

Le linee guida in oftalmologia

Il pronto soccorso oculistico
Femtolaser Cataract Surgery



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FAD "IL GLAUCOMA" (Parte seconda)
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20 crediti ECM

Vitrectomy Assisted Pneumatic Retinopexy – V.A.P.

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Pneumatic Retinopexy



Pneumatic retinopexy (PR) is a technique introduced in the mid-1980s for the repair of uncomplicated rhegmatogenous retinal detachment.^{1,2}



Furthermore the Pneumatic Retinopexy Study demonstrated that patients with a recent macular detachment treated with PR had better functional results compared to scleral buckle.¹¹

1. Tornambe PE, Hilton GF. The Retinal Detachment Study Group. *Ophthalmology*. 1989

2. Tornambe PE. Pneumatic retinopexy. *Surv Ophthalmol* 1988

3. Hilton GF, Grizzard WS. Pneumatic retinopexy. A two-step outpatient operation without conjunctival incision. *Ophthalmology*. 1986

Pneumatic Retinopexy



ADVANTAGES



- less tissue manipulation
- lack of major complications
- lower expenses
- better functional visual results.⁵⁻⁷



5. Hilton GF, et al. Pneumatic retinopexy. A collaborative report of the first 100 cases. *Ophthalmology*. 1987

6. McAllister IL, et al.. Comparison of pneumatic retinopexy with alternative surgical techniques. *Ophthalmology*. 1988

7. Sinawat S, et al.. Air vsperfluoropropane gas in pneumatic retinopexy: a randomized noninferiority trial. *Arch Ophthalmol*. 2010

Pneumatic Retinopexy



Brinton and Hilton estimated that at least 40% of RRD can be managed by PR

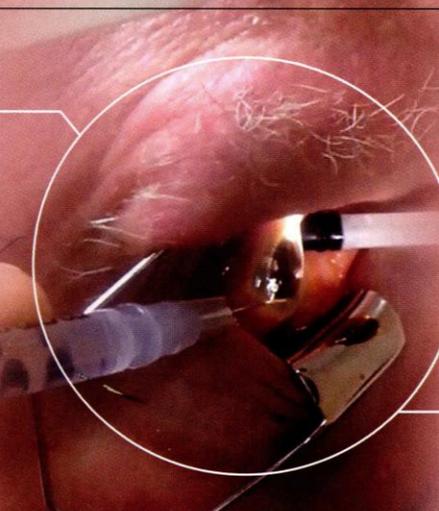
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RETINA SPECIALIST

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Managing DME During Pregnancy
Medical Retina Fellows Forum Page 11

Page 30 Widefield Imaging Finds
Its Place in the Practice



PEARLS FOR PERFORMING PNEUMATIC RETINOPEXY

*A less-costly alternative
well-suited to repair small
superior retinal breaks.*

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**Drainage Retinotomy
Sans Laser**

Online Video

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**Computer-Navigated Laser
For DME: How We Got Here**

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NEW: Surgical Pearl Video: Reflux Chromovitrectomy

Inexpensive Yet Unpopular

Economic analyses have shown that PR is more than 50 percent less expensive than scleral buckling or pars plana vitrectomy, and has the most utility when dollars/quality-of-life-year saved is studied.¹⁹⁻²⁰

Despite this, recent surveys found only 25 percent of retina specialists would use PR for a retinal detachment with a single superior break, which is a decline from previous data.²¹

Overall, only 15 percent of retinal detachments are treated with PR in the United States, and studies have estimated that Medicare would save \$6 million to \$30 million if this rate increased to just 20 to 35 percent.^{19,22}

Pneumatic Retinopexy



Why the PR is used in a small percentage of cases?





DRAWBACKS

- Limited indications
- Reduced success rate compared with SB and PPV ^{13,14}



A multicenter trial has shown that the initial PR does not disadvantage the final anatomical and visual outcomes of further surgery.⁸

8. Zaidi AA, et al. Pneumatic retinopexy: success rate and complications. *Br J Ophthalmol.* 2006

13. Benson WE, et al. Current popularity of pneumatic retinopexy. *Retina.* 1999

14. Sodhi A, et al. Recent trends in the management of rhegmatogenous retinal detachment. *Surv Ophthalmol.* 2008

Pneumatic Retinopexy



BEST CANDIDATES



a single retinal break, or more retinal breaks, not larger than 1
clock
hour (30°) and positioned in the superior 8 clock hours of
the eye

Pneumatic Retinopexy



The major cause of failure of PR is related to the persistence of significant vitreous traction on the retinal break.⁹

9. Kulkarni KM, et al. Current visual and anatomic outcomes of pneumatic retinopexy. *Retina*. 2007

If the traction is substantial, PR may fail, and it can worsen the retinal detachment.¹⁰

10. Ambler JS, et al. Reoperations and visual results after failed pneumatic retinopexy. *Ophthalmology*. 1990

Pneumatic Retinopexy



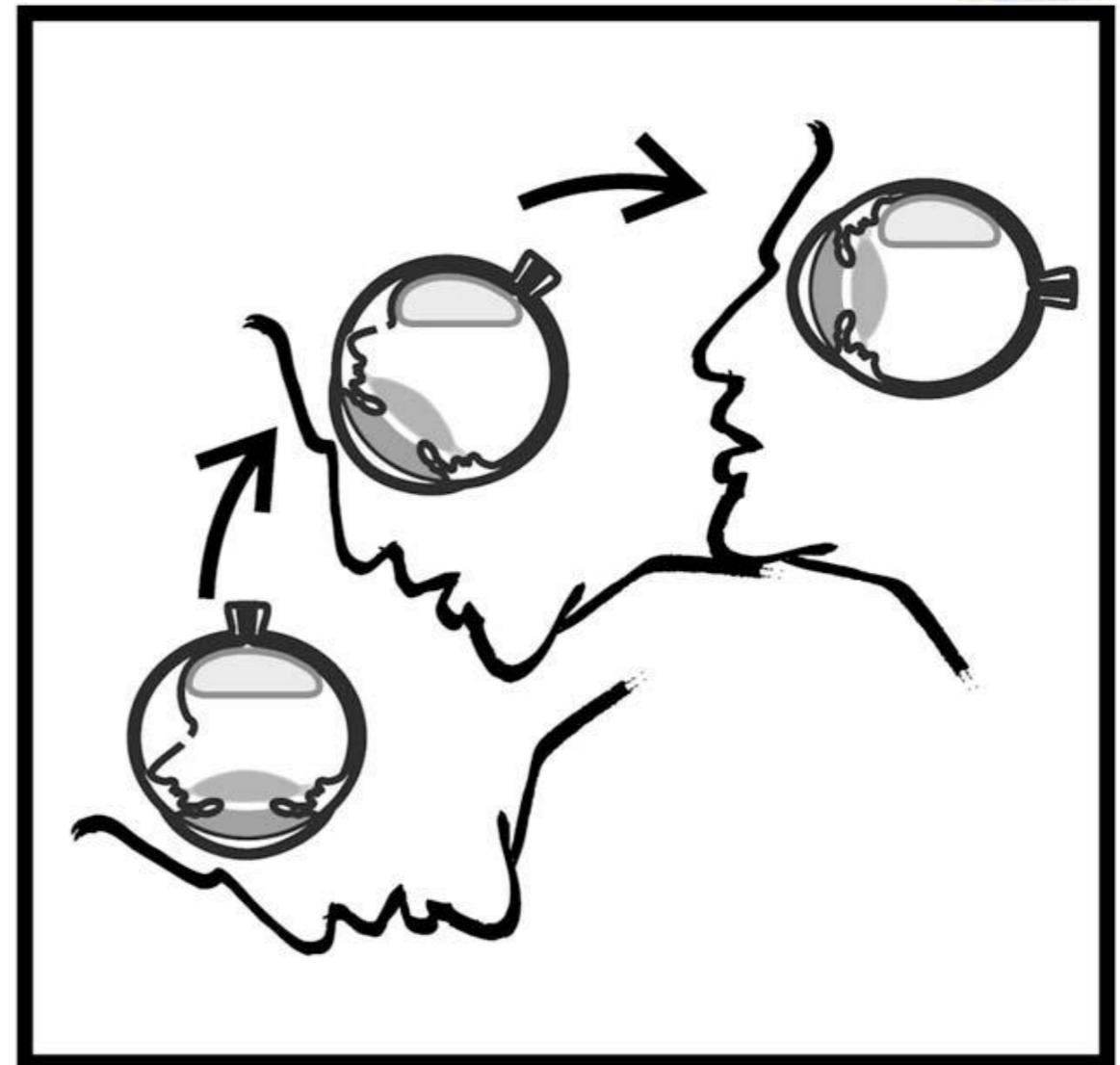
Others common causes of failure of primary PR are:

- the occurrence of new retinal breaks, caused by the expansion of the intraocular gas bubble that can produce unwanted vitreoretinal traction,
- or the presence of missed retinal breaks.¹²

Pneumatic Retinopexy



An other drawback of PR includes the need of an excellent compliance of the patients with postoperative positioning.



Pneumatic Retinopexy



WHY V.A.P. ?



- *improve the efficacy of PR*
- *reduce complications*
- *widen the indication*

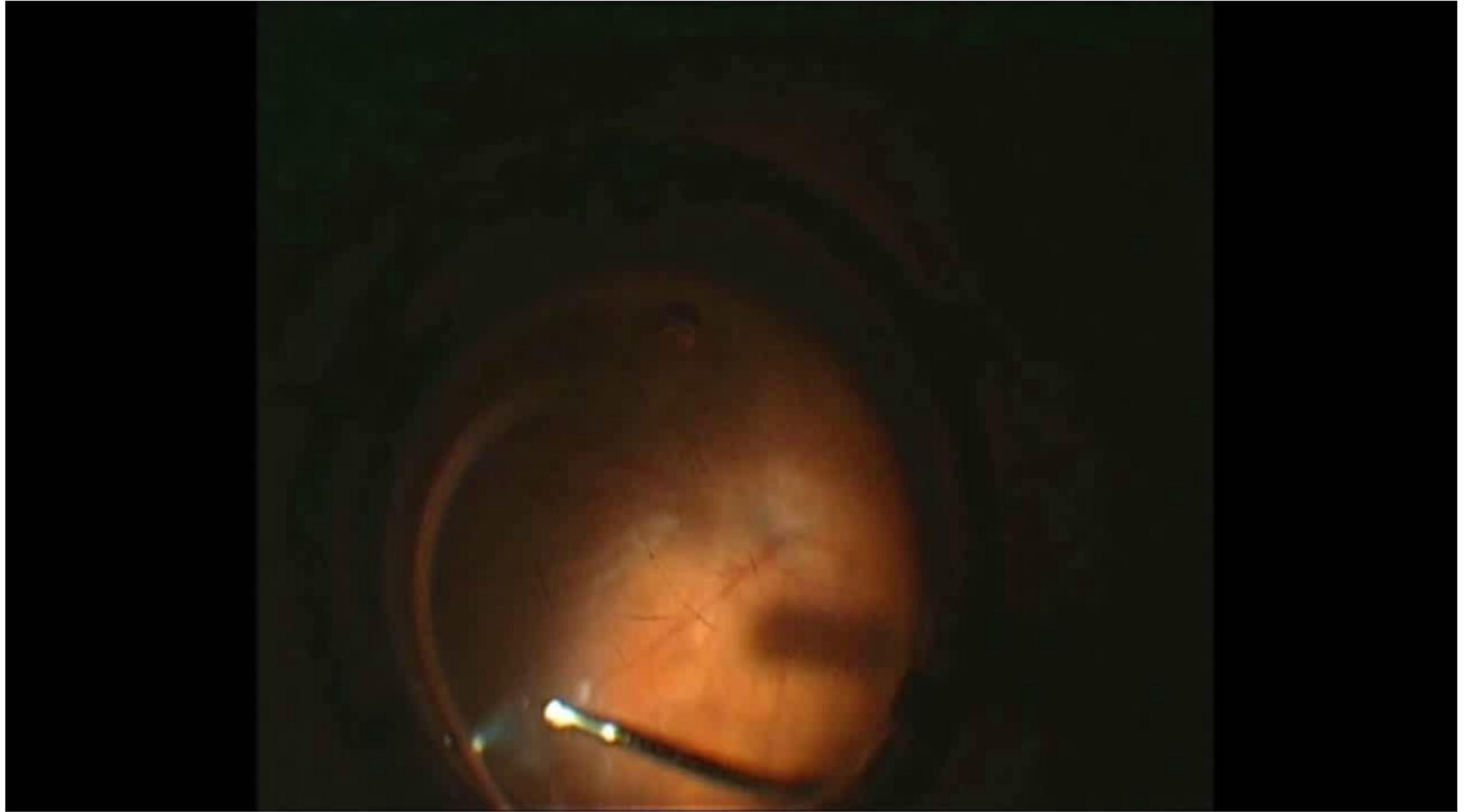
Vitreotomy Assisted Pneumatic Retinopexy (VAP)



- *Localized air vitrectomy.*
- *Drainage of subretinal fluid with needle through the retinal break.*
- *Endolaser photocoagulation applied around the retinal breaks.*
- *Complete Air/Gas performing.*



**KEEP
CALM
IT'S
COMING
SOON**



Conclusions



VAP allows to address the two main causes of failure of the PR; the removal of the adhesion between the vitreous and retinal break eliminates the tractional component, while the use of a non-expandable gas reduces the risk of new retinal breaks.

Moreover, further advantages compared to the traditional PR are:

- 1) to obtain an immediate reattachment of the retina with the chance to perform an intraoperative photocoagulation,
- 2) to widen the traditional indications of PR, including cases with inferior retinal breaks or thicker subretinal fluid, and
- 3) to reduce the importance of postoperative positioning of the patient.

Moreover, this technique is less invasive than other surgeries: it does avoid the traumatism related to the scleral buckling procedure or the complete vitreous removal performed in standard vitrectomy.

In conclusion VAP might be considered a new option in the treatment of rhegmatogenous retinal detachment, with potentially better anatomical and visual results