



Heroin withdrawal and strabismus

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The whole literature

Mention en passant

- Himmelsbach Ann Intern Med 1941:829–39.
- Ream in 1975 text Medical Aspects of Drug Abuse

Cases

- Firth 3 cases Eye 2001;15: 189-192
- Landau EUNOS poster 7 cases 2001
- Kowal 5 cases BVQ 2003;18:163-166
- Firth BJO 2004;88;1186-1190

Withdrawal diplopia: Known to drug rehab Drs

Victoria, Australia 4+ million

400 Drs use methadone for addicts

84 : >25 pts a year [some >100]

We interviewed 51 / 84

46 Drs: only methadone

5 Drs: naltrexone

2/46: 5 cases of strab

2/5: ~30 cases of strab

3/5: visual problems - no strab

... naltrexone detox more likely to
cause strabismus than other
withdrawal regimes

Firth series : UK

69 pts in a commercial detox unit who:

- complete a pharmacologically assisted 5 day detox program [sedatives, antipsychotics, naltrexone] &
- Participate in eye exam before / after

+ 14 others declined 'after' exam

A Y Firth, S Pulling, M P Carr and A Y Beaini

Orthoptic status before and immediately after heroin detoxification

Br. J. Ophthalmol 2004;88;1186-1190

Firth: 'normal' detox cohort : day 5 exam

- **>1/2 develop visual symptoms**
- **1/2 develop diplopia**
- **1/4 develop acq ET**
- **Course unknown**
- **Most must improve**

Kowal series 5 cases

- **Selection bias - problem persists or is severe / worrying enough to see a strabismus specialist**

#1: uncorrected +

- 23 yo WCM
- Previous pharmacologically unassisted withdrawals → no diplopia
- Diplopia since day 2 of naltrexone 30Δ ET
- **Cyclo +2**
- Manifest +: week 1 : plano
- Week 5:+1
- Week 11: sc 25Δ ET, +1 10Δ ET
- Normal radiology

#2: spasm of accommodation & ↓ motor fusion potential

- 27 yo WCF variable ET since naltrexone
- Previous diplopia when waiting too long for heroin doses
- 8 mo after naltrexone: ET/ ET' 25Δ. **Smooth pursuit asymm & latent nystagmus**
- cyclo +1. Manifest refraction -1. [**pseudomyopia 2DS**]
- 11 mo: straight. Fusion divergence D 4 Δ, N 10 Δ. Stereo 70".
- Normal radiology

#3: symptomatic high+ camouflaged by heroin

- 34 yo WCF.
- Vision 'sharp' after heroin dose. Over next 4-8 h → progressive blurring & ET
- sc R 6/8, L 6/48. Small ET
- Cyclo R +4.5, L +7-2x15
- Rx: pilocarpine prn during detox

#4: long history accomm problems

- 25 yo WCF. Clonidine assisted withdrawal 2y previously → H diplopia
- >10 yr history of accomm problems
- i/mitt use of low+ & Δ gls
- #1: ET 15 Δ , E' 13 Δ
- #2: straight with reduced fusion range
- Declined cyclo refraction [drugs!]

#5:

- 30 yo WCM 'sedative - assisted' detox
→ diplopia X2
- ET 25 Δ, ET' 30 Δ
- No manifest +
- Declined cyclo

Summary Kowal 5

- 4/5 had objective strabismogenic features - uncorrected +, oblique dysfunction, SPA, LN, amblyopia, hypoaccommodator,

Kowal c.f. Firth

- Firth's cases not cyclopleged
- Hyperopia may have been missed
- Strabismogenic associations found by Kowal may have been present in some of Firth's cohort

Hypothesis 1

- Chronic miosis of narcotic use → ↓ need for accommodation
- → ↓ accommodative convergence
- → ↓ need for fusional divergence
- → 'disuse atrophy' of motor fusion system

Hypothesis 2

- Return of normal accommodation requirements
- → normal convergence
- + 'disuse atrophy' of now inadequate motor fusion
- → ET

Hypothesis [cont]

- Explains 4 of our cases
- Doesn't explain 25% incidence on day 5 of Firth series
- 'physiological turmoil'
- Accommodative side effects of 'accessory' medications

Heroin Detox diplopia

- Common
- Under recognised in ophthalmology
- Persisting cases often have pre morbid features
- Thank you

Firth : day 5 exam

- 50/ 69 : ocular symptoms.
- 17: blur D &/or N
- 14: diplopia
- 19: blur and diplopia
- Σ 33/69 have diplopia

On day 5,

- 26 : symptoms were improving
- 24: worsening or no change

Table 3 : Cover test findings

(numbers refer to number of patients)

	Day 1	Day 5	Day 1	Day 5
	Near n=83	Near n=69	Far n=83	Far n=66
Eso	9	20 ET 1	9	39 ET 16
Exo	71 X 59	46 X 37	58 X 55	14 X 14
Ortho	3	3	16	13