Surgical Treatment, Postoperative Swept-Source Optical Coherence Tomography and Fundus Autofluorescence Findings in Full Thickness Macular Fold

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MF following retinal detachment surgery is an **uncommon complication**, reported in 3% of RD surgical repairs.

Can present in the **posterior pole (MF)** and at the **periphery**.

This complication is more frequently seen **after PPV with gas tamponade**

The **management** of RF following RD is **not well defined**

Wong classified the MF by spectral domain OCT in three types: (1) Ripple, (2) Taco and (3) Displacement
Symptoms

- Depend on location and extent
- Blurred vision
- Metamorphopsia
- Diplopia
The risk factors for RF can be divided in 3 groups:

**PREOPERATIVE**
- Superior bullous RD
- Macula off RD

**INTRAOPERATIVE**
- Circumferential SB
- Excessive tension in the SB
- Use of gas as tamponed
- Undiagnosed peripheral breaks

**POSTOPERATIVE**
- Incorrect postoperative posture
To report the successful surgical treatment of a macular fold formation after retinal detachment surgery and the postoperative SS-OCT and FFA findings
Case Report

- 49 years old man
- Pseudophakic RD
- Superotemporal bullous macula OFF RD
- PPV+FAX+SF6+CRYO
- Facedown posture was instructed but not performed after 4 hours
Case Report

- A 49-year-old man
- MF secondary to an incorrect postoperative posture after a PPV for retinal detachment
- SS-OCT confirmed the MF affecting the fovea

BCVA: 0.8 logMar (6/38)

METAMORPHOPSIA
Surgery

- A posterior pole RD was created with the injection of Balanced Salt Solution (BSS®) at a ‘1 o’clock position’ along the supero temporal vascular arcade.
- A bubble of perfluorocarbon liquid was “rocked and rolled” over the RD to undo the MF.
- Fluid/air exchange was followed by injection of 14% C3F8 gas.

Immediate facedown posturing was instructed
Results: 45 days postoperatively

BCVA: 0.0 logMar (6/6)
Treatment of Macular Folds: Controversial

- Although some authors argue against surgical treatment because RF could spontaneously resolve
- Macular folds tend to resolve spontaneously because of the elasticity and “memory” of the retina
- Early surgical intervention provides a better anatomical and functional prognosis as we have demonstrated
- The longer surgical intervention is delayed, the higher the risk of photoreceptor cell loss, as it has been demonstrated in animal models

In summary, we agree that in the case of a peripheral and almost flat RF we can “wait and watch” as the retina could be reattached spontaneously, and the visual field will not be disturbed.

- Permanent structural damage
  - loss of phototransduction in the photoreceptors that are separated from the RPE
  - apoptosis and thinning of the photoreceptor layer within the fold

If RF involves macular area, surgery should be done in a short time period in order to avoid photoreceptors loss as we demonstrate with the AF
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