



# POST POLIO SYNDROME – a challenge of today

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## Differential Diagnosis postpolio syndrome

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# Differential diagnosis of PPS



- Inclusion body myositis
- Amyotrophic lateral sclerosis
- Chronic fatigue syndrome
- Entrapment neuropathies
- Degenerative arthritis
- Hypothyroidism
- Multifocal motor neuropathy
- Myasthenia gravis
- Progressive muscular atrophy
- Radiculopathy
- Weakness due to aging

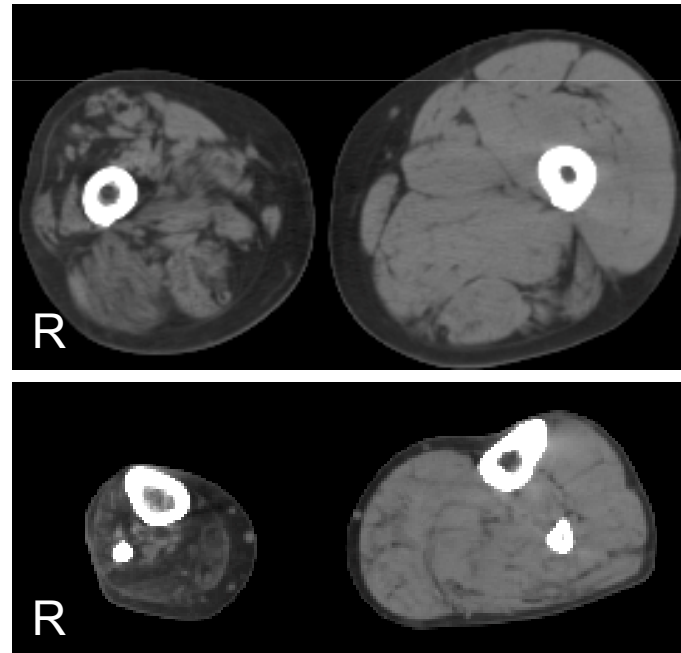
# Diagnostic dilemma's

- Patients with neurological condition which is found to be related to previous polio during the diagnostic process
- PPS-patients who develop a neurological condition which is unrelated to polio
- PPS-patients who develop a neurological condition which is indirectly related to previous polio.

# Characteristic clinical picture



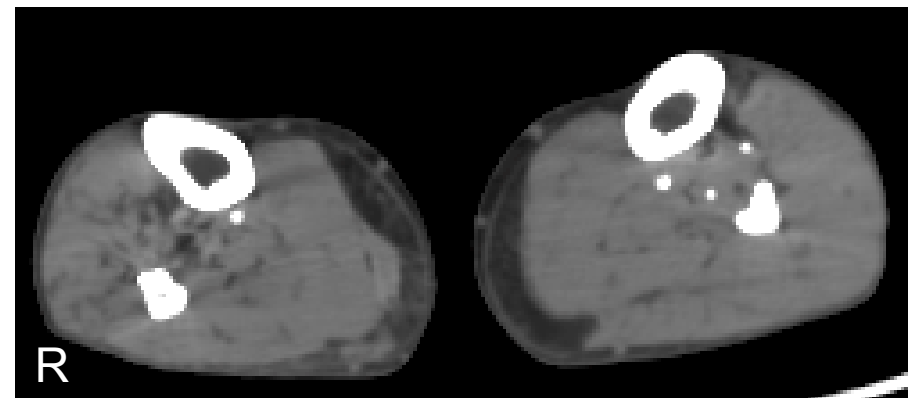
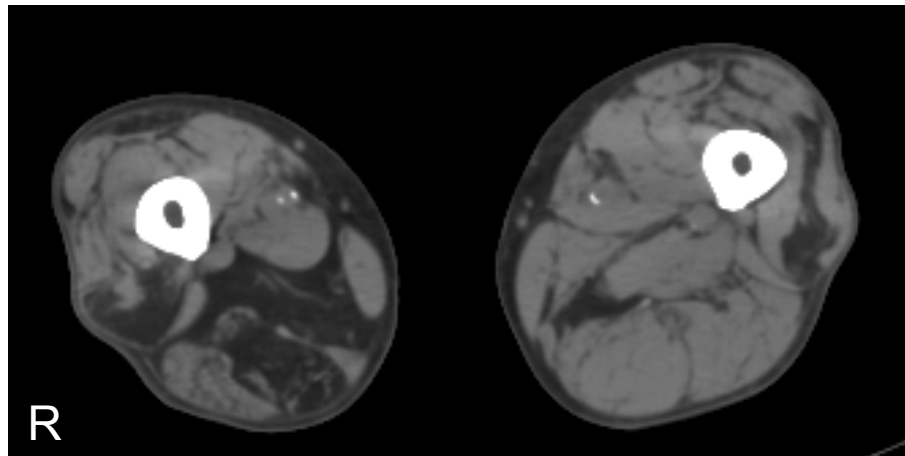
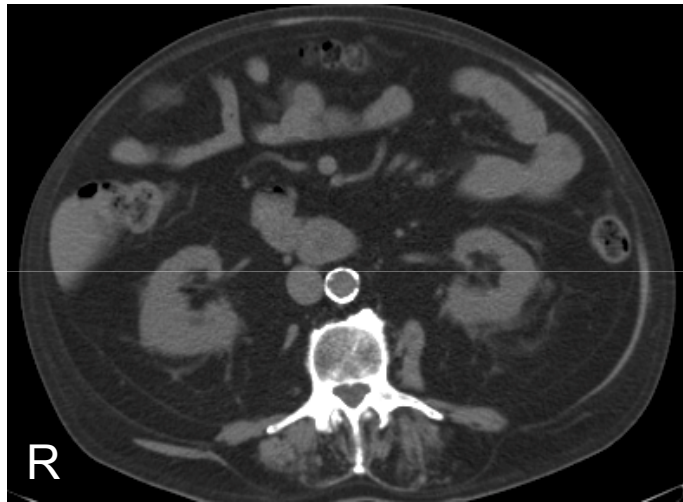
- Polio at age 7 years.
- Sequelae R lower leg.
- Over the years increasing weakness R leg.



# Post polio syndrome criteria

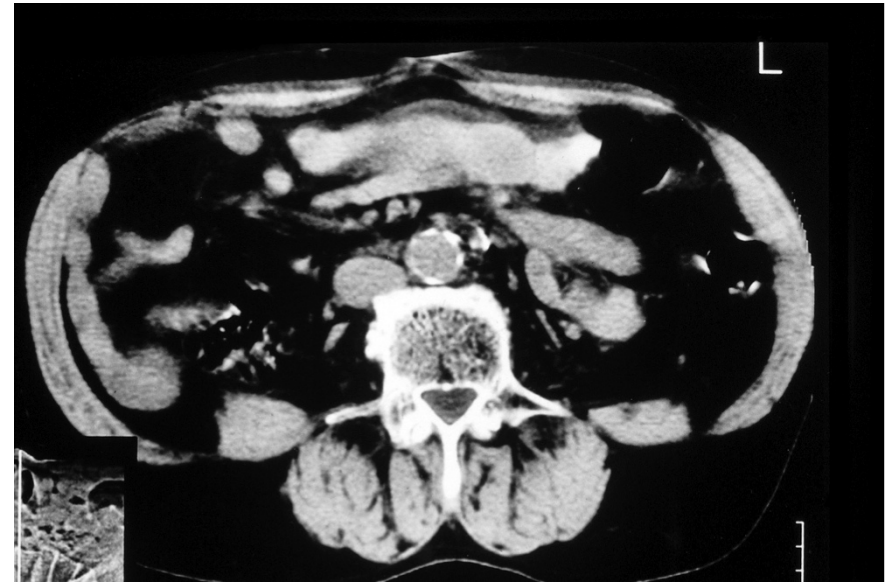
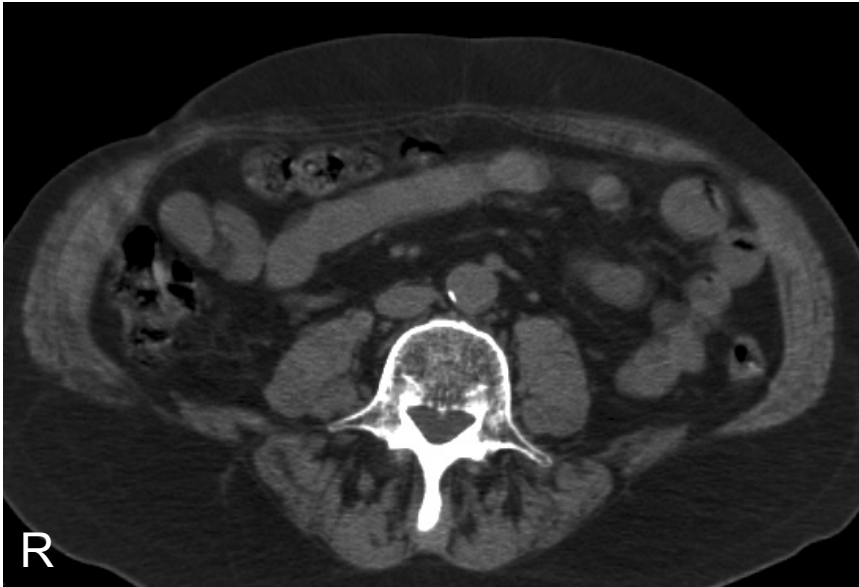
- Prior episode of paralytic polio
- Period of neurologic and functional stability
- Onset of new muscle weakness
- Exclusion of other conditions

Male, 70 years at examination  
Progressive walking difficulty.  
Guillain-Barré syndrome at age 4 years (?)  
Ex/ Generalized mild muscle weakness both legs



# Mr S, 73 years old (dob 1938) at time of examination

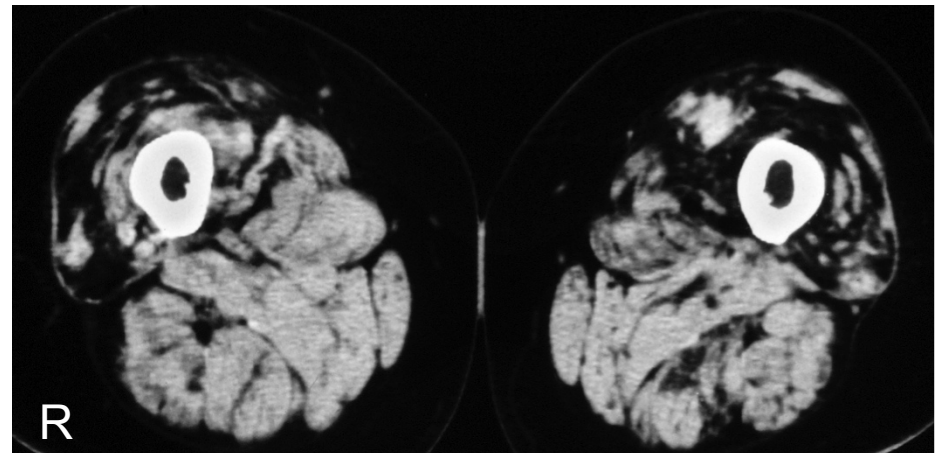
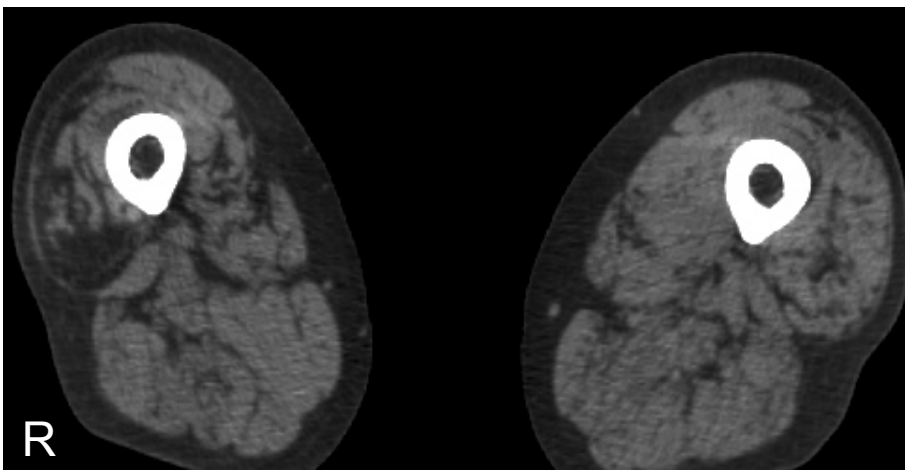
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|----------|--|
| Referral | <ul style="list-style-type: none"><li>• Spinal muscular atrophy type 3 or post polio syndrome?</li></ul>   |
| History  | <ul style="list-style-type: none"><li>• 1956 decrease in strength L arm and both legs + fever. Diagnosis ?</li><li>• 1958 diagnosed as SMA3.</li><li>• Gradual improvement of strength.</li><li>• Sequelae: proximal leg muscle weakness (difficulty getting out of a chair).</li><li>• 1999: R patella #. Since then diminishing strength leg muscles</li></ul> |



PPS

Atrophy of the thigh muscles, R>L  
Positive Gowers' sign.

SMA3



# Post polio syndrome criteria

- Prior episode of paralytic polio
- Period of neurologic and functional stability
- Onset of new muscle weakness
- Exclusion of other conditions

# Mr vD, 58 years old

seen in 2009

Referral  
History

- Swallowing difficulty
- Increasingly sensation of choking which is experienced as frightening. Initially during the night but now also during daytime.
- In addition difficulty eating.

Previous hx

- Bulbar polio in 1956 (following tonsillectomy).
- Iron lung, tracheostomy, tube-feeding, myotomy upper sphincter oesophagus

## Mr vD cont'd

- The history was suggestive of laryngeal stridor and the patient underwent tracheostomy and als was given a PEG.
- This patient developed his signs and symptoms in the musculature that previously recovered and subsequently deteriorated.

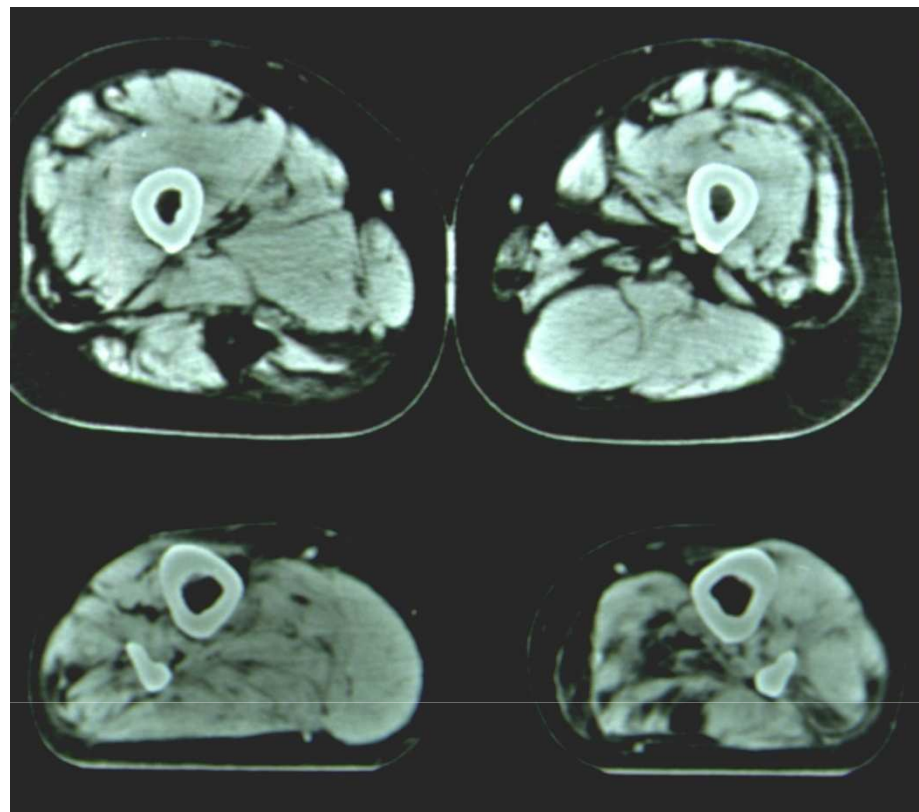
# Post polio syndrome criteria

- Prior episode of paralytic polio
- Period of neurologic and functional stability
- Onset of new muscle weakness
- Exclusion of other conditions

PPS



CMTII



# Mrs de B, 64 years old

seen by us in 2009

## History

- Difficulty walking since about 10 years, uses crutches for outdoor activities.

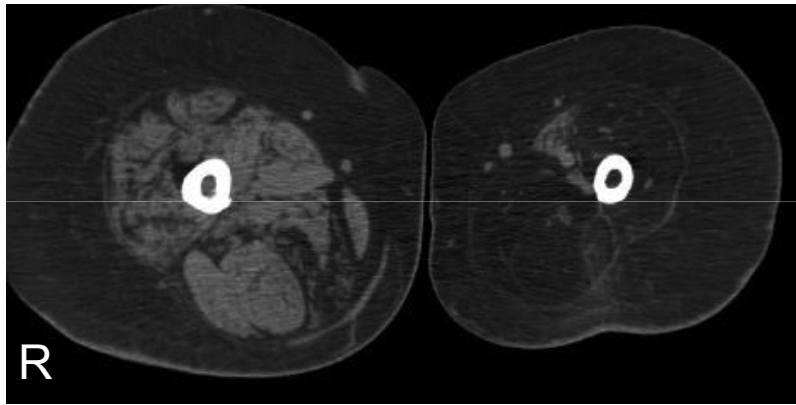
## Previous hx

- Polio at age 1.5 yrs. Sequelae L leg. Surgery left ankle and knee
- In 2007 decrease in strength in R thigh muscles and since 2008 of the arms.
- She is now wheelchair dependent, needs home care.

- Atrophy and shorter left leg, no fasciculations
- Generalised weakness arms (MRC 4),
- R leg dist MRC 4, prox 2, L leg MRC 1-2.
- Areflexia.

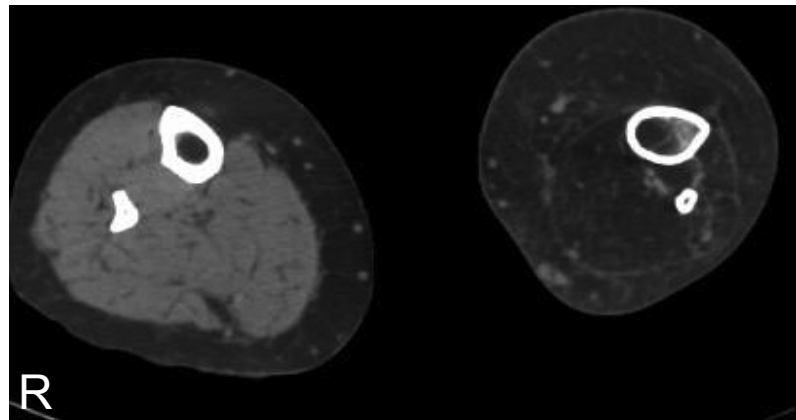


**EMG:** spontaneous muscle activity in various muscles of R leg and paraspinal muscle and signs of reinnervation in those muscles.



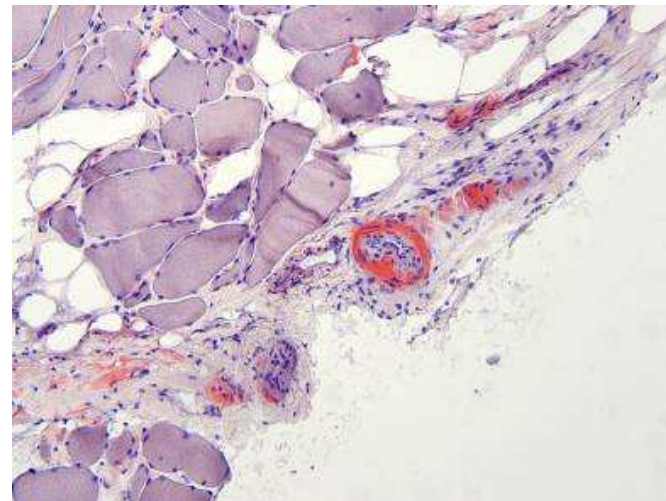
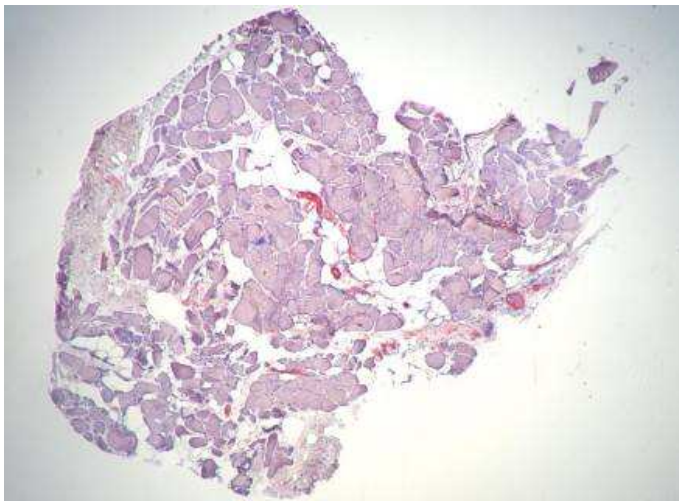
**DD?**

- Progressive spinal muscular atrophy
- Post polio syndrome



# Ancillary investigations

- M-protein, IgG  $\kappa$  (serum, urine)
- Bone marrow puncture showed monoclonal plasma cells IgG kappa.
- Lip biopsy: amyloidosis, monoclonal kappa +-ve
- Echo heart: consistent with amyloidosis
- Muscle biopsy .....



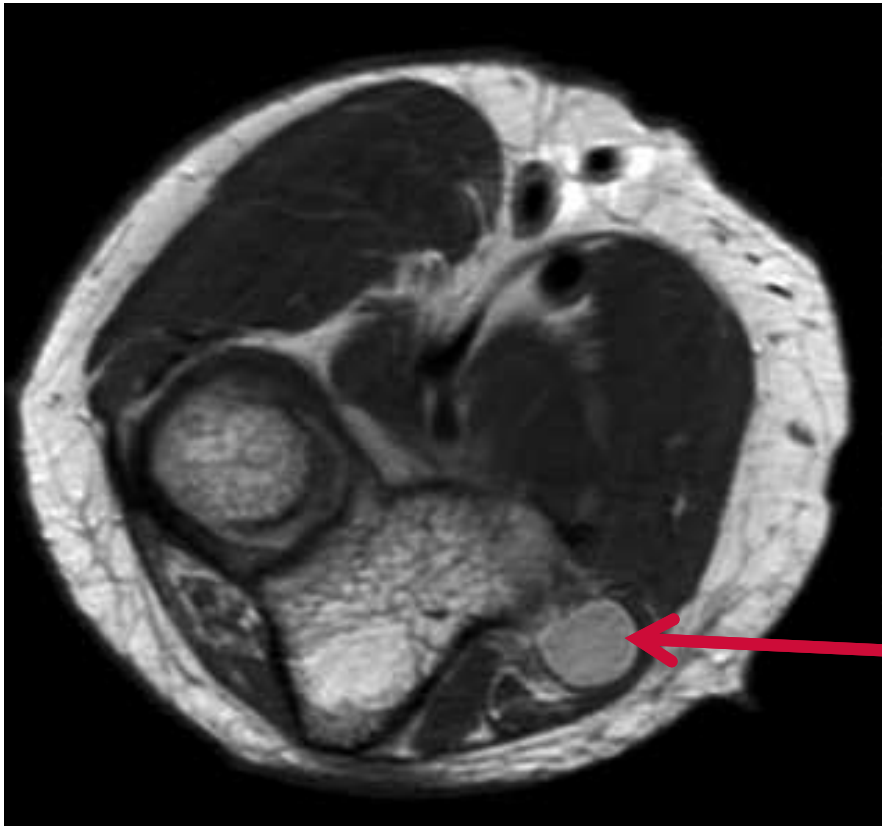
# Ms R, 56 years old at time of examination

## History

- In 1955 polio (at age 1 yrs).
- Sequelae: paralysis of both legs.
- She now walks with crutches.
- CTS surgery in 1994, diabetes mellitus since about 4 years.
- Since about a year complaints about sensory disturbances in both arms irradiating to ring and little finger.

## Diagnosis

- Entrapment of the ulnar nerve



MRI revealed a ganglion at the site of EMG entrapment. The ganglion was surgically removed and the sensory disturbances have resolved.

# Mr N, 40 years old at time of examination

## History

- Since 1 year slowly progressive weakness R thigh, and sensory changes in the sole of his R foot and palm of his R hand.

## Previous hx

- 1978: polio. Both legs, abdominal muscles and L triceps brachii muscle paralysed.
- Sequelae: scoliosis and weakness and wasting of L leg
- 1983: cervical neurofibroma, partial resection.



- Horner syndrome
- Weakness L upper arm and shoulder girdle muscles
- Diffuse weakness legs, L>R, proximal > distal
- Sensory changes distal legs
- Bilateral extensor plantar responses



SYRINGOMYELIA

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for saving our  
children from  
Polio

God bless you  
Luz Teresa

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natuurlijk ben ik  
ingeënt tegen

**POLIO!**

**ET WIT GELE KRUIS**

# Differential diagnosis PPS

## Key questions

- Is there a credible history of polio?
- Are there sequelae?
- If pain is a prominent complaint, consider radiculopathies or entrapment neuropathies and perform EMG/imaging.
- A patient with PPS may also acquire disorders not related to PPS, e.g., neuralgic amyotrophy, syringomyelia, etc. If there is a rapid disease course, consider other diagnoses, e.g. amyloidosis, motor neuron disease.