

# Heroin-induced leukoencephalopathy

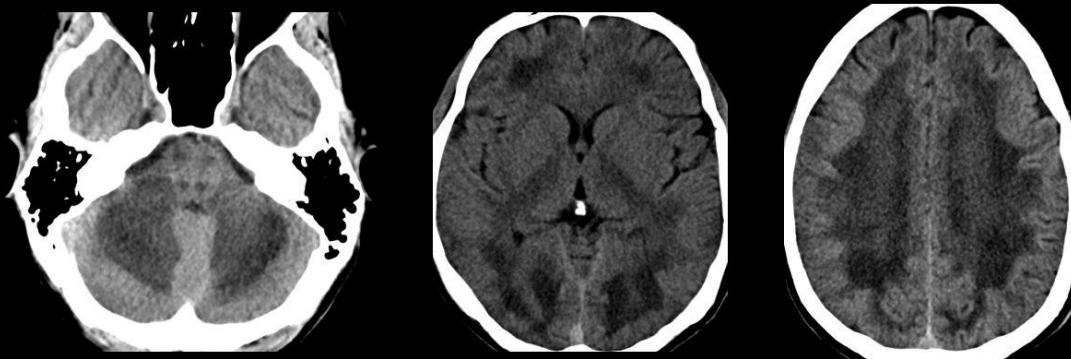
- Heroin-induced leukoencephalopathy,
- Heroin-associated spongiform leukoencephalopathy
- Toxic leukoencephalopathy caused by the inhalation of heroin fumes, which is called "chasing the dragon."

# MRI

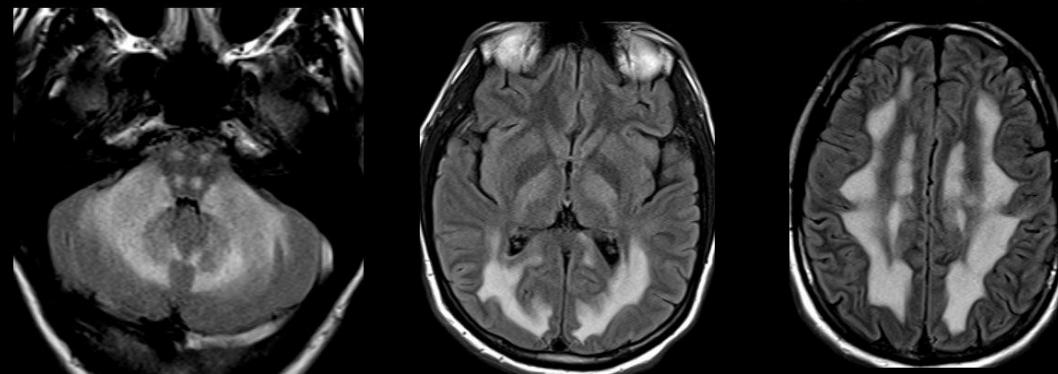
- Similar to other toxic leukoencephalopathies with widespread white matter hyperintensity on T2/FLAIR sequences involving both supra- and infratentorial compartments, but with a characteristic distribution:
- Symmetrical involvement of the posterior limb of the internal capsules extending inferiorly into the pontine corticospinal tracts, and superiorly into the perirolandic subcortical white matter
- Symmetrical butterfly wing pattern involvement of the cerebellar white matter and middle cerebellar peduncles (one of the causes of the so-called MCP sign)
- Sparing of adjacent grey matter structures and subcortical U-fibers
- Typically regions demonstrate high DWI signal, which only sometimes represents true diffusion restriction.

# Young adult, altered mental status

Top Row –  
Non-Contrast CT Head



Bottom Row –  
Axial FLAIR MRI



#ASNRCOTW

American Society of Neuroradiology

Courtesy of Patrick Janeczko, Aidan Farrell, Nicholas Cassimatis and Rita Patel MD, Hackensack  
Meridian University Medical Center/School of Medicine

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# Chasing the Dragon

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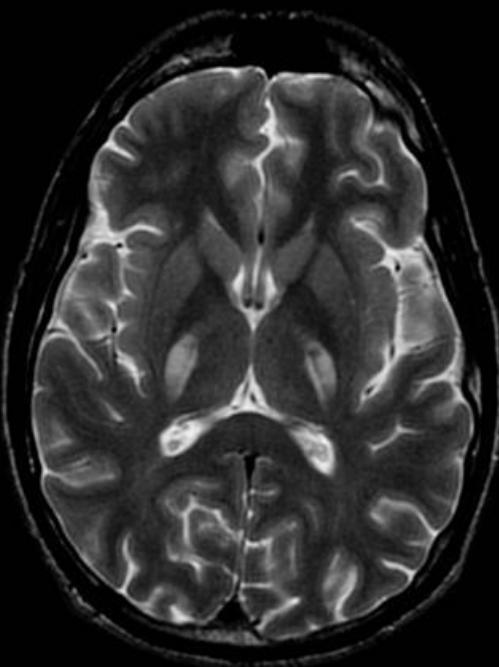
W 886 : L 527

17

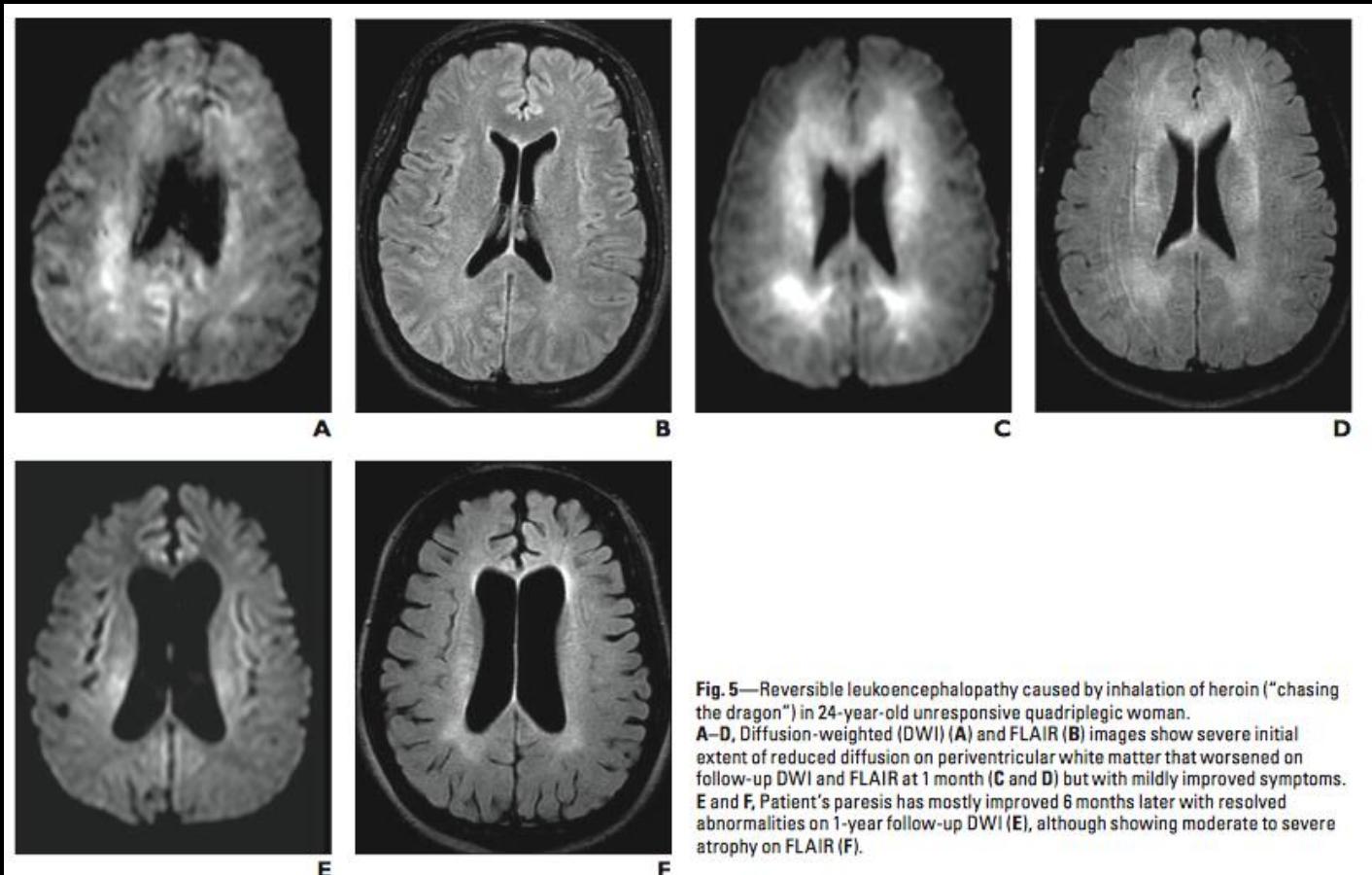


W 886 : L 527

W 886 : L 527



# Chasing the Dragon



**Fig. 5**—Reversible leukoencephalopathy caused by inhalation of heroin (“chasing the dragon”) in 24-year-old unresponsive quadriplegic woman.  
A–D, Diffusion-weighted (DWI) (A) and FLAIR (B) images show severe initial extent of reduced diffusion on periventricular white matter that worsened on follow-up DWI and FLAIR at 1 month (C and D) but with mildly improved symptoms. E and F, Patient’s paresis has mostly improved 6 months later with resolved abnormalities on 1-year follow-up DWI (E), although showing moderate to severe atrophy on FLAIR (F).