NEGATIVE VERTICAL ASTIGMATISM – THE OPHTHALMOLOGIST'S FRIEND.

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I have, in my later years of surgery, attended a number of "Femtosecond Cataract Teaching Sessions,"

where

I was told that if my cataract patients were not receiving refractions near Plano = 6/6+, I am not providing them with current state of the art surgery and should feel compelled to change my technique.

These suggestions have strangely been contrary to my own experience whilst performing cataract and lens implant surgery over a period of 31 years (1982-2014). The patients who have embraced me most after such procedures, and I mean with a special thank you, perhaps a hug, a box of chocolates, or a bottle of wine, have usually had negative vertical cylinders between 1.25 and 2.50 dioptres at 60 to 120 degrees.

I have for years tried to achieve this vertical astigmatism by employing a horizontal entry wound at twelve o'clock. I feel comfortable because such incisions are protected from patients' fingers by the upper eyelid.

Modern pundits say a sutureless exposed lateral corneal incision is better because it produces negligible astigmatism and the lid margin blinking at right angles to it doesn't open it - versus my superior incision, where a strongly squeezing lid margin may depress the posterior lip of the wound.

To avoid my patients' lid margins opening their wound I have always placed a single 10/0 nylon suture in it, which I remove six weeks later. This has helped an elderly, fuddy-duddy ophthalmologist sleep better at night.

I believe it is important to use an IOL with very good optics, and am surprised that multifocal IOLs with diffraction rings are making a comeback. I remember their temporary market presence more than 20 years ago and patients with a diffractive IOL in one eye and a mono-focal IOL in the other preferring the latter even when they read 6/6 and N5 unaided with the former.

A negative vertical cylinder in each eye appears to enhance depth of focus, enabling both good distance and near vision.

As an ophthalmologist, who has always performed his own refractions, I can testify that sixty year old patients who have never worn glasses:

have either one emmetropic and one myopic eye,

or two eyes with negative vertical cylinders between 1.50 and 2.50 dioptres.

I have collected twenty bilateral pseudo-phakic cases to see if my afore-mentioned clinical impression stands up to clinical audit.

I have never co-managed surgery. I have always personally followed up my own surgical patients.

Let's start with **8** disadvantaged cases:

(1) MR. R. (dob: 1947).

- **This patient has significant bilateral hazy central corneal dystrophy and a past history of bilateral proliferative diabetic retinopathy treated with extensive pan-retinal laser photocoagulation.**

- **VR: -0.50/-1.50X100 = 6/6-2, 6/5-4**

- **VL: -0.50/-1.00X80 = 6/5-4**

- **V binoc unaided: distance = 6/9all; 6/6 partly.**

- **V binoc unaided: near = N6 easily; N5 with a struggle.**

- **Comment: I wear glasses but I could probably get away without them.**

(2) MRS. M. (dob: 1923).

- **Developed Sympathetic Ophthalmia after cataract surgery. Fortunately this is mild and remains well controlled on Gt. Prednephrine Forte qid R+L.**
- **VR: +0.25/-2.00 X 85 = 6/6-2**
- **VL: +0.75/-3.00 X 80 = 6/5-3**
- **V binoc unaided: distance = 6/9 all; 6/6 partly.**
- **V binoc unaided: near = N6**

(3) MRS. N. (dob: 1934).

- (R) dry senile macular degeneration; (L) disciform macular degeneration receiving Lucentis.

- VR: -0.25/-2.50X105 = 6/7.5 partly 6/6 partly

- VL: -1.50X60 = 6/7.5 partly 6/6 partly

- V binoc unaided: distance = 6/6 partly.

- V binoc unaided: near = N5

(4) MRS. P. (dob 1925).

- **Bilateral dry senile macular degeneration; significant degree of dementia.**

- VR: -1.25X105 = 6/6-3

- VL: +0.50/-1.75X85 = 6/6

- V binoc unaided: distance = 6/9-2; 6/6-3.

- Vbinoc unaided: near = N6 easily; N5 partly.

(5) MRS. K. (dob 1929).

- **Bilateral dry senile macular degeneration. On OCT average "Ganglion Cell Layer Thickness RE = 64 (thinnest 1%) LE=66 (thinnest 5%)."**
- **VR: -2.00 X 115 = 6/6 partly**
- **VL: +1.00/-3.00 X 90 = 6/6 partly**
- **V binoc unaided: distance = 6/9-2.**
- **V binoc unaided: near = N6 easily; N5 a few words.**

(6) MRS. P. (dob 1932).

- **Bilateral clearly demarcated dry senile macular degeneration, Parkinson's Disease.**
- **VR: +0.50/-1.50X105 = 6/9 partly; 6/7.5 partly**
- **VL: -0.75/-1.00X80 = 6/7.5**
- **V binoc unaided: distance = 6/9-2.**
- **V binoc unaided: near = N6.**

(7) MRS. P. (dob 1946).

- Preoperatively a high astigmatic hypermetrope, with convergent strabismus, an amblyopic (R) eye, and poor binocular function.

- VR: +1.50/-3.00X120 = 6/9 partly

- VL: +1.50/-3.75X90 = 6/5-1

- V binoc unaided: distance = 6/6-1.

- V binoc unaided: near = N8 easily; N6 with difficulty.

- Comment: The most amazing thing about my surgery is how well I see without glasses.

(8) MRS. K. (dob 1932).

- **This lady, like (7) had higher than average final astigmatism.**
- **VR: +0.75/-4.00x120 = 6/5-2**
- **VL: +0.75/-2.25X80 = 6/5**
- **V binoc unaided: distance = 6/6 all.**
- **V binoc unaided: near = N5 easily.**

(9)MRS. S. (dob 1928).

- VR: +0.50/-2.00X100 = 6/6-1
- VL: +0.25/-1.75X80 = 6/5-1
- V binoc unaided: distance = 6/6-2.
- V binoc unaided: near = N6.
- Comment: I never wear glasses. I don't want any.

(10) MR. K. (dob 1937).

- VR: -0.50/-1.75X105 = 6/4

- VL: -0.50/-1.25X110 = 6/4

- V binoc unaided: distance= 6/9-2; 6/6-4.

- V binoc unaided: near = N5.

- Comment: I only wear glasses when it is very dark.

(11)MRS P. (dob 1939).

- VR: -0.50/-1.50X100 = 6/5
- VL: +0.50/-2.00X100 = 6/6-2; 6/5 part.
- V binoc unaided: distance = 6/6-1; 6/5-1.
- V binoc unaided: near = N6.
- Comment: I can do most things without glasses, even thread a needle.

(12) MR. S. (dob 1937).

- VR: -0.50/-1.75X110 = 6/5
- VL: -0.25/-1.00X90 = 6/4
- V binoc unaided: distance = 6/5 partly.
- V binoc unaided: near = N5.
- Comment: I am very happy not wearing glasses.

(13) MRS. B. (dob 1927).

- VR: -0.50/-2.00X110 = 6/5
- VL: -0.50/-2.00X70 = 6/5
- V binoc unaided: distance = 6/6 partly.
- V binoc unaided: near = N5.
- Comment: I never wear glasses.

(14) Mr. P. (dob 1939).

- VR: +0.50/-2.00X100 =6/4
- VL: -1.75X85 = 6/4
- V binoc unaided: distance = 6/5
- V binoc unaided: near = N6 easily N5 comes and goes.

(15) MRS. W. (dob 1932).

- VR: -0.75/-1.25X115 = 6/5
- VL: -1.00X100 = 6/5
- V binoc unaided: distance = 6/6-2; 6/5-2.
- V binoc unaided: near = N5.

(16) MR. G (dob 1932).

- VR: +0.50/-1.75X110 = 6/5-2
- VL: -1.00/-1.00X50 =6/5 partly
- V binoc unaided: distance = 6/5-3.
- V binoc unaided: near = N5 with difficulty.

(17) MR. R. (dob 1926).

- VR: +0.75/-0.50X100 = 6/6-3
- VL: +1.25/-2.25X70 = 6/5-1
- V binoc unaided: distance = 6/6-2; 6/5-4.
- V binoc unaided: near = N5.

(18) MRS. O. (dob 1928).

- **VR: -1.00/-1.75X110 = 6/6-2; 6/5 partly.**
- **VL: -0.25/-1.25X120 = 6/6-2; 6/5-2.**
- **V binoc unaided: distance= 6/6-2.**
- **V binoc unaided: near = N5.**

(19) MRS. D. (dob 1941).

- VR: -0.50/-1.25X115 = 6/5
- VL: -1.50X130 = 6/5
- V binoc unaided: distance = 6/5-1.
- V binoc unaided: near = N5.

(20) MRS. H. (dob 1937).

- VR: -1.25X70 = 6/5-2
- VL: -0.50/-1.25X115 = 6/5-3
- V binoc unaided: distance = 6/7.5
- V binoc unaided: near = N5.

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