SPASMODIC DYSPHONIA AS A PRESENTING SYMPTOM OF SPINOCEREBELLAR ATAXIA TYPE 12

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Patient’s history

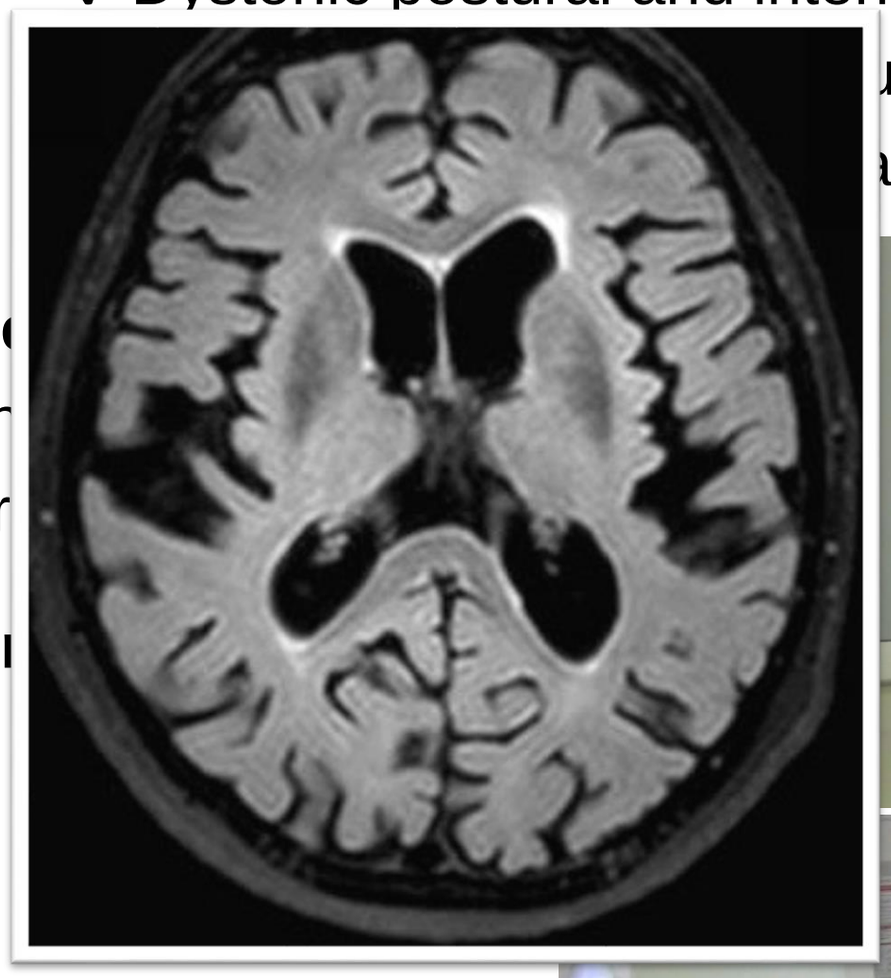
A 61-year-old woman born in Ferrara province, developed at the age of 50 **alteration of voice**, followed by head dystonic tremor. Few years later she developed gait instability and ataxia. Later on, cognitive deterioration and depression appeared.

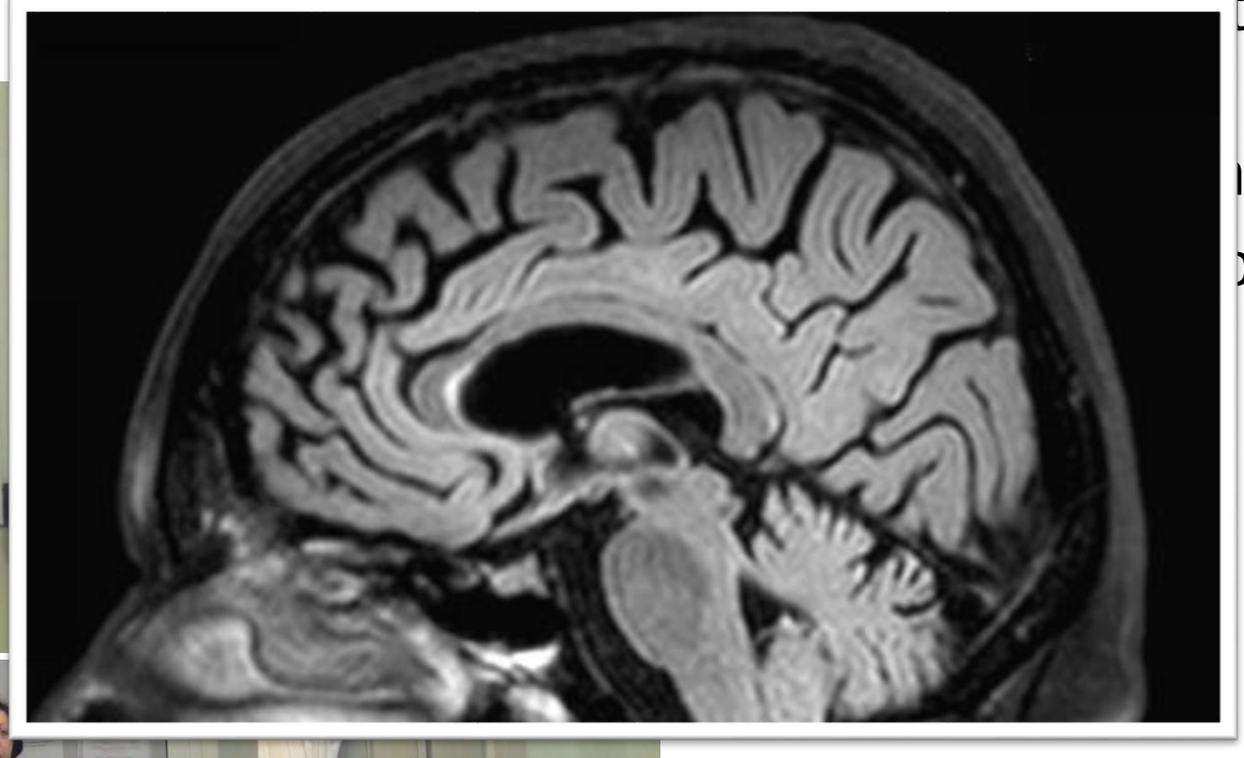
Previous Assessments

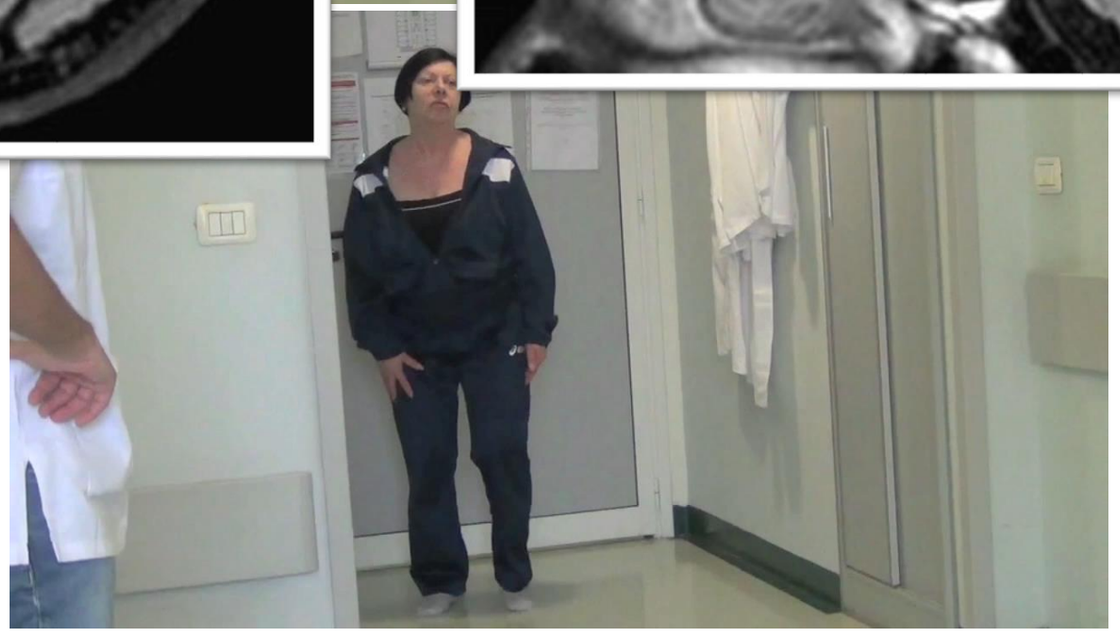
- ✓ Neuropsychological assessment: executive and attentive functions impairment; anomalies of learning skills for verbal and spatial material and attention divided.
- ✓ SPECT and DATSCAN: normal.
- ✓ Brain MRI: Cortical-subcortical atrophy
- ✓ Genetic analysis for SCA1, SCA2, SCA3, SCA6: negative.

Neurological evaluation

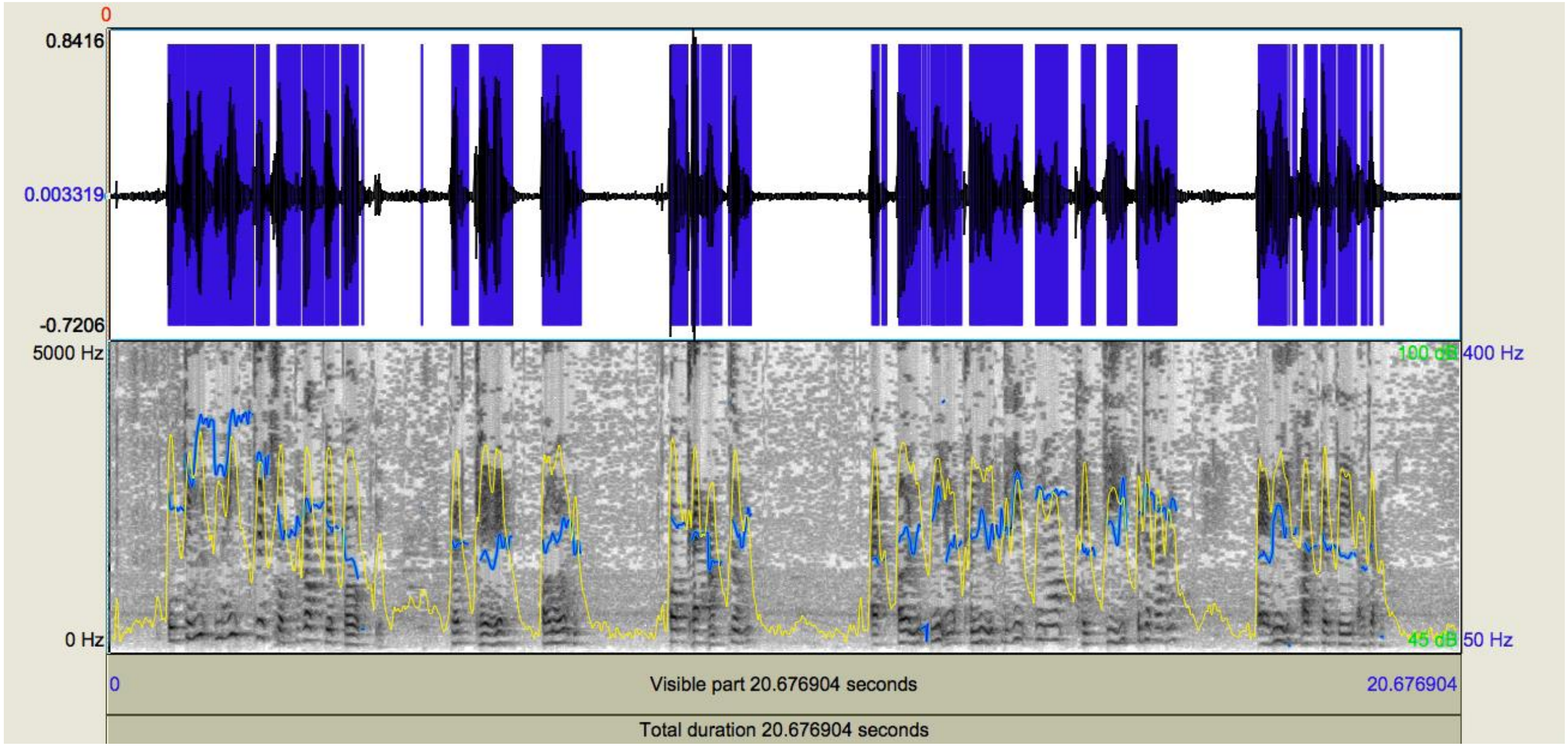
- ✓ **Neurological examination:**
  - ✓ Dystonic postural and intentional tremor of the head and limbs.
  - ✓ **N**
  - ✓ **Br**



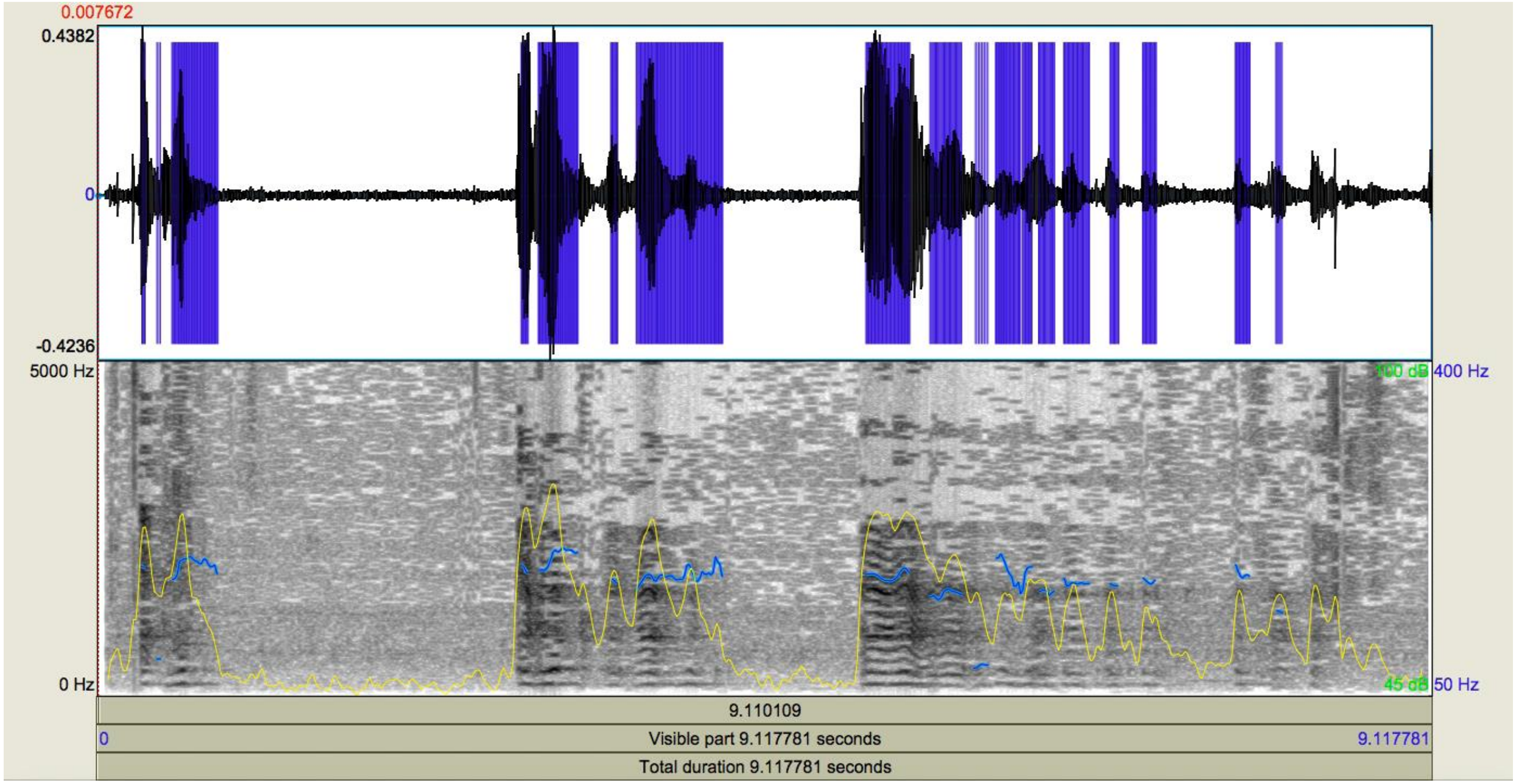




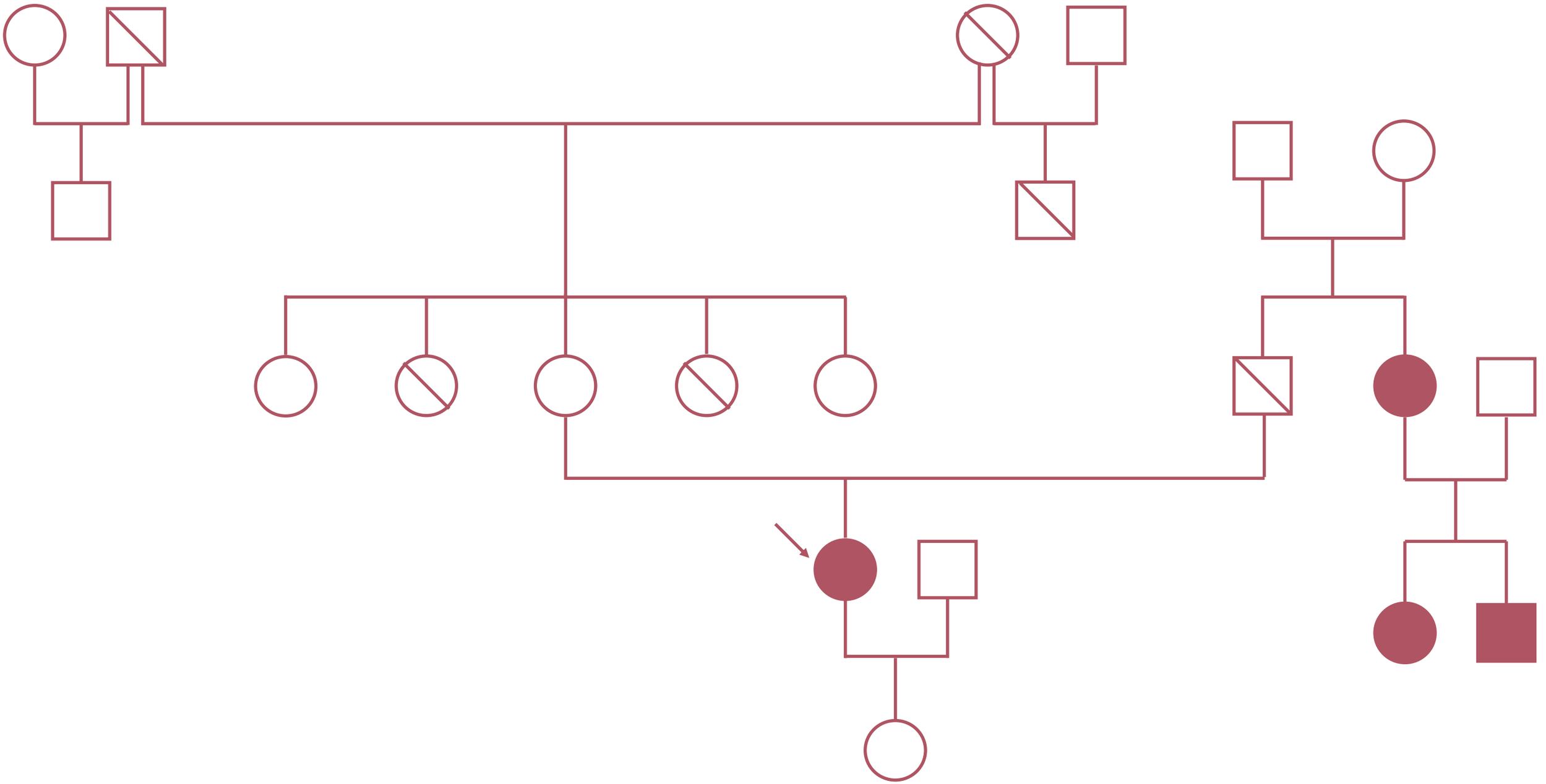
Speech evaluation



Speech evaluation



Genetic analysis



Genetic analysis

GENETIC SPASMODIC DYSPHONIA		
Gene/protein	**Inheritance pattern**	**Clinical Features**
DYT-THAP1 (DYT6)	AD	Adolescent/young adult onset, generalized or segmental involvement with predominance of craniocervical and laryngeal features, often with prominent tremor.
DYT-TUBB4A (DYT4)	AD	Rare, presenting more commonly with spasmodic dysphonia, with craniocervical involvement and possible later generalization.
DYT-GNAL (DYT25)	AD	Adult onset craniocervical dystonia.
DYT-ANO3 (DYT24)	AD	Adult-onset tremulous craniocervical dystonia with laryngeal involvement and upper limb tremor.
SCA20	AD	Spasmodic dysphonia or spasmodic coughing.
SCA-PPP2R2B (SCA12)	AD	


Dystonia, Tremor, and Spasmodic Dysphonia in Spinocerebellar Ataxia Type 12

Christos Ganos, MD,[1,2,3] Tabish A. Saifee, MD,[1] Panagiotis Kassavetis, MD,[1] Roberto Erro, MD,[1] Amit Batla, MD,[1] Carla Cordivari, MD,[1] Kailash P. Bhatia, MD[1,*]

Heterozygosity for an expanded allele with 61 CAG repeats

SCA12

51–78 (normal 7–32) CAG repeat in 5’ region of **PPP2R2B (5q32)**

↓

Bβ subunit of **PP2A**

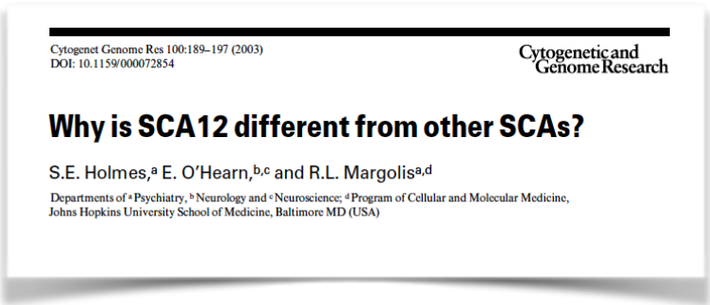
↓

Cell cycle regulation, tau phosphorylation, Apoptosis

↓

Onset between 8-55 years, mostly at 30 years

Clinical sign	Number affected of 10
Action tremor	10
Bradykinesia	9
Cerebellar sign, ataxia	8
Hyperreflexia	8
Paucity of movement	8
Babinski present	5
Decreased tone	4
Psychiatric symptoms	4
Focal dystonia	2
Dementia	2
Incontinence	2



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Cytogenetic and Genome Research

Why is SCA12 different from other SCAs?

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Discussion

Described in European-American and Asian (Indian) pedigrees

↓

In Italy: cases in Ferrara province

↓

Variable Phenotype

↓

Spasmodic dysphonia described once before

↓

This is the first case in which spasmodic dysphonia was the presenting symptom.

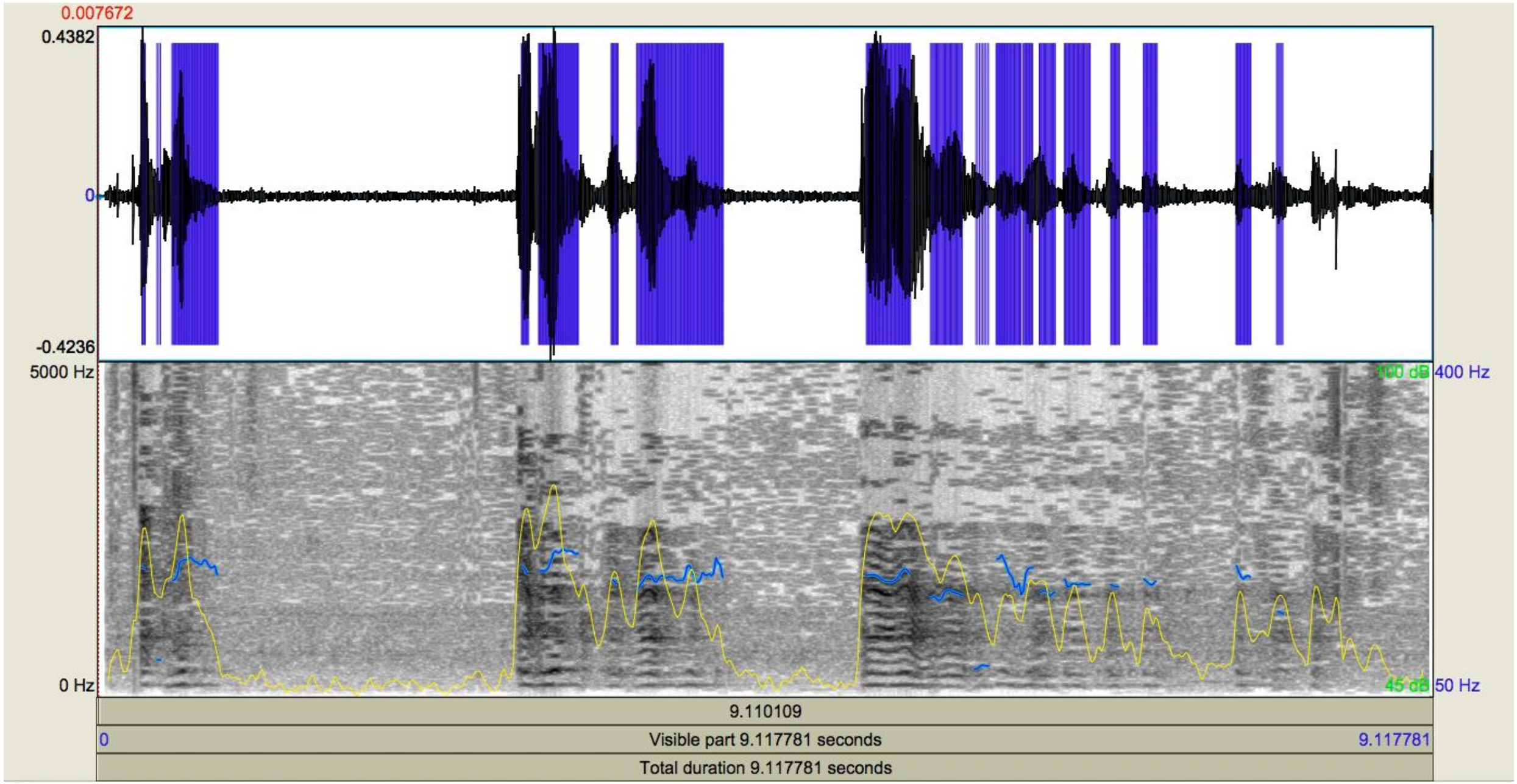
Spinocerebellar Ataxia Type 12 Identified in Two Italian Families May Mimic Sporadic Ataxia

Alessandro Brussino, MD,[1] Claudio Graziano, MD,[2] Dario Giobbe, MD,[3] Marina Ferrone, BSc,[1] Elisa Dragone, MSc,[1] Carlo Arduino, MD,[1] Raffaele Lodi, MD,[4] Caterina Tonon, MD,[4] Anna Gabellini, MD,[5] Rita Rinaldi, MD,[5] Sara Miccoli, MD,[2] Enrico Grosso, MD,[1] Maria Cristina Bellati, MSc,[1] Laura Orsi, MD,[6] Nicola Migone, MD,[1] and Alfredo Brusco, PhD[1]*

Dystonic Tremor and Spasmodic Dysphonia in Spinocerebellar Ataxia Type 12

Christos Ganos, MD,[1,2,3] Tabish A. Saifee, MD,[1] Panagiotis Kassavetis, MD,[1] Roberto Erro, MD,[1] Amit Batla, MD,[1] Carla Cordivari, MD,[1] Kailash P. Bhatia, MD[1,]*

Discussion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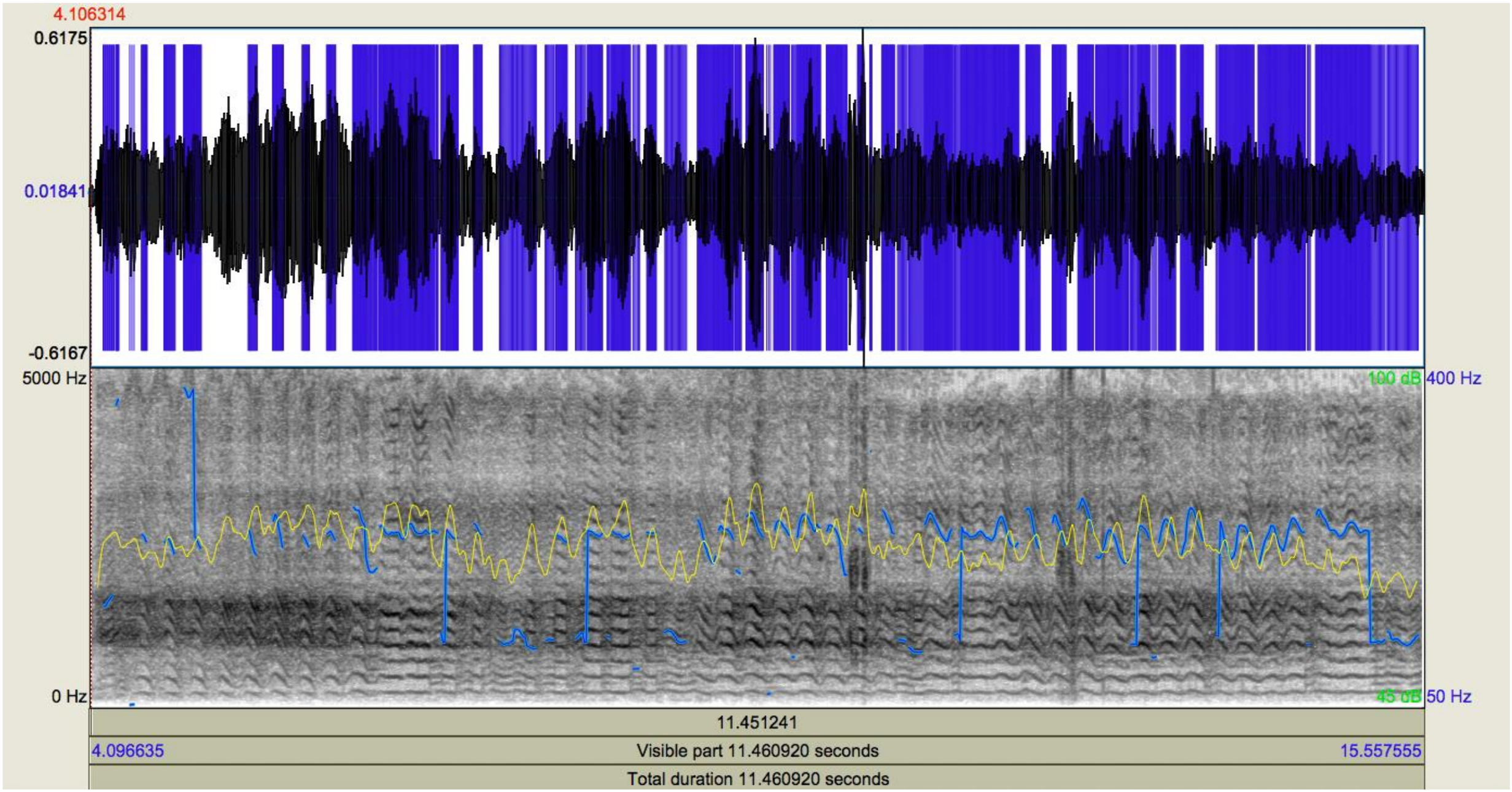
0
-0.4236
5000 Hz
100 dB
400 Hz
0 Hz
45 dB
50 Hz
9.110109
0
Visible part 9.117781 seconds
9.117781
Total duration 9.117781 seconds

Discussion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0.01841
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5000 Hz
0 Hz
100 dB
400 Hz
45 dB
50 Hz
11.451241
4.096635
Visible part 11.460920 seconds
15.557555
Total duration 11.460920 seconds

Conclusion

- SCA12 is characterized by a heterogeneous phenotypic variability.
- Typical signs can appear long after disease onset.
- In many cases minor signs, like dystonia, can be predominant even at onset.
- Dystonia may primarily affect the cervical and laryngeal tract.
- Spasmodic dysphonia can be an onset sign in SCA12.
- In presence of voice alteration, multidisciplinary approach is useful, in order to better define it and guide further investigations.

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THANKS FOR YOUR ATTENTION