Complex Aeromedical Assessment

Robert Haddon, MD, MS
Mayo Clinic, Rochester
Division of Preventive, Occupational and Aerospace Medicine

Civil Aviation Medical Association
September 16, 2017
Disclosures

• Dr. Haddon has no commercial relationships to disclose.

• He works as a Consultant at Mayo Clinic, Rochester

• He formerly served as a flight surgeon for both USAFR and NASA.

• He is a Senior AME
Lost Dog

• Three legs
Lost Dog

• Three legs
• One eye
Lost Dog

- Three legs
- One eye
- Ear torn
Lost Dog

- Three legs
- One eye
- Ear torn
- Tail bent
Lost Dog

- Three legs
- One eye
- Ear torn
- Tail bent
- Mange & Fleas...
Lost Dog

...answers to “Lucky”
Background Events:
9/10/2008
53 yo M pilot w 1st Class FAA Medical

• Walking, developed abrupt numbness of left face, hand, leg and foot.
• Leg dragging.
• Symptoms peaked at one hour, gradually resolved.
• Evaluation showed R thalamic lacunar infarct, airman placed on clopidogrel
• SI issued for First Class Certificate with annual MRI and Neuro Follow up
Action/Development
9/1/2009

- Exercise Sestamibi
- Normal Perfusion
- LVEF 55%
- MRI shows old CVA
- Neuro eval normal
Action/Development
10/15/2013

- MRI Head
- L Perifalcine Meningioma
- R Thalamic chronic infarct
• MRI Head
• L Perifalcine Meningioma Slight growth
• Small chronic infarct R Thalamus
60 yo Pilot w FAA 1st Class Certificate
Situation: Fall 2014

Active Problems

- R Thalamic CVA SI
- Meningioma
- HTN
- Hyperlipidemia
- Elevated BMI
- FH MI

Stable or resolved
Action/Development
11/14/2014

Special Issuance for one year for:
Right Thalamic Lacunar Infarct
Perifalcine Meningioma
Requires: Note from Neuro + MRI
Authorization Expires 10/31/2016
Class I sixth month exam…

...some things have been happening
Airman has develops chronic cough, he attributes to sinus drainage.

This gets progressively worse.
Airman grounds self after progressive cough symptoms for several months leads to discovery of 8 centimeter Left lung mass with mediastinal lymph nodes.

CXR

PET Scan with CT Head to Femurs

Video Assisted Thoracotony 10/5/15
You are here
Video Assisted Thoracotomy
10/5/15

Biopsy shows:
Histoplasmosis
Histoplasmosis

Soil fungus common in Ohio/Mississippi Valley
Associated with bird droppings
Potentially Fatal
Treat with Itraconazole
Histoplasmosis
Histoplasmosis

May affect these organs: Lung, Brain, Eye, Kidney, Bone marrow, Skin, Lymphatics

I.e., pretty much anything with a vascular bed
Histoplasmosis

Most cases are sub-clinical, give rise to incidental findings of small pulmonary nodules later.
Itraconazole

- May prolong QT Interval
- May cause hepatotoxicity
- Prolonged course of IV treatment
- Monitor Levels
Action/Development
October 2015

PET Scan with CT Head to Femurs—mediastinal lymph node activity
Video Assisted Thoracotomy 10/5/15 biopsy shows histoplasmosis
Sees ID, starts Itraconazole
QT interval is normal
AST is 17

What do you want next?
Airman gets brain MRI and neuro eval as per SI, and we look at it specifically for histoplasmosis: No Sign of Histo, Same tumor (don’t forget the brain tumor)

Urine tests normal

Ophthalmology shows normal retinae

Spirometry small airway disease
Airman also gets on airplane as passenger with pulse oximeter, sats to the high 90’s

So…can he fly?
Action/Development  
AME Visit 10/29/2015

- AME discusses with Great Lakes Region
- Gathers data and waits. Enters everything in box 60, including discussion with GLR
- Finally submits as a deferral on 11/12/15
- The plan, with no surprises for anyone:
  - Get follow up CT
  - Monitor on Itraconazole
  - Evaluate OSA
  - Evaluate HTN on three meds
FAA GLR sends 60 day letter requiring:

Results of current chest CT

OSA evaluation—Spec sheet B (start by seeing a sleep specialist for OSA evaluation)

HTN—Report from treating physician
• AME beginning to think about timing of resection of brain tumor.
Situation: Fall 2015

Active Problems

• Pulmonary Histoplasmosis
• Itraconazole
• Potential OSA  • (Not treated)

Stable or resolved

• R Thalamic CVA SI
• Meningioma SI
• HTN on metoprolol, olmesartan, HCTZ
• Hyperlipidemia on rosuvastatin
  BMI 40
• FH MI
Progressive shortness of breath leads to discovery of bilateral pleural effusions and decreased LVEF, thought to be an effect of itraconazole.

Effusions drained, itraconazole adjusted.

Follow up echo 6/28/16 with LVEF of 65% and Aortic dilation of 41 mm mid-level
FAA GLR sends denial letter as requested evaluations not yet completed.

This was expected by everybody, and was taken in stride while we moved forward.
Meningioma excised with no complications, hospital discharge 2 days later.

Itraconazole stopped after 6 months tx.

ID confirms treatment complete

Follow up CT shows regression of lesion, no further effusions
CT chest shows shrinkage of LUL mass to 2 cm
Incidental coronary artery calcifications...
Stress echo negative for ischemia, shows mild ascending aortic artery dilation.

Sleep study positive for OSA, starts CPAP and is well tolerated.

Neuro follow up and post-op MRI all benign
Action/Development
November 4 2016

Special Issuance First Class Certificate for:

- Resected meningioma
- OSA on CPAP
- Ascending aorta dilation

Notation for any changes in: Melanoma in situ, reactive airway disease, GERD, posterior vitreous detachment, early cataracts.

Total grounded time 13 months.
### Active Problems
- BMI 37 weight loss in work
- HTN on HCTZ + Olmesartan
- Meningioma out
- R Thalamic CVA off SI
- OSA on CPAP and SI
- Aortic dilation
- h/o melanoma
- Hyperchol on statin
- Myopia/Presbyopia/Cataracts

### Situation: September 2017

- Stable or resolved
  - Menopausal
  - R Thalamic CVA off SI
  - OSA on CPAP and SI
  - Aortic dilation
  - h/o melanoma
  - Hyperchol on statin
  - Myopia/Presbyopia/Cataracts
General Conclusions

• Use the down time for medical housekeeping
• Parallel, not serial
• Plan ahead, i.e., prevent future seizure risk
• The pilot can get healthier and can be shown this
Still flying
Questions?