Management of Vitreomacular Adhesion

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Vitreomacular Traction/Adhesion

The management of Vitreomacular Adhesion (VMA), (VMT) and Macular holes

We now have another option!
Vitreomacular Traction/Adhesion

The use of current SD OCT imaging technology has allowed a non-invasive, high resolution view of the vitreoretinal interface (VRI) and has led to new insights into the natural history of diseases of the VRI.

In a subset of people, the separation between the vitreous cortex and the internal limiting membrane of the retina in incomplete.

When the vitreous cortex remains firmly attached to the macula it is known as a vitreomacular adhesion (VMA).

VMA can cause traction on the retinal surface and as a result you have vitreomacular traction (VMT).

Vitreomacular adhesion /traction

Symptoms of VMA

- Metamorphopsia
- Decreased central visual acuity
- Macropsia
- Central visual field defects
Symptoms DO NOT equal treatment however educating the patient is our duty……

Treatment options for VMA/VMT

- Watchful waiting (home amsler grid education)
- Vitrectomy Surgery (most definitive option)
- Ocriplasmin (Jetrea)

Vitreomacular Traction/Adhesion

The management of full thickness macular holes with a complete PVD is well known and involves Vitrectomy surgery, fluid gas exchange and face down positioning of the patient.

The question we are faced with is can we intervene early in the process before a full thickness hole and complete PVD develops.

Vitreomacular Traction/Adhesion

The incidence of a full thickness macular hole is between 1 and 3% depending on what study you read, however VMA and VMT is much more common.

SDOCT technology has now given us the opportunity to image the vitreoretinal interface as this is hard to see even with high resolution digital photography capability.

The question we must ask is who is a good candidate for treatment, when to intervene, and who can be observed.
The prevalence of vitreomacular adhesion in patients 40 years and older (VAST)

PURPOSE

To assess the prevalence and characteristics of vitreomacular adhesion and traction in a population-based sample of patients 40 years of age and older.

METHODS

A comprehensive eye examination, including medical history, Amsler grid testing, dilated fundus examination, and SD-OCT was performed on each subject.

RESULTS

Data were collected from 2179 eyes of 1120 subjects representing a wide range of ages, demographics and refractive errors.

With advancing age, the proportion of patients with vitreomacular adhesion (VMA) or traction (VMT) increases. The presence of VMA or VMT was detected in 33.5% of eyes.

Multiple logistic regression analyses with multilevel modeling to account for the correlation between eyes of the same subject showed the following factors to be significant reduced odds of having VMA/VMT by 55%: 1. Patients who were 50-59 years of age or of Caucasian descent were more likely to have VMA/VMT. 2. Hispanic, Afro-American, and mixed descent were more likely to have VMA/VMT. 3. Caucasians were 61% less likely to have VMA/VMT. 4. Afro-Americans were 74% less likely to have VMA/VMT. 5. With advancing age, the proportion of patients with VMA/VMT decreases (e.g., it is present in only 1.4% of eyes representing patients 80-95 years of age).

Classification was done according to the rubric established by "The International Vitreomacular Traction Syndrome (IVTS) Study Group."1

RESULTS (continued)

VMA/VMT was present in approximately one third of eyes representing a wide range of ages, demographics and refractive errors.

Patients who were 50-59 years of age or of Caucasian descent were more likely to have VMA/VMT.

CONCLUSIONS

VMA/VMT are present in approximately one third of eyes representing a wide range of ages, demographics and refractive errors.

Future work will focus on the role of age, sex, ethnicity, ocular disease and refractive errors as risk factors for VMA/VMT.
Vitreomacular Traction/Adhesion

International Vitreomacular Traction Study (IVTS) Group

Established OCT based anatomic classification system

VMA: perifoveal vitreous separation with remaining vitreomacular attachment and unperturbed foveal morphologic features.

Vitreomacular Traction/Adhesion

International Vitreomacular Traction Study (IVTS) Group

Established OCT based anatomic classification system

VMT: anomalous posterior vitreous detachment accompanied by anatomic distortion of the fovea

Focal: attachment of 1500 microns or less

Broad: attachment of more than 1500 microns

VitreoMacular Adhesion

FDA Approval of Ocriplasmin (JETREA) – 2012
Commercially available in January of 2013

Ocriplasmin (Jetrea) is a truncated form of human plasmin that has activity against the components of the vitreous body and the vitreoretinal interface (fibronectin, collagen, and laminin)
It isn’t cheap

- Avastin: $26.00
- Ozurdex: $1,295
- Eylea: $1,850
- Lucentis: $1,950
- JETREA: $3,950

But cheaper than surgery…if it works

Side effects

Injection:
- Irritation, infection, endophthalmitis, bruising, and subconjunctival hemorrhage

Medication:
- Traction-related pathology: edema, macular hole, subretinal fluid
- PVD effects, i.e., retinal tears, detachment
- Lens subluxation
VitreoMacular Adhesion

FDA Approval of Ocriplasmin (JETREA) – 2012
(Treatment of Symptomatic Vitreomacular Adhesion)

- Intravitreal Injection
- One time treatment per eye ($3950.00)
- Induction of mechanical PVD by cleavage of traction
- Success rates for release of traction within 28 days was 26.1% as compared to 10.1% in the placebo group
- Also found to close small macular holes in up to 40.6% of cases as compared to 10% of placebo.

VitreoMacular Adhesion

FDA Approval of Ocriplasmin (JETREA) - 2012

- Success rates for release of traction within 28 days was 26.1% as compared to 10.1% in the placebo group
- Keep in mind it was a clinical trial that took all variations to VMT, broad attachments, multiple adhesion points and patients with an ERM

Vitreomacular Traction/Adhesion

International Vitreomacular Traction Study (IVTS) Group

“Positive predictors of response with JETREA”

- Focal attachment – less than 1500 microns
- Absence of an epiretinal membrane (ERM)
- VMT with associated macular holes less than 400 microns in size
Full thickness macular holes in the absence of VMT
(Not a candidate for Ocriplasmin)

ERM and Lamellar Macular Holes
(Not a candidate for Ocriplasmin)

Vitreo Macular Traction

67 year old woman with 4 week history of fluctuating vision referred for retinal evaluation. VA measured 20/60
Treated with JETREA
She called later that evening describing “a firework show” and multiple large floaters in her vision. Seen the next morning.....

On examination a PVD with release of traction was noted. Her vision is now 20/50 with subretinal fluid on OCT.

70 year old monocular man with 2 week history of blurred vision in his left eye. He was told he needed cataract surgery. VA measured 20/60-2
A small (stage 2) macular hole was noted on OCT and JETREA chosen as treatment. He returned for a recheck 2 days following JETREA injection. The vitreous adhesion has released and a PVD was noted clinically. The macular hole is closed although subretinal fluid is present. Current vision was 20/50.

The subretinal fluid resolved and the vision improved to 20/30.

Good Candidate or not?
Good Candidate or not?

A few we have treated at RMS

A few more we have treated at RMS
A few more we have treated at RMS

Summary

- So how do we follow these patients?

- Here is my suggestion for patients with "symptomatic adhesion/traction……

- Initial evaluation reveals symptomatic VMA/VMT. I will discuss the potential complications (ie: macular hole) and educate on the use of a home amsler grid.

- I will then see in 2 weeks and if unchanged then double the follow up interval until it releases or you refer.

Summary

- JETREA can eliminate need for surgery—shift toward medical not surgical retinal care

- High cost with low success rate mandates careful patient selection

- The key is appropriate education and follow up of your patient…

- Develop referral criteria with your retina colleagues…