EYE MOVEMENT ASSESTMENT IN FRONTOTEMPORAL DEMENTIA (FTD) : A CASE REPORT

UNIVERSITÀ DI SIENA 1240

A. Molino[1], A. Bargagli[1,2], F. Neri[1], A. Mignarri[1], N. De Stefano[1], A. Rufa[1,2]

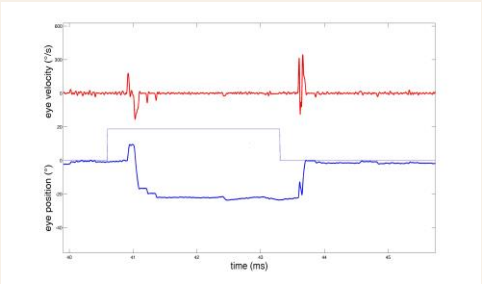
1. Neurological Unit, department of Medicine, surgery and Neuroscience, University of Siena, Siena, Italy
2. Eye- Tracking & visual appication EvaLab, department of Medicine, surgery and Neuroscience, Univeristy of Siena, Siena, Italy

INTRODUCTION

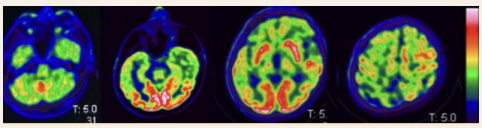
Frontotemporal dementia (FTD) is a progressive neurodegenerative disorder characterized by the gradual decline of behavour , personality, and language functions. Here we report the progression of eye movements changes in a patient with non-fluent aphasia highlighting their potential utility in longitudial follow-up to track diasesase advancement

RESULTS

Neurological examination and MRI were normal; CSF analysis only demostraded an increased level of Tau protein. The eye movements analysis revealeded a progressive increase in saccadic latency over time, while the other dinamic parameters stayed in range (tabel1-2). Antisaccades were performed correctly (88%) and saccades follow by correction (12%) at the first measurement (imm.1), which remaided stable in subsequent measurements with a variation of 1-2%



The neuropsychological tests showed a progressive decline in executive functions, in phonetic and semantic verbal fluency, along with difficulty in naming. PET scan showed cortical hypometabolism in the anterior temporal regions, more pronunced on the left side.



MATERIALS AND METHODS

Case presentation

Mr. B.G. age 65 had a recent history of memory difficulty particulary in recalling words associated with every day objects and the names of people. Clincal, Neuropsychological, eye movement and laboratory assessment was performed. At the baseline the patient also performed MRI, FDG PET and lumbar puncture to define the CSF profile of neurodegeneration markers.

Eye Movement assestment

Eye-movements were recorded three times (every 6 months) using an EyeLink 1000 at sampling rate 240 Hz. Horizontal and Vertical Visual Guided Saccades (VGS) and Antisaccads (AS) were recorded. For each saccadic movement, we computed amplitude, gain,duration,peak velocity and latency

Horizontal saccadic parameters	Patient Data		Reference controls EVA Lab	
	10°	18°	10°	18°
Latency	214 ms	258 ms	(165 - 181) ms	(182 - 196) ms
V (Max)	375°/s	487°/s	(372 - 397)°/s	(424 - 535)°/s
V (Media)	207°/s	276°/s	(197 - 217)°/s	(228 - 261)°/s
Duration	48 ms	64 ms	(47 - 49) ms	(60 - 68) ms
Amplitude	10.7°	16.0°	(10.0 - 10.9)°	(17.5 - 18.5)°
Accuracy	1.27	0.56	(0.79 - 0.98)	(1.11 - 1.43)
Gain	1.05	1.03	(1.01 - 1.04)	(0.96 - 0.99)

Vertical saccadic parameters	Patient data	Reference controls EvaLab
	8°	8°
V (Max)	279 (±42)°/s	(289 ± 51)°/s
Duration	51 (±8)ms '	(51 ± 8) ms
Amplitude	8.1 (±1.3)°	(8.0 ± 1.2)°
Accuracy	1.13 (±0.72)	(1.10 ± 0.82)
Gain	1.01 (±0.17)	(0.99 ± 0.15)

CONCLUSION

The clinical history and the presentation of the patient's symptoms were suggestive of semantic variant FTD. Eye movements showed an increased lacenty of saccadic eye movements with an overall tendency toward hypermetria. The pattern of eye movements observed is consistent with demage to the frontal brain areas affected by the pathology