

ALGORITHM IN MANAGEMENT OF A-V STRABISMUS

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Introduction

- A-V patterns are early described during fifties (Urrets-Zavalía).
- They remain debatable regarding their etiology & management
- Failure to recognize A-V pattern cause over/under correction of horizontal strabismus (1ry – down).

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Theories

- Several theories have been proposed dealing with:
 - Specific etiology
 - Specific treatment

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Etiology

- Horizontal recti
- Vertical recti
- Oblique muscles theory
- Abnormal muscle insertion
- Orbital factor
- No definite pathophysiology

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Surgical plan

- Oblique muscle surgeries
- Vertical transposition of horizontal muscle.
- Horizontal transposition of vertical muscle.
- Slanting recession.
- Combined oblique with horizontal muscle
- No specific surgery can fit all types of A-V

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Indication of Therapy

- Asthenopia
- Diplopia
- Abnormal head posture
- Cosmetic
- Single binocular vision

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Aim

- To create a logical scheme for management of all types of A-V pattern.

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Requirements for preoperative evaluation

- Measurements of the angle in 9 directions
- Testing of fusion
- Torsion testing
- Abnormal head posture
- Optical corrections

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Different Surgical Protocols

- IO recession / anterior transposition
- SO Tuck
- Combining 2 oblique muscles
- Combined horizontal with oblique muscles
- SO weakening (tenectomy recession/ant)
- Vertical transposition of horizontal

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Classification of patients

- Patients having angle of 1ry less than 15 prism
- Patients having fusion in one gaze
- Patients having measurable torsion
- Patients having vertical angle
- Patients having oblique muscles dysfunctions

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Results of my algorithm

- Preoperative difference of A-V ranged from 15 to 50 prism (26.5)
- Postoperative Difference ranged from 0.0 to 14 prism (6.9)
- Mean collapse of A-V was 19.6 prism
- 83.5% having angle within 10 prism in 1ry & down gaze

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V XT with fusion down
IO Rec. 2.0 mm / Ant. 5.0 mm



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V ET & IO over-action
SO under-action



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SO Tucking 6mm OU + IO Rec.3 / Ant.6 OU with
Bimedial Recti Rec. 6.0mm



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A XT

SO Rec 3.0 mm / ant.4.0mm OU + 8.0mm Lat.

Recti rec. OU



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The best way to reach therapeutic decision:

- To measure carefully the angle in different directions of gazes
- To search for the over/under acting muscles
- Pseudo V pattern

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- Whether abnormal muscle insertion is truly displaced or whether this displacement is only apparent because of cyclotorsion of the globe
 - No single etiological factor can explain all A-V pattern

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Oblique muscle surgeries

- Myectomy of IO / graded recession
- Tenectomy of SO / graded recession
- Tucking of SO

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- Strengthening the SO opens the V
 - Weakening of IO closes the V
 - Weakening of SO closes the A
 - The above is essential whenever fusion is present

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Conclusions

- The surgical scheme:
- A-V & the horizontal angle less than 15^Δ
 - Oblique muscles only
- A-V & the horizontal angle more than 15^Δ
 - Combined horizontal & oblique muscles
- Unequal oblique ms. Dysfunctions or unilateral
 - Unequal surgery or unilateral

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Conclusions

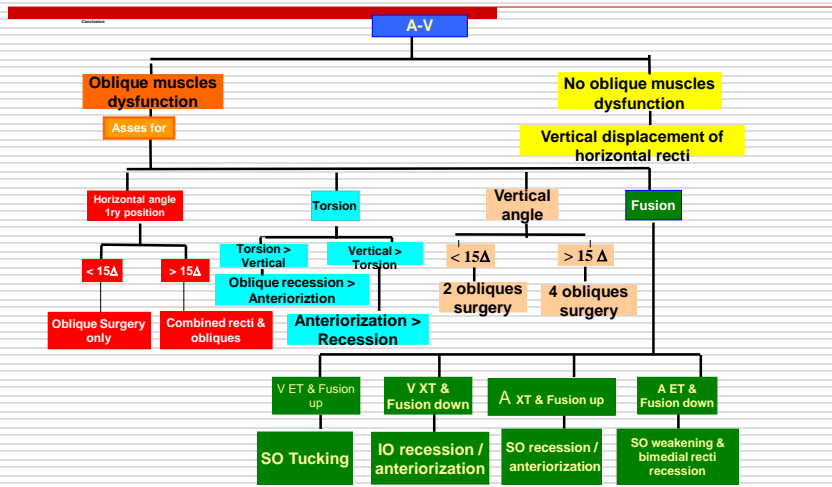
- Elevation more than torsion
 - Anterior transposition more than recession from the muscle insertion
- Vertical angle more than 15Δ
 - Combined IO & SO
- No oblique dysfunction
 - Vertical transposition of horizontal recti

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Conclusions

- V ET & fusion up
 - SO tucking less than 6mm
- V XT & fusion down
 - IO recession & anterior transposition
- A XT & fusion up
 - SO weakening
- A ET & fusion down
 - IO strengthening or SO with horizontal

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