

Anterior Segment Ischemia After Strabismus Surgery for 3rd Nerve Palsy

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Outline

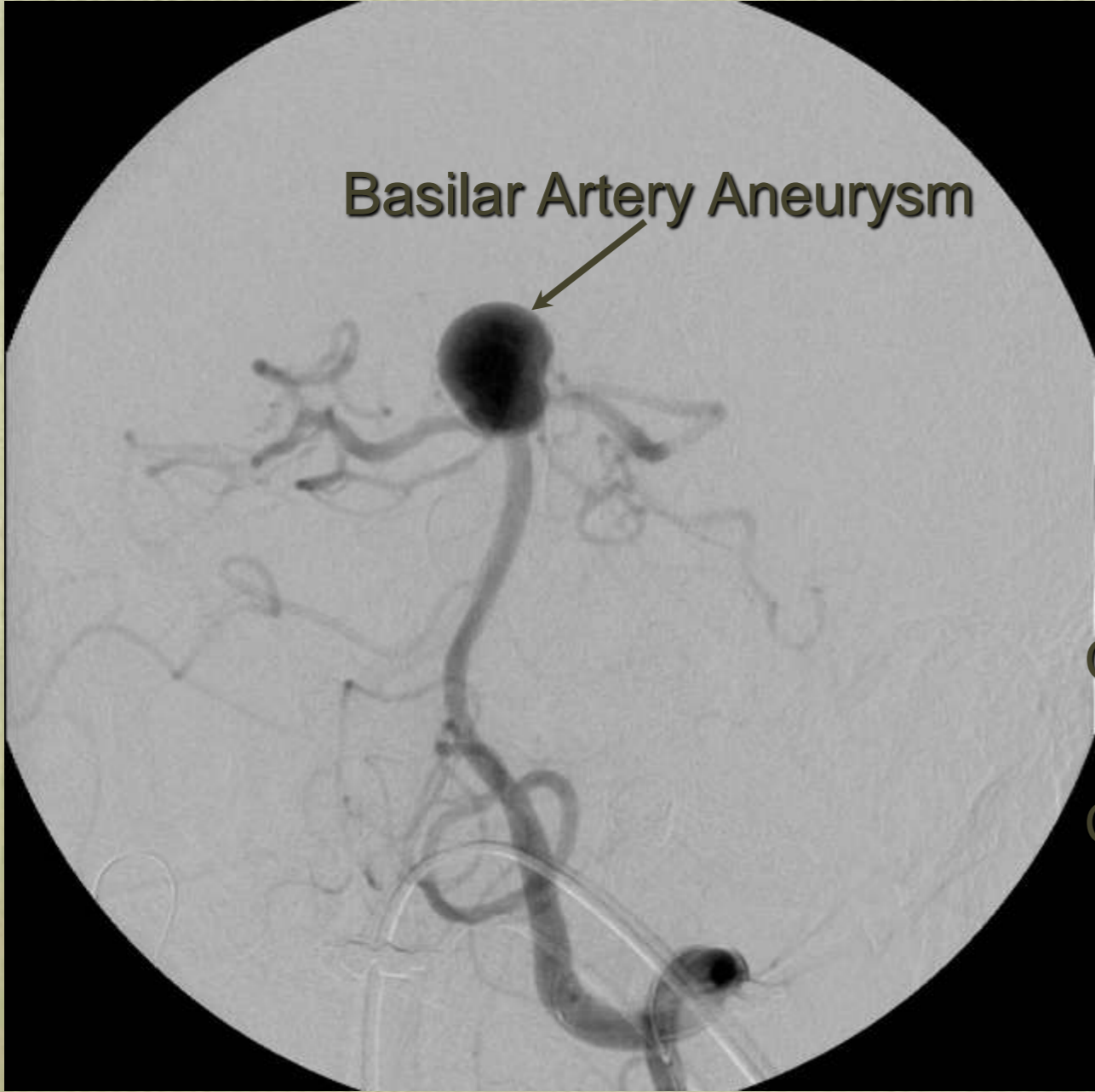
1. Bilateral nuclear 3rd nerve palsy + vertical gaze palsy
2. Strabismus Surgery
3. Anterior Segment Ischemia

Case History

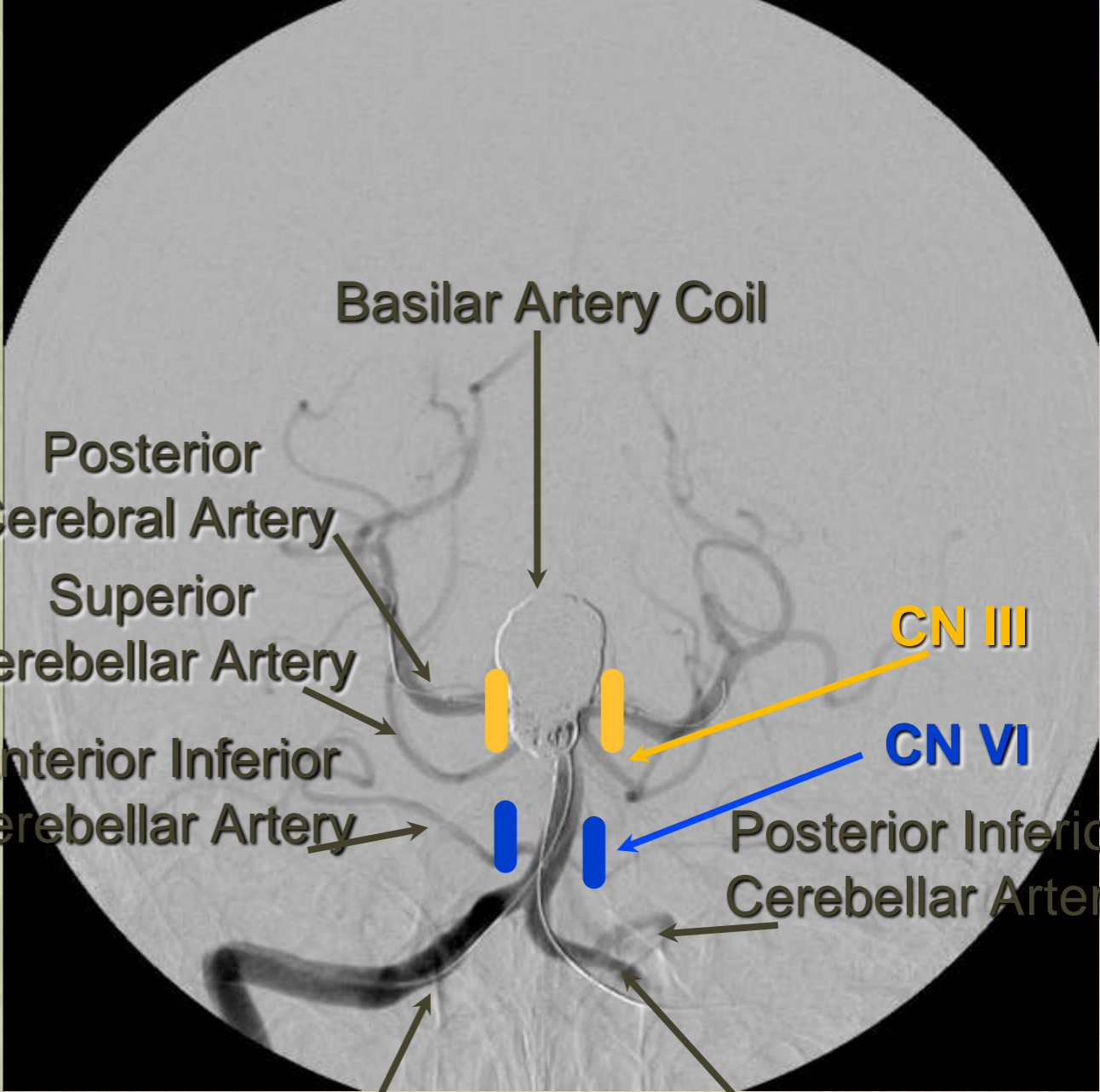
- 41 yo F, hx of dizziness x 5 yrs, head CT
- January 10, 2008 CT: basilar artery aneurysm, 15 mm diameter
- Neurology, Interventional Radiology
 - Informed Consent
 - “uncertain benefits” + “endovascular risks described
 - SAH risk, death

Cerebral Angiogram

Pre-Embolization



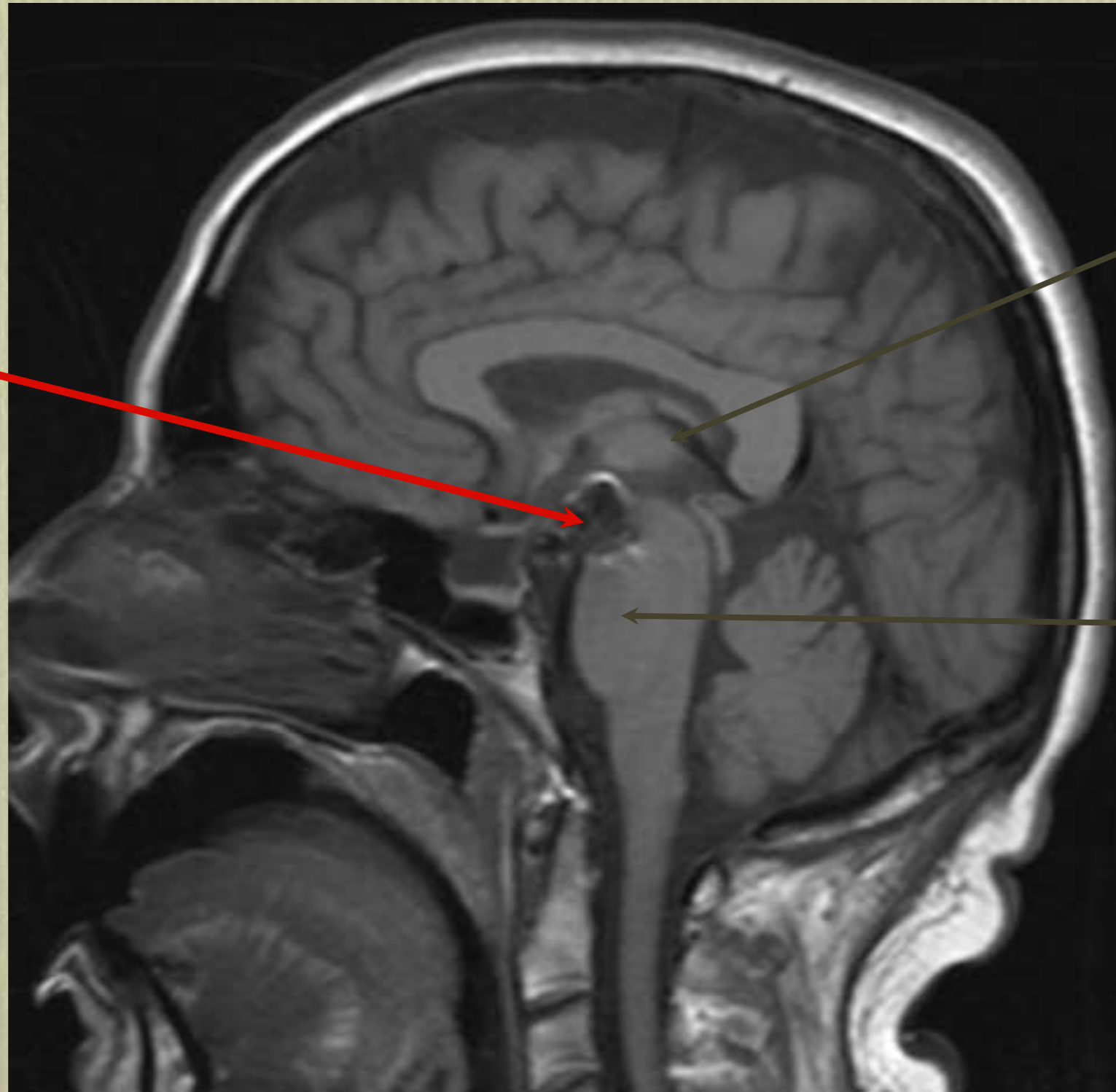
Post-Embolization



Case History

- Post-op SAME day
 - Hx - drowsiness, **oculomotor paresis**, **bilateral ptosis**, paresis of Rt arm
 - Suspect basilar artery thrombosis ~ repeat cerebral angio
- Angiogram - occlusion of midbrain perforating arteries

MRI



**Basilar Artery
Aneurysm Post
Embolization**

Thalamus

Pons

Case - Neuro Follow-Up

- July 2008
 - EOM “gradually improved, especially **left** eye”
 - Better function of eyelids **ou**
- September 2008
 - “**Left** pupil + EOM normal”
 - **Right** eye EOM “still problematic”

April 28, 2010 - Ophthalmology

- c/o diplopia
- POHx - nil
- VA - 6/7.5 OD, 6/6 OS
- Pupils - OD 3 mm, poor reaction; OS 2 mm, normal
- IOP + anterior segment normal

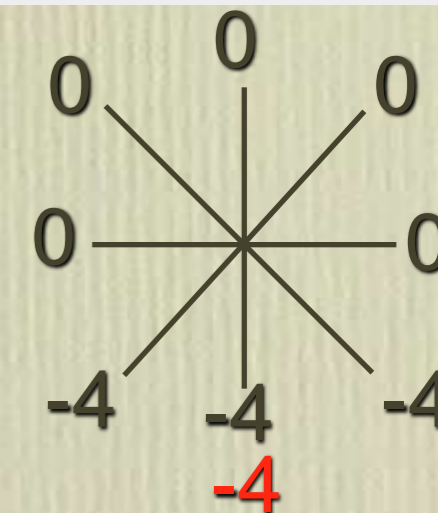
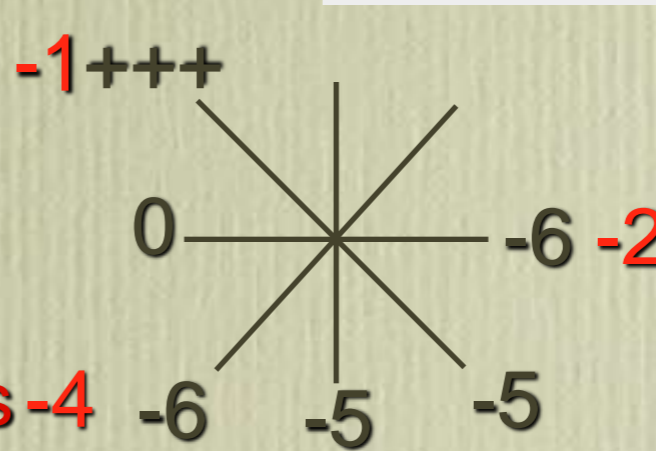
April 28, 2010



RXT' 70
RHT' 30

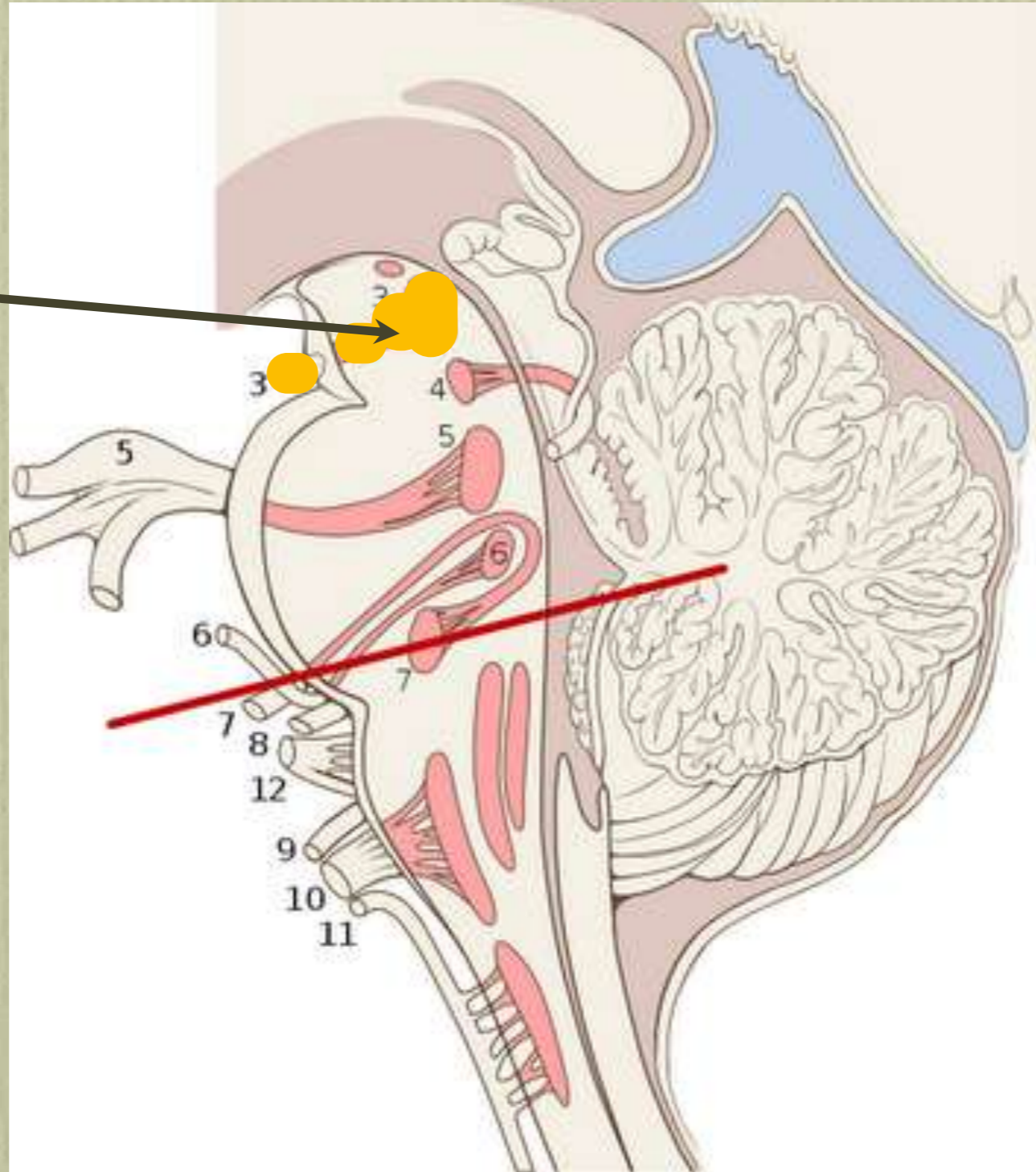


**Bilateral Nuclear 3rd
Nerve Palsy (superior
division recovery)
+ Bilateral Vertical
Gaze Palsy**



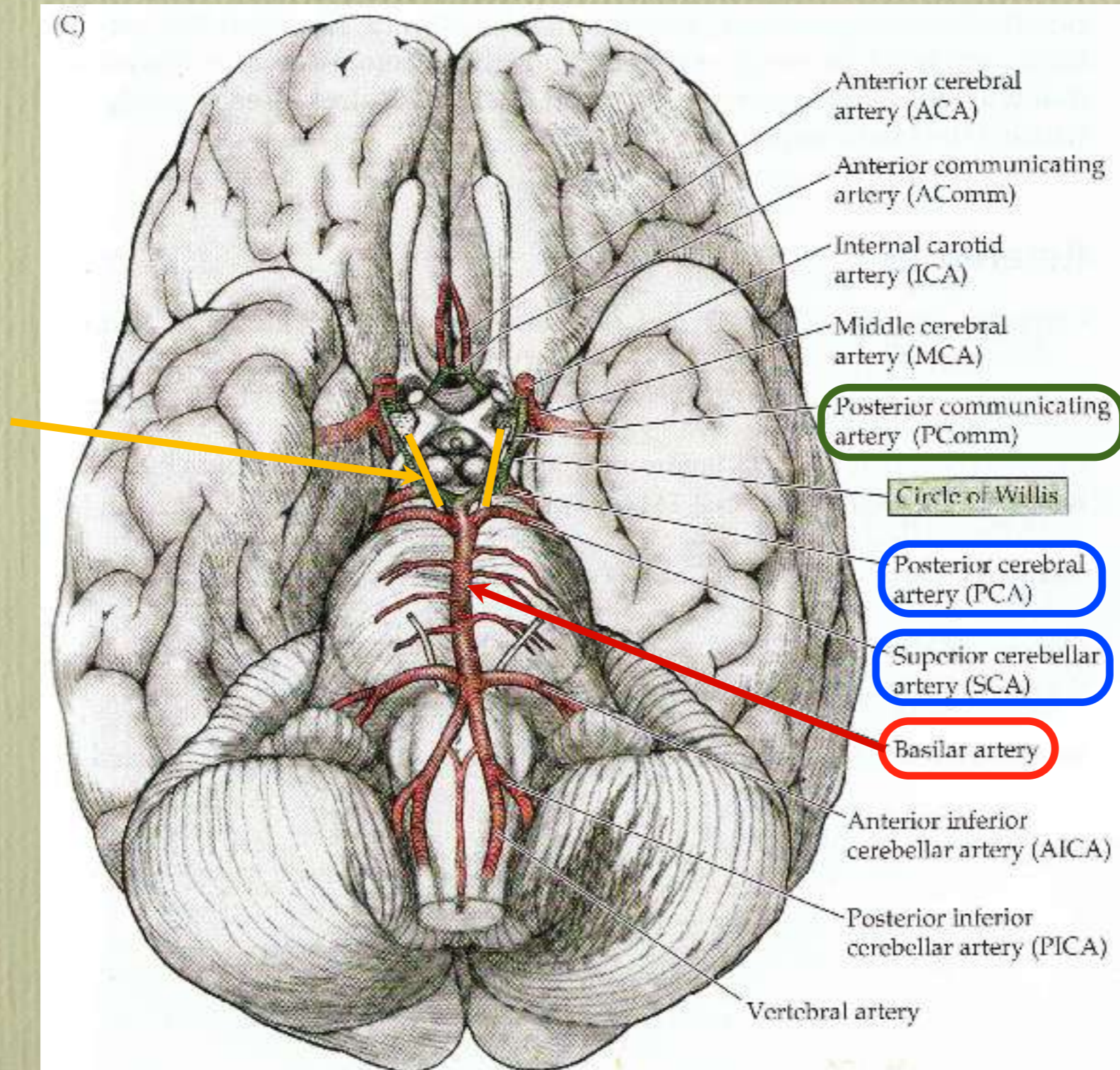
CN III Pathway

CN III



CN III Pathway

CN III



Bilateral Nuclear IIIrd Palsy

Superior Division Recovery
Inferior Division Remains



RXT' 70
RHT' 30

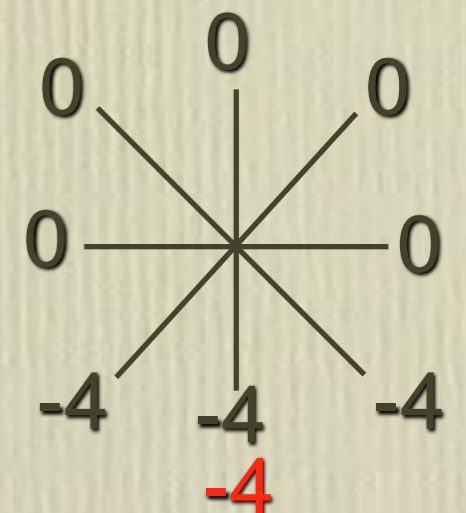
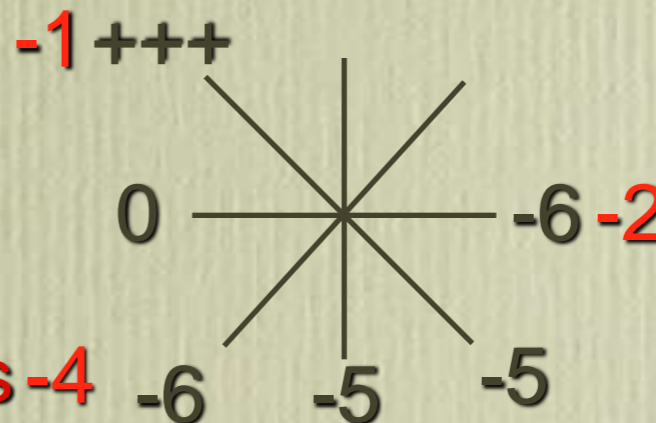


Bilateral Vertical
Gaze Palsy



Pupils - OD 3 mm, poor reaction
OS 2mm, normal reaction

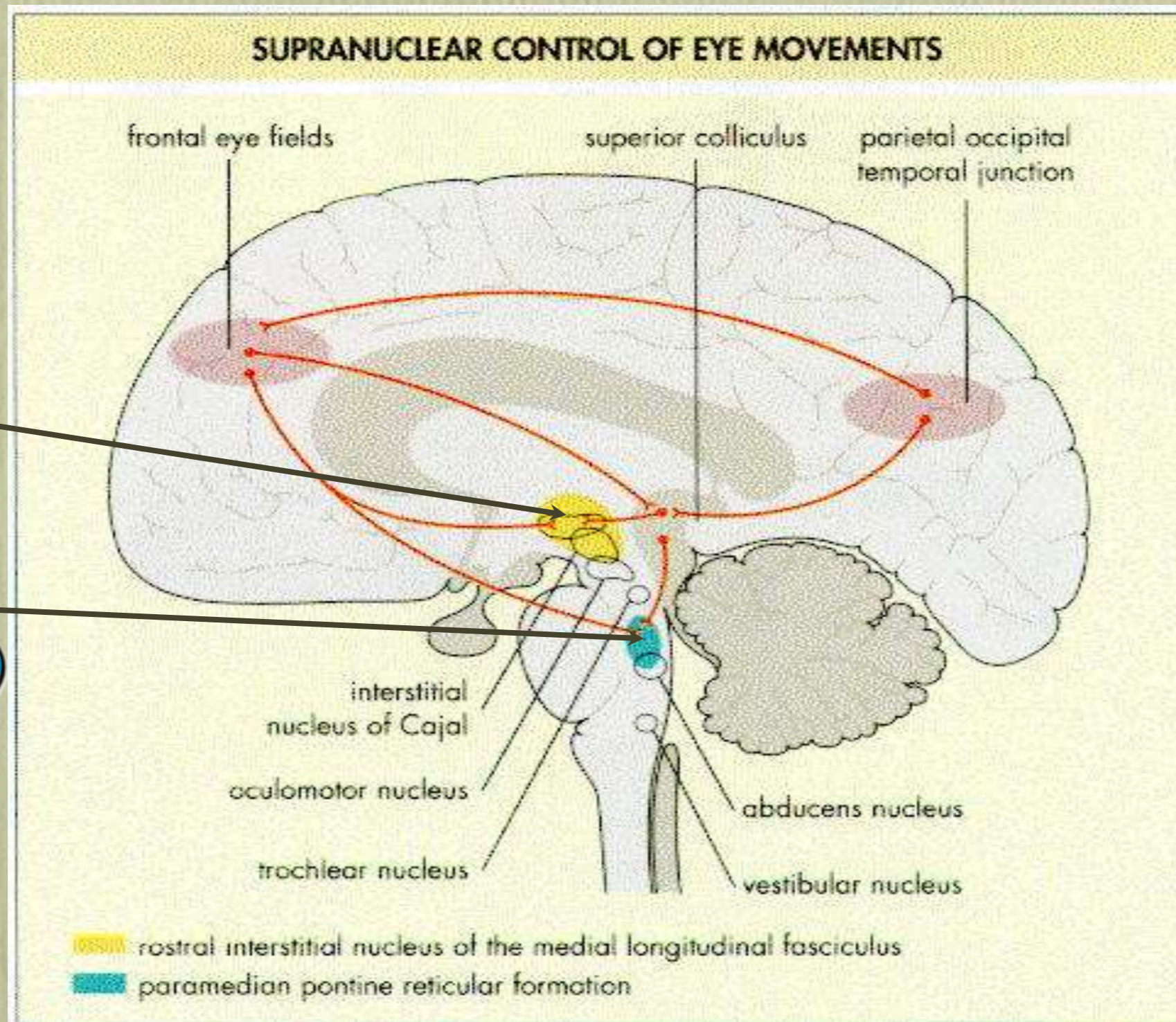
Saccades -4



Gaze Palsy

riMLF
(vertical mvt)

PPRF
(horizontal mvt)

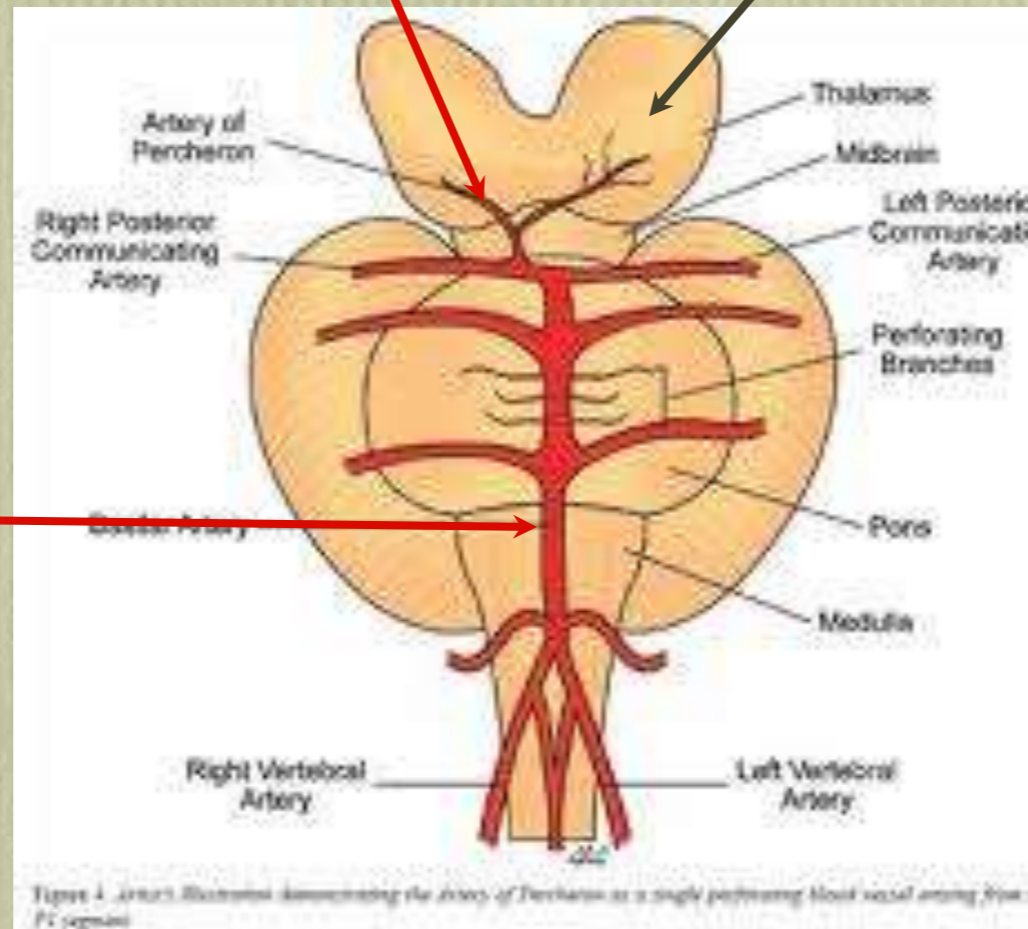


Gaze Palsy

Artery of Percheron

Thalamus

Basilar Artery



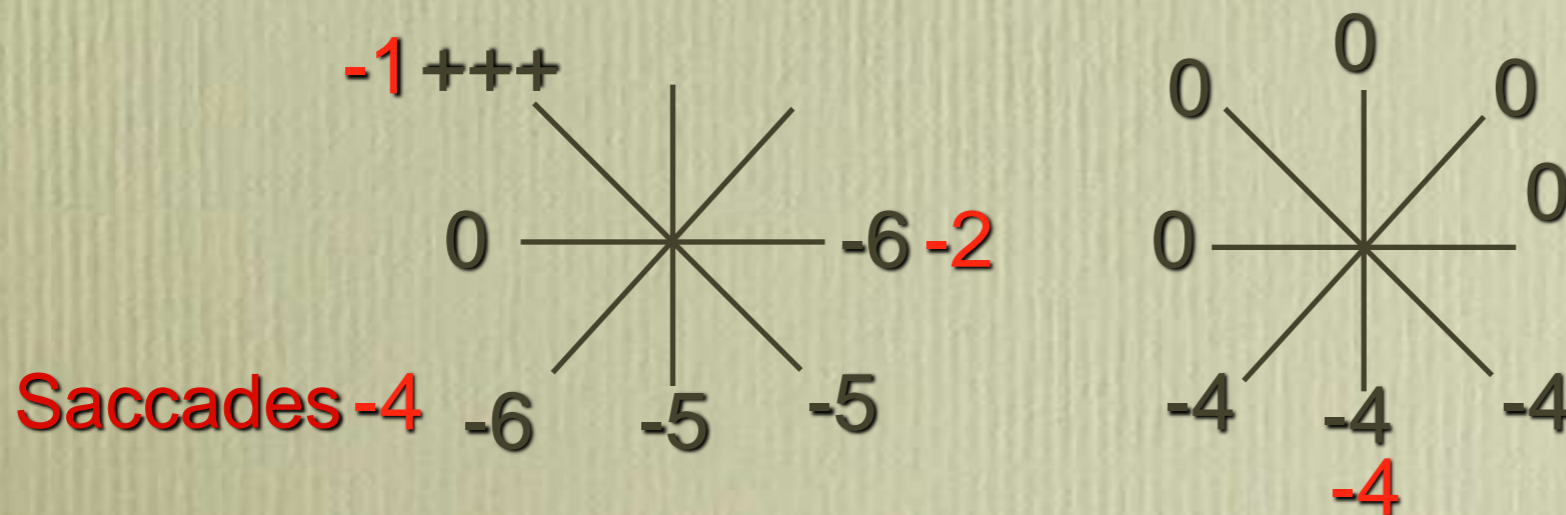
Plan for Strabismus Treatment

- RMR resect/RLR recess + RSR recess/RIR resect
- Written consent

1. No binocular vision possible
2. Will definitely see double after
3. Impossible to have full correction of RXT
4. ASI possible - operate on all 4 rectus muscles



RXT' 70
RHT' 30



Post Op #1 - April 28, 2010

- RSR recess 8mm + RIR resect 5mm (adjustable)

OD Elevation -2

RXT' 70
RHT' small



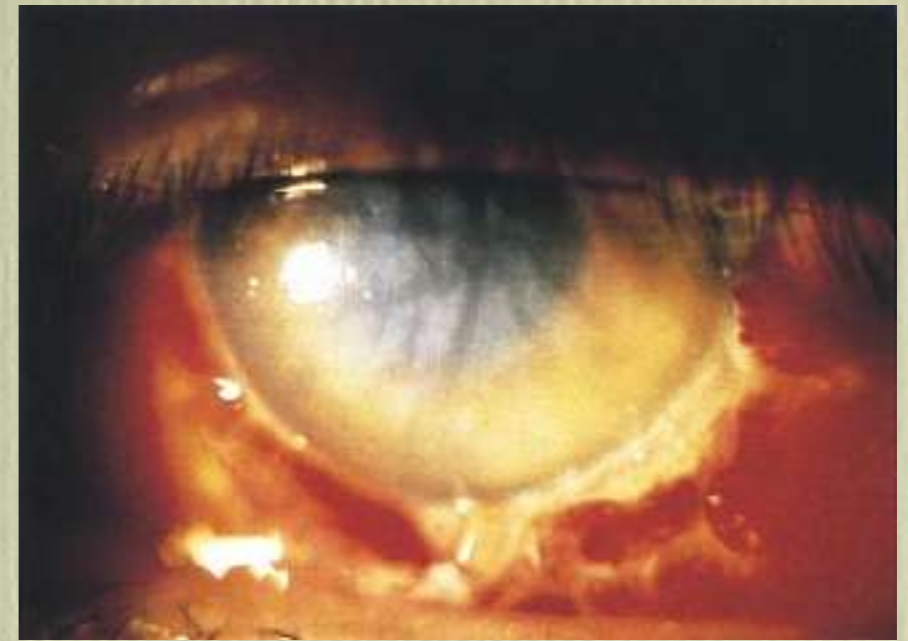
Post-Op #2 - October 20, 2010

- RMR resect 9.5mm + RLR recess 12mm (adjustable)



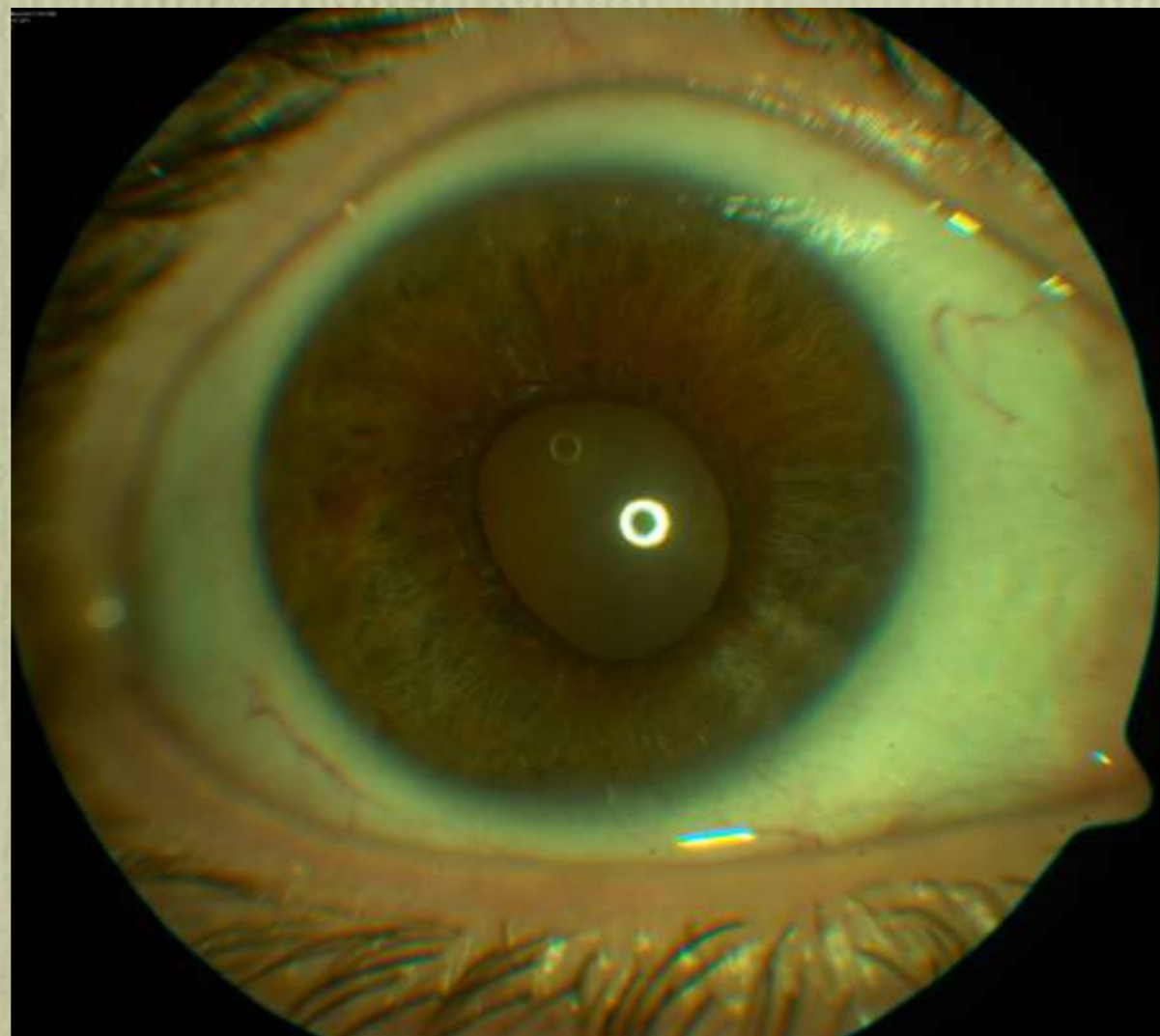
ASI - Clinical Findings

- Incidence = $< 1/13,000$
- Signs:
 - mild, self-limited iritis
 - iris ischemia + atrophy
 - striate keratopathy
 - posterior synechiae
 - cataract
 - phthisis bulbi



Post-Op Course

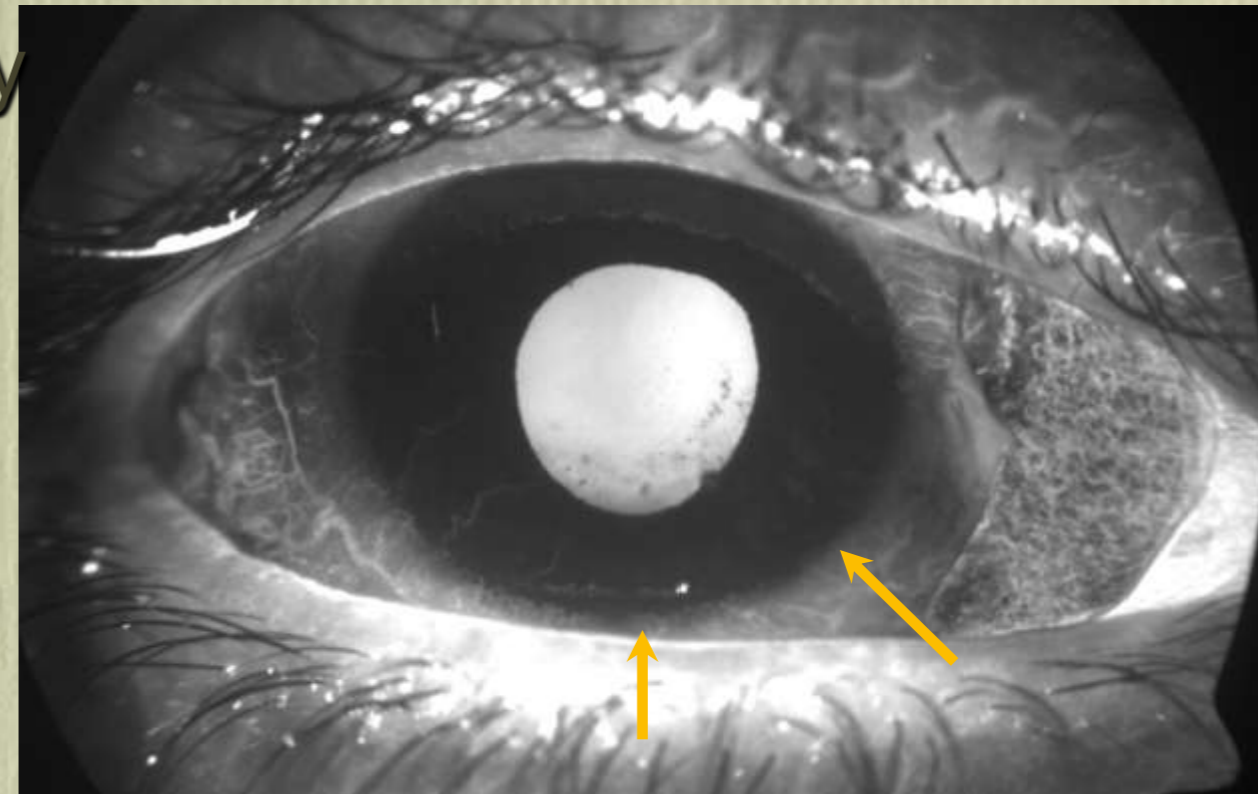
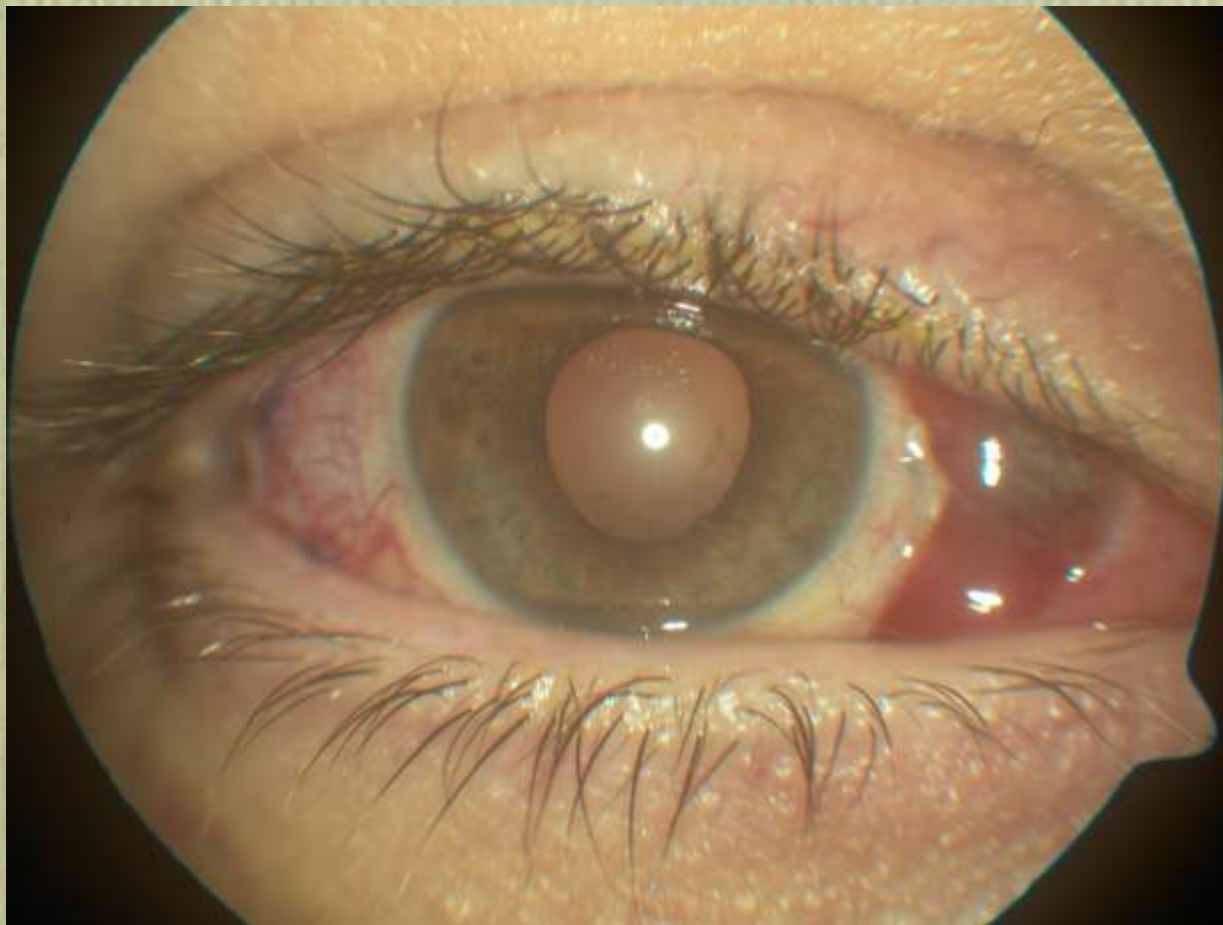
	VA	IOP	Cornea	AC cells	Right Pupil	PF gtt	Pred po	Tobra dex	Mydriacyl	Phenylep Tropic
21-Oct-10	20/70-		1+ DM folds	1+ cells	sluggish	q2h	80 mg	qid	bid	
5-Nov-10	20/50+	<8	haze 5 o'clock	occ cells	PS inferiorly	q2h	30mg	D/C	D/C	bid
21-Jan-11	20/20	10	clear	occ cells, 1+ flare	atrophy inferonasal	tid	3mg			D/C
April	20/20	12	clear	occ pig		D/C	D/C			



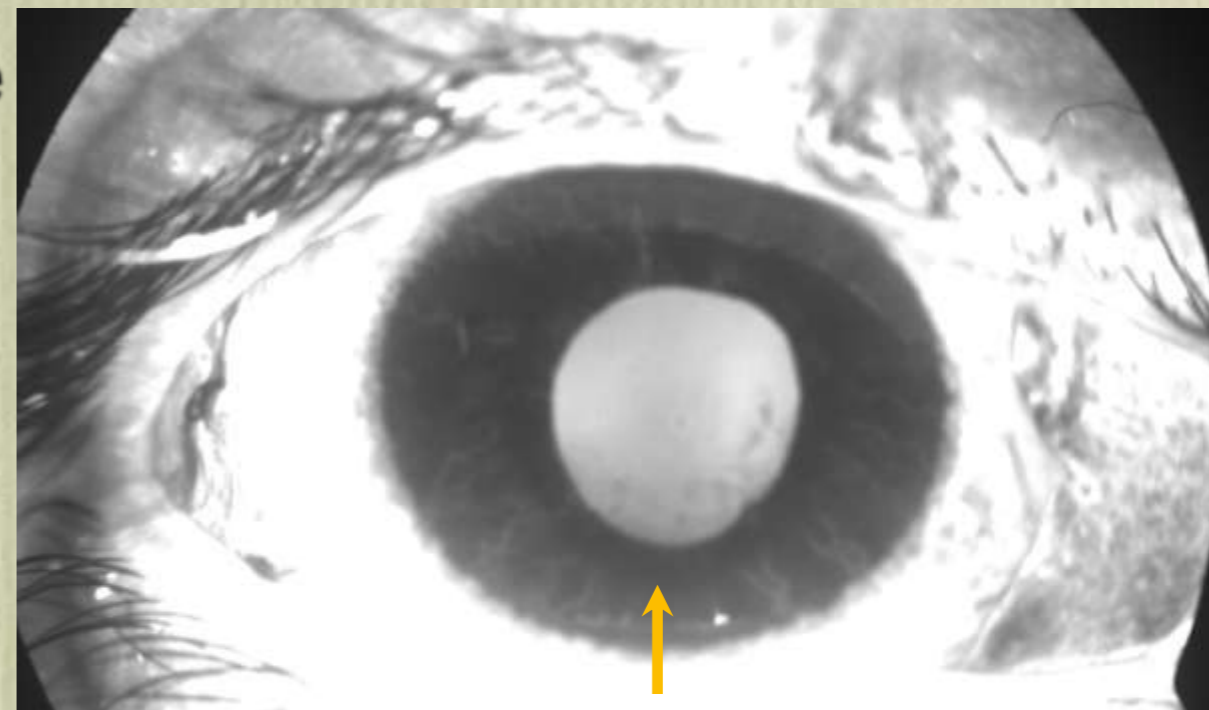
Iris FA

Few days after 2nd strabismus surgery

Early - delayed filling inferonasally



Late



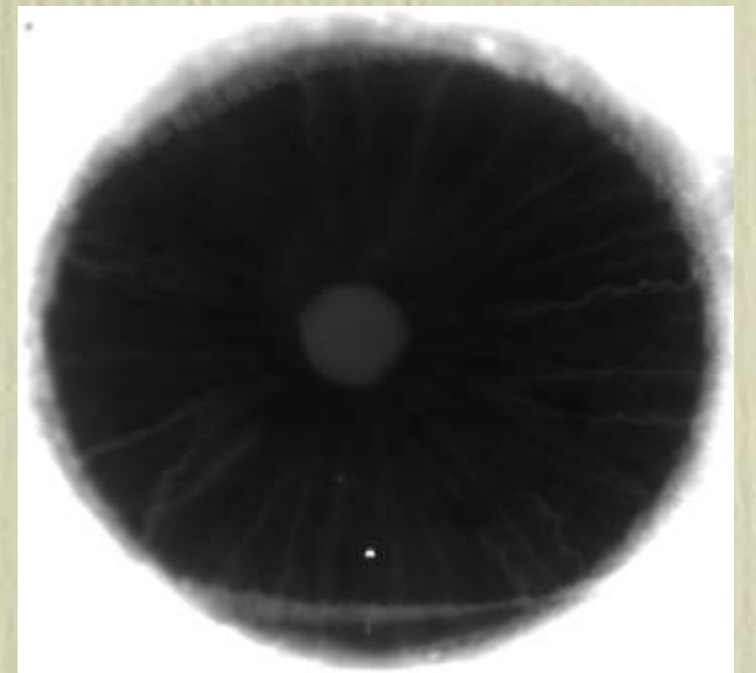
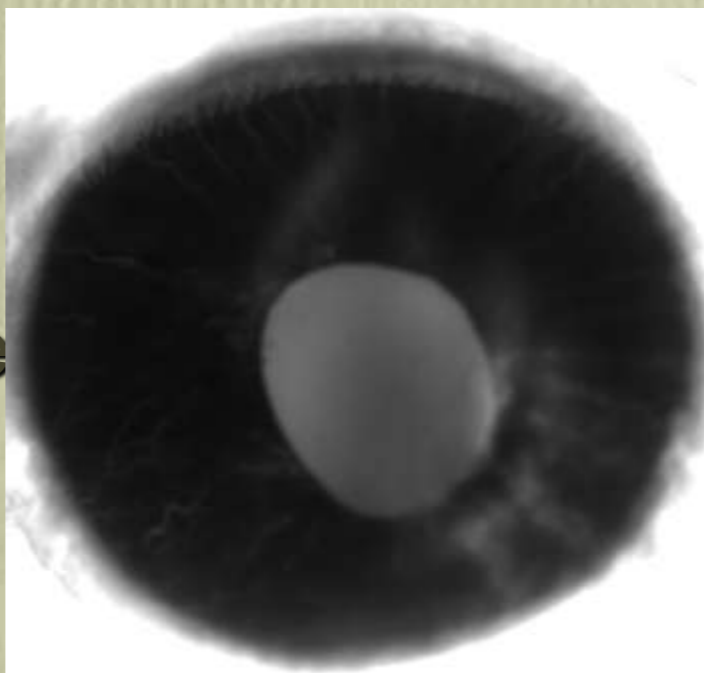
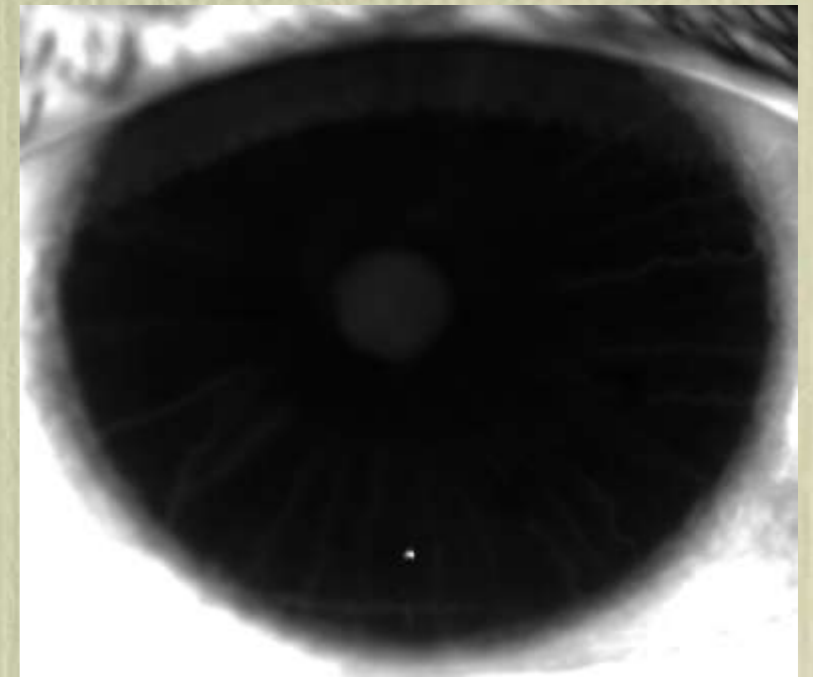
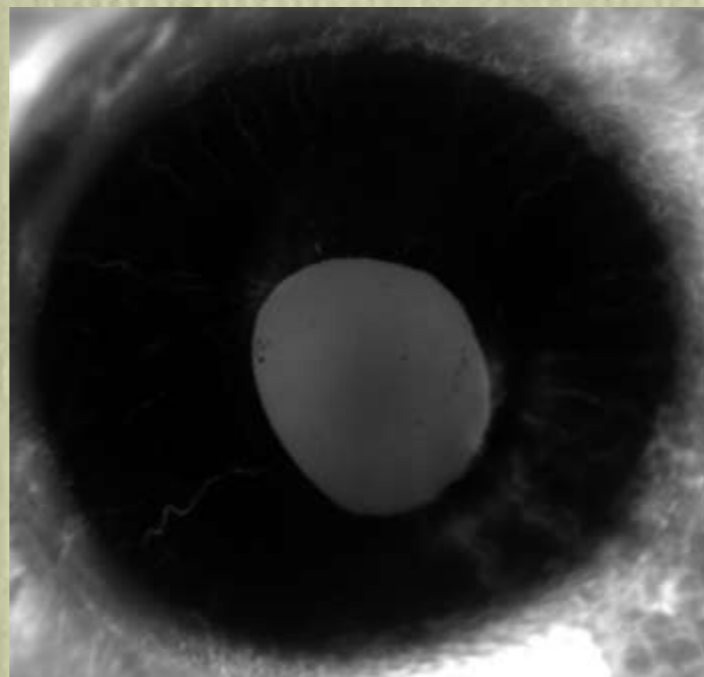
Iris FA

3 months after 2nd
strabismus surgery

Punctate staining @ 5 o'clock
+ stromal opacification

Early - leakage in
inferonasal area

Late - leakage



Conclusion

- Embolization treatment can lead to CN palsies
- Difficult case - large XT, hypertropia + paretic muscles
- ASI - no proven treatment
 - Usually good prognosis

Pre-Op



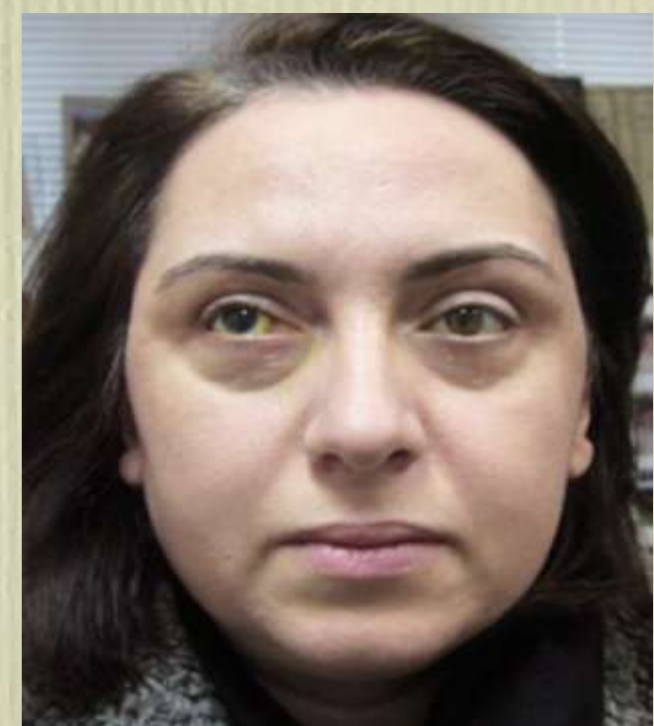
Post-Op #1



Post-Op #2



5 months post
2nd OR



References

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