



FONDAZIONE IRCCS CA' GRANDA  
OSPEDALE MAGGIORE POLICLINICO

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# Cognitive decline after single traumatic brain event: a case study

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# Post-TBI dementia

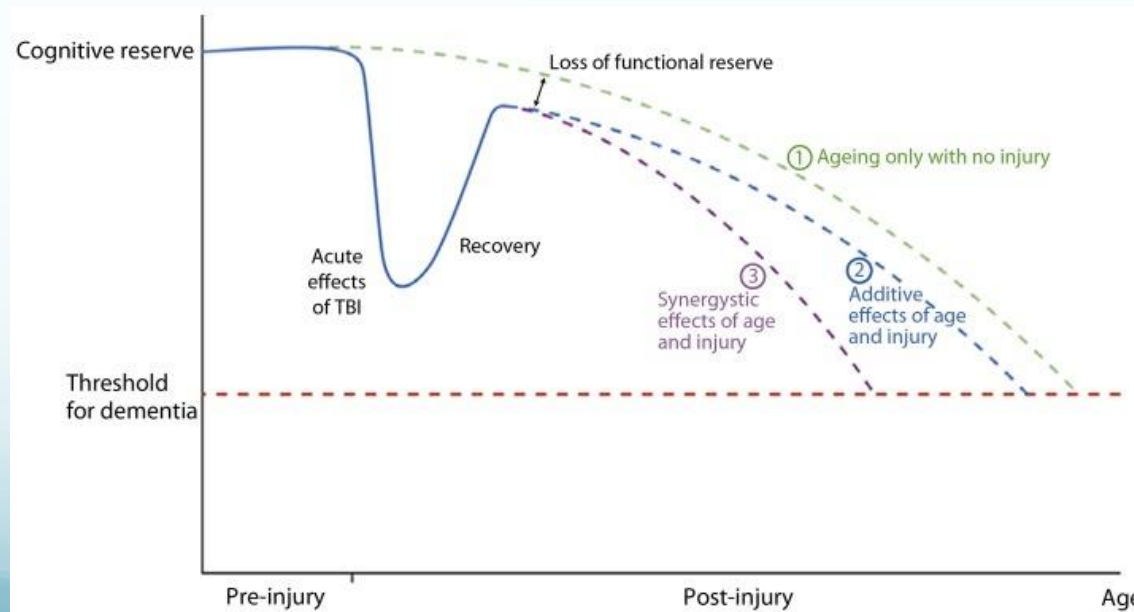
Traumatic Brain Injury



increased risk for later in life degeneration



increased likelihood for a dementing illness



# The patient

**June 2014:** a previously healthy 70-year old man falls down his balcony



polytrauma + **temporal TBI**

## Evolution:

- **2014 – January 2016:** **mnesitic deficit**, interpreted as post-traumatic
- **April 2016:** **deficitary verbal, visuospatial and linguistic working memory**, interpreted as compatible with the TBI glial scar
- **June 2016:** **mnesitic deficits, severe difficulties** in everyday life, **unreliability, apathy**: mild post-traumatic multisectorial cognitive compromission
- **October 2016:** **severe multisectorial cognitive compromission**, with disorientation to time, deficits in mnesitic and fronto-executive functions

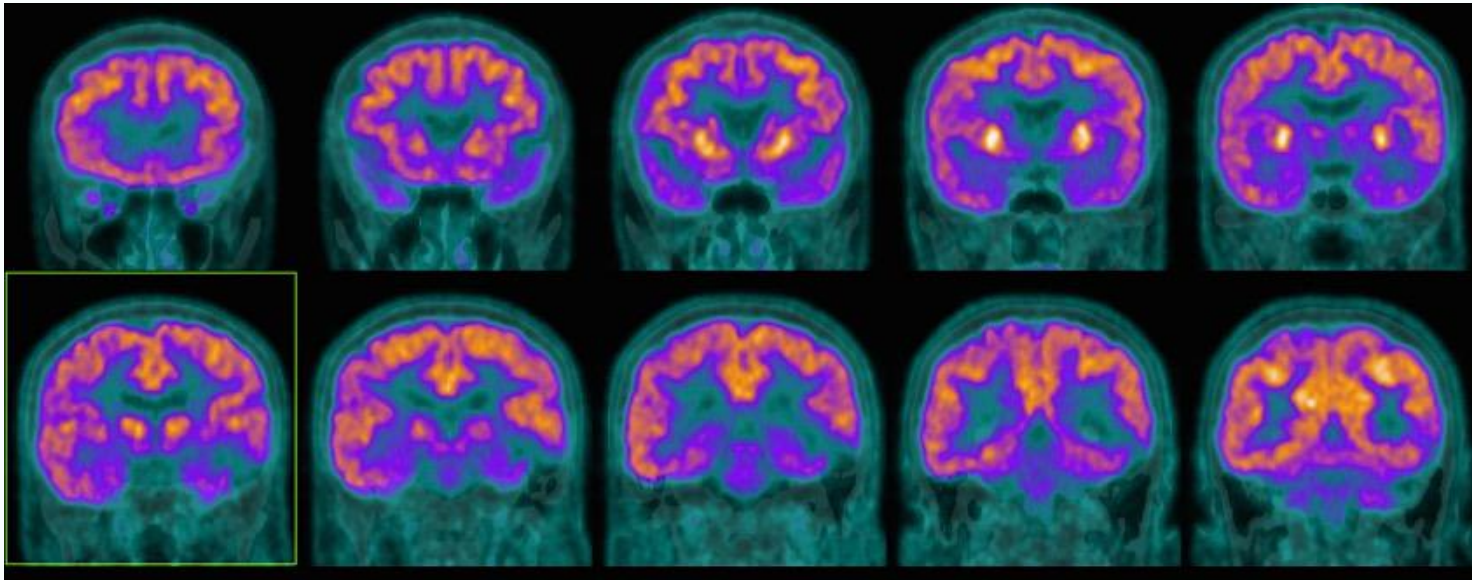


**Degenerative process superimposed on TBI scar**

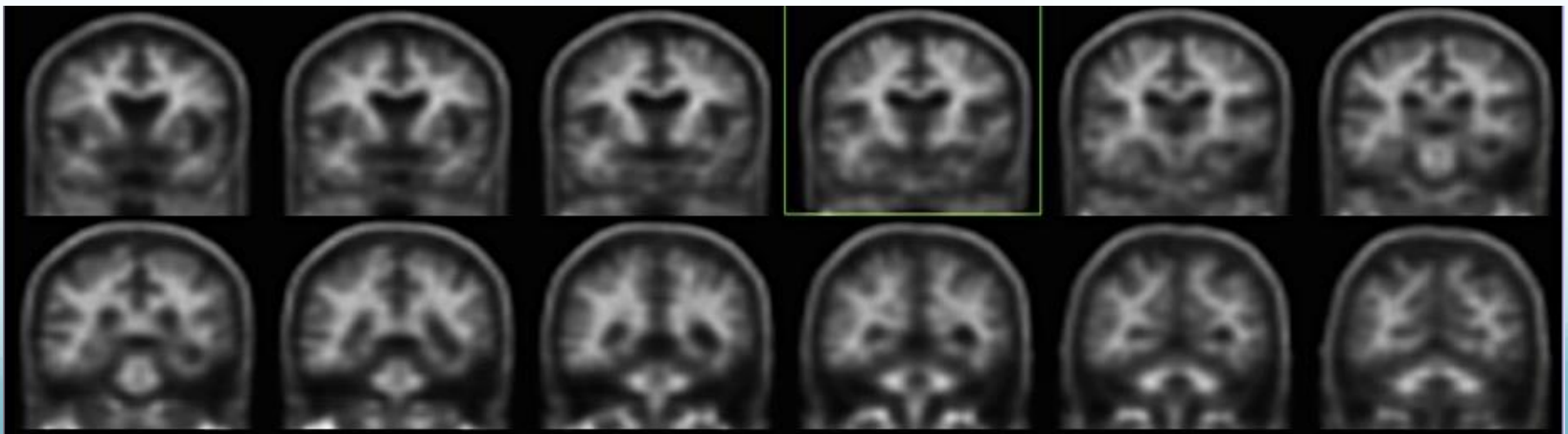


2015 MRI  
T2, axial section

# Neuroimaging




2017 FDG-PET, coronal sections



2017 florbetapir-PET, coronal sections

# Conclusions

- Our patient developed a dementia after a single traumatic event
- His CSF will be analyzed for biomarkers and genetic mutations (e.g. APOE  $\epsilon$ 4, PPA, PSEN1, tau)
- TBI  higher risk of developing dementia later in life



neurological follow-up visits are required for anyone with TBI



when cognitive decline is suspected:

- ✓ neuropsychological assessment
- ✓ neuroimaging (MRI, FDG-PET, florbetapir-PET)
- ✓ analysis of biomarkers on CSF
- ✓ research for genetic mutations