Evolution of the management of myopic macular hole retinal detachment in Egypt

by

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1920 Jules Gonin

- The father of modern retinal surgery
- The first to discover the causal relationship between rhegmatogenous RD and retinal breaks

Macular buckle

- The treatment available in the pre vitrectomy era was scleral buckling and treatment to the macular hole.

- Drawbacks of macular buckle
  - Anatomical difficulties necessitating special surgical skills
  - Destruction of macular function
  - Only anatomical success was hoped for
Macular buckle

Anatomical difficulties
1969 Siam AL.

One of the earliest pioneers in macular hole surgery

1982 Gonvers M. & Machemer R.
1982 Gonvers M. & Machemer R.

- 6 Cases treated by PPV + fluid/gas exchange + prone positioning
- No treatment was applied to the hole

This paper highlighted the role of traction in the pathogenesis of macular holes.

The concept changed from retinal break as being the cause of retinal detachment to being the means by which retinal detachment occurs.

Techniques available in this era:

- Pneumatic retinopexy
- Simple PPV without treatment to the hole
- PPV + laser treatment to the hole
- PPV + Gas tamponade
- PPV + Silicone oil tamponade
- PPV + adjuvant treatment
  (autologous serum, TGF β, bovine thrombin…….)
1986 Zayed A.
- 2002 Myopic macular holes: different colors with different prognosis. Presented at Club Jules Gonin meeting at Taormina.

Differentiated between white and red holes with their different prognoses

1989 Rashed O. & Sheta S.
A total of 50 eyes with macular hole retinal detachment

- 10 eyes treated by pneumatic retinopexy
- 30 eyes treated by PPV + air tamponade
- 10 eyes treated by PPV + Si Oil tamponade

Comparison of functional results by:

- BCVA
- Color vision
- Field of vision

1990  Sheta SM, Hida T, McCuen BW
Limitations in the seventies & eighties

- These decades witnessed great improvements in the success rate.

- But.......  
  - Differentiation between full thickness and lamellar holes was definite only intra-operatively.
  - Posterior staphyloma cases had poor prognosis.

The OCT era

- The introduction of OCT brought about advances:
  - Differentiation between lamellar and true holes
  - Identification of different healing patterns after surgery
  - Discovery of foveoschisis
2004 Rashed O. & Gaber A.
Reappraisal of surgery for myopic macular hole based on OCT findings.
Presented at the Vail meeting.
2004 Rashed O. & Gaber A.
Reappraisal of surgery for myopic macular hole based on OCT findings.
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### Healing Patterns

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>U-pattern</td>
<td>Restoration of normal foveal pattern</td>
</tr>
<tr>
<td>V-pattern</td>
<td>Foveal area shows a thin layer of neurosensory retina</td>
</tr>
<tr>
<td>W-pattern</td>
<td>Foveal defect of neurosensory retina</td>
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</tbody>
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### Hole Patterns

- Flat and open
- Flat and closed
- OCT images of myopic macular holes invariably appear as full-thickness defects in detached retina.

- The postoperative appearance of closed holes can be classified into 3 patterns as in idiopathic macular holes.

- The ‘W’ pattern correlated with the worst visual acuity.

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**Foveoschisis**

![Foveoschisis Image]
2004 Tano Y.

- Operated on 6 eyes
- Foveal detachment completely resolved in 5 eyes and partially in one.

PPV
+ Vitreous cortex removal
+ ILM peeling
+ Gas tamponade
2006 Mortada H.
Myopic foveoschisis in highly myopic eyes. Presented at Egyptian vitreoretinal society meeting in Cairo.

PPV
+ Vitreous cortex removal
- no ILM peeling
+ Gas tamponade

ILM peeling 2005 K. El-Rakhawy

Demonstrated that ILM removal is feasible in Myopic Macular Hole Detachment (and not only in Idiopathic macular hole surgery)

ILM removal may reduce recurrence rate especially after silicone oil removal

Blue dyes : (Trypan blue and later Dual blue & Brilliant blue) are very helpful in ILM removal from detached retina
Revival of Macular Buckle


2008 Siam AL. Revival of macular buckling for retinal detachment due to a macular hole in high myopia. Presented at the Club Jules Gonin meeting.
**Revival of Macular Buckle**

**Indications:**
- Recurrent cases after PPV with various techniques including silicone oil tamponade
- Very atrophic background; white holes
- High myopia with posterior staphyloma

**Where do we stand now?**

- Better investigations.
- Multiple techniques.
- No single technique suits all cases.
THANK YOU