Adjustable Surgery

Vincent Paris
History / introduction

- Boergen 1993 ESA
  "15 years experience of squint operation under topical anaesthesia in endocrine orbitopathy"

- Evens 2008 IOA
  "Non-adjustable strabismus surgery for vertical deviation in thyroid-associated orbitopathy"
History of adjustable

- Associated with hang bag sutures
- Problems of delayed overcorrection in IR recession
- Resession /resection
- Development of surgery under TA
- Adjustable with myopexia, in children
History of adjustable

- Some surgeons: extensive use

- Our practice:
  - less used (validity of position under anesthesia, duction, elongation)
  - progressively replaced by surgery under topical anesthesia
Adjustable planned but not performed

( peroperative adjustment according to the position under GA )
Indications: perop / postop adjustable sutures

- Reoperation
- Large angle
- Small angle
- Diplopia
- Incomitance
- Latent deviation (excyclo, exophoria)
- Acute overcorrection (included lost muscle)
Sometime very useful in surprising result anyway……
Side effects: Releasing or breaking suture ....
Resolved rather easily
Preop : X’14  O !
Postop : X’2  E2
Selection of the patient

- Actually more selective for adjustment after than for surgery under topical anaesthesia
- Age $\geq 20$ years ($20-78$; mean: $45$)
- Surgery limited on two muscles
- No predictable large adherences
- No myopexia
Method: perop adjustment

• Same approach than Putteeman in 1993
• Limited topical
  (Two minims of tetracaine 0.4%)
  - less corneal oedema!
• *In both eyes*
  - global diminution of sensibility
  - easier to open the non-operated eye
Method: perop adjustment

- False pure topical anaesthesia
- Subconjunctival injection of 0.2 cc 2% xylocaïne + A
- Let the whole face free from operating field
- Let some friend or relative coming in the operating room (if possible)
- Propose a relaxing music
- Speak with the patient all the time
Common aspects of both techniques

- Difficulty of adjustment:
  1. Superior Rectus
  2. Medial Rectus
  3. Inferior Rectus
  4. Lateral rectus
- No adjustment for Superior Oblique
- No need for monitoring
Clinical measurements

- Cover test
- Gracis Grid
  (quantification dynamic sensibility of diplopia, analysis of cyclodiplopia)
Particularity of posop adjustment

• Adjustment is delayed
• We shorted progressively the delay (1-2 hours)
• In the recovering room or in the patient’s room
• Clinical evaluation in a seated position
• Adjustement in semi-seated position
• Conjunctiva is not systematically closed
Particularity of postop adjustment

- No limbal incision
- 2 knots in conjunctiva on both sides of adjustable suture
- 2 double knots and half one to maintain the adjustable suture
Simplification with the time

- Classical use of 5 zero vicryl
  We used Biosorb (as advised by Neumann J AAPOS 99)
  We used Healon (Clorfeine 87, Paris 90)
Particularity of perop adjustment

- Adjustment of the Inferior Oblique
- Amount of recession, anterotransposition...
DEMONSTRATION OF PEROP ADJUSTMENT
Indications ( N = 93 )
2002 - 2007

- Extorsional Syndrome 46 ( unilat : 40 )
- IR fibrosis 16
  ( basedow, blow out, post cataract, congenital )
- MR palsy 4
- LR palsy 9
- SR contracture. 4
- Skew 1
- Small Eso 4
- Small Exo 5
- Opposed near/distance deviation : 1
- SOOA 1
- DVD 2
Results

• Overcorrection
  - restriction in elevation after IOAT +2 : 1
  - IR : 3
  - SR : 3

• Undercorrection
  - opposed deviation (solution ?) : 1
  - SOOA : 1
We learned ....

- Superior Rectus Contracture
  
  “Jampolsky Syndrome” does exist?
  Paris ESA 2008

- Associated with latent extorsion
- Consequence of latent extorsion
- Decrease or disappear after single oblique surgery
- SRR seems to be necessary but lead to hypotropia .........
DEMONSTRATION OF POSTOP ADJUSTMENT
Semi-adjustable technique for IR

Our practice: classical adjustment, then scleral fixation with non-absorbable suture
Adjustment with myopexia
Tandem technique of Helveston
Classical method
Adjustment in children

• Chan, Rosenbaum, Hall 1999  Eye aged 7-15 y , 27 % adjusted , success 74%
• Dawson, Bentley, Lee 2001  Strabismus success 74 %
• Engel, Rousta 2004 J AAPPOS success 88%
Adjustment in children

- Guyton and coworkers 2008 J AAPOS
  - comparison with a matched group with non-adjustable surgery
  - success rate:
    - adjustable group 85% (N = 298)
    - non-adjustable group 75% (N = 98)
  - method: 20% with drops / 80% with..propofol
Adjustment in children

- Osama Hakim  J AAPOS  2005
- Releasable adjustable suture to decrease recession of MR in esotropia
- Initial success : 64 %
- After adjustment : 93 %!
4 mm
Conclusion

• Adjustment takes part to our routine
• We progressively reduced the indications
• We operate now many cases under pseudo pure topic anaesthesia
• Adjustable in children ? With myopexia ?
• Don’t be afraid to do that
I'm happy

Thank you for your attention