusions

- Real-world data affirms excellent outcomes of PPV specifically for RRDs eligible for PR
- High degree of anatomical success with low morbidity