

A curious case of thoracal pain

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Background

Neuroborreliosis is a manifestation of disseminated Lyme disease, a tick-borne disease caused by the spirochaete *Borrelia*. The amount of infected ticks in an area is determined by multiple variables (Table 1), causing important locoregional variation in number of infected ticks (Figure 1, Table 2).

Nervous system involvement occurs in 10-15% of cases of untreated Lyme disease.

Three major clinical presentations of neuroborreliosis are defined: meningitis and/or cranial neuropathy and/or peripheral neuropathy.

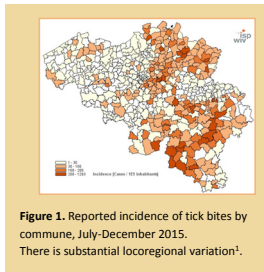


Table 1: Environmental characteristics determining the prevalence of *Borrelia*².

- ✓ Presence of suitable vector for *Borrelia*
- ✓ Presence of suitable vector for tick
- ✓ Presence of *Borrelia* in reservoir species
- ✓ Environmental characteristics (i.e. limited direct sun exposure)

Table 2: Cumulative incidence of positive laboratory tests for Lyme Borreliosis (by 100 000 inhabitants) in Luxembourg, Flemish Brabant and Antwerp, 2003-2012³.

	Positive for Lyme Borreliosis / 100 000 inh.	Nymph density / 100 m ²
Luxembourg	508.5	12.1 - 17.2
Flemish Brabant	301.2	49.0 - 54.9
Antwerp	172.0	

Case Report

A 55-year old woman presented at the Emergency Department of AZ Klina hospital (Brasschaat, Belgium). She reported a burning thoracal pain and numb sensation, radiating from the dorsal region (D3-6) to her sternum. Paracetamol and anti-inflammatory agents were prescribed by her general practitioner, without appropriate effect. She reported no history of fever, no neck stiffness, no photophobia, no erythema migrans. She lived in a tick-endemic area (Schoten). Clinical examination was normal. Laboratory analysis showed no signs of inflammation. Serologic analysis showed positive IgG and IgM-antibodies against *Borrelia*. Immunoblot analysis showed only positive IgG antibodies.

Lumbar puncture to exclude neuroborreliosis was performed. Analysis of cerebrospinal fluid revealed pleiocytosis (WBC 108/mm³) and anti-*Borrelia* IgG-antibodies (high intrathecal IgG production index (= IAP): 68.32; IAP>2 = intrathecal IgG production of anti-*Borrelia* antibodies). This result confirms the diagnosis of neuroborreliosis. MR examination of the lumbar spine showed no signs of myelitis. Radicular irritation caused the symptoms. Intravenous antibiotics (Ceftriaxone 2g/24h, 3 weeks) and tricyclic antidepressants, as symptomatic treatment for the neuropathic pain, were started.

The patient made a slow recovery, with little residual pain complaints at the end of therapy.



References

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Conclusion

Neuroborreliosis is a common presentation of untreated Lyme disease. Radiculoneuritis occurs in up to 3% of individuals with peripheral nervous system involvement. Diagnostic work-up includes serologic testing, analysis of cerebrospinal fluid and imaging studies of the appropriate region (MRI).

We chose to treat the patient with Ceftriaxone (although Doxycycline can be considered). It is important to be aware of possible Lyme disease in the appropriate clinical setting, especially in certain geographic areas (locoregional variation).

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