

## An Asymmetric Onset of Neurological Signs Does Not Rule Out the Botulism

Marina Trivisano<sup>1</sup>, Giuseppe d'Orsi<sup>2\*</sup>, Adele Gianmario<sup>1</sup>, Marianna Ciarallo<sup>1</sup>, Maria E. Liuni<sup>1</sup>, Giovanna D'Addiego<sup>2</sup>, Anna Lepore<sup>3</sup>, Teresa Santantonio<sup>1</sup> and Luigi M. Specchio<sup>1</sup>

<sup>1</sup>Clinic of Nervous System Diseases, University of Foggia, Foggia, Italy

<sup>2</sup>Clinic of Infectious Diseases, University of Foggia, Foggia, Italy

<sup>3</sup>Poison Control Center, Riuniti Hospital, Foggia, Italy

### Abstract

Foodborne Botulism is clinically characterized by a symmetric flaccid paralysis of the cranial nerves with a descending involvement of voluntary and breathing muscles leading to respiratory arrest. Asymmetric neurological signs are unusual and in these cases diagnosis could be delayed or frequently missed. We described a 63-year-old man with a clinical picture related to type A botulism characterized by an asymmetric and left lateralized onset of neurological signs associated with a monolateral parotitis. Physicians must be aware that lateralized onset of neurological signs does not rule out the botulism, and it should be considered even in cases of atypical clinical picture.

### Introduction

Foodborne Botulism is a rare disease caused by accidental or intentional exposure to botulinum toxins, characterized by a symmetric flaccid paralysis of the cranial nerves with a descending involvement of voluntary and breathing muscles leading to respiratory arrest and death [1]. Asymmetric clinical signs are unusual for botulism that is typically characterized by a symmetric flaccid paralysis of the cranial nerves. Ptosis, diplopia, blurry vision, and inability to accommodation are very frequent among first symptoms, followed by expressionless facies, dysphagia, lowering of the voice tone and dysarthria, with a descending involvement of voluntary and breathing muscles leading to respiratory arrest and death over hours to days, with a rate apparently proportional to the dose [1]. Therefore, a prompt clinical diagnosis is mandatory to effective treatment [1,2]. In the setting of an outbreak, the diagnosis readily suggests itself. Nevertheless, sporadic cases with atypical clinical features were also reported, and in these cases the diagnosis could be delayed or frequently missed because other causes are usually considered before [1]. Here, we report a new and rare case of foodborne botulism with an atypical clinical presentation.

### Case Report

We observed a 63-year-old man who had presented diplopia a few hours before due to left sixth cranial nerve palsy. It was followed by left ptosis after three days and lowering of his own tone of voice and solid food difficult swallowing on the fifth day. On the sixth day, he complained dry mouth, constipation, and pollakiuria. The physical examination documented asymmetric ptosis (left>right), palsies of the left sixth and third cranial nerves, asymmetric mydriasis (left>right) with sluggish bilateral pupillary response to light, and a mild reduction of facial mimicry. On the seventh day, while the neurological signs were remaining almost stable, the patient presented with a swelled and painful left parotid gland that an ultrasound scan defined as an inflammatory process. Serology tests and CSF examination were negative. However, a treatment with a wide spectrum antibiotic and corticosteroid was started. Brain MRI was normal and electromyography did not show significant decrement upon 30 Hz-stimulation. On the eighth day there was an impairment: the ocular palsies became bilateral and almost complete, bilateral facial palsy became evident and constipation became severe (Figure 1). However, the patient never required intubation and mechanical ventilation. His food history was reevaluated since the patient had previously denied having eaten contaminated food. In that occasion, the patient remembered eating, about ten days before admission, domestically canned spinach, boiled and then preserved

in a jar. Therefore, botulism was actually suspected and immediately it was reported to our poison control center and to the national health authorities using the routine mandatory notification system for the disease. Serum and fecal samples from the patient were analyzed by the national reference laboratory for anaerobic bacteria and botulism at the National Institute of Health in Rome, Italy. Samples recovered from the food were no more available. Subsequently, the diagnosis of botulism (toxin type A) was confirmed by detection of *Clostridium botulinum* in a fecal sample. Botulinum toxin wasn't found in a blood sample. The patient didn't receive serum botulism antitoxin because too much time (more than 15 days) had passed from the food intake. No other botulism cases associated with this episode were identified in the family because the patient was the only one who had eaten the contaminated food. He was treated with cathartic and gradually recovered: parotid gland deflated and neurological palsies improved. Complete recovery of nearly all symptoms was observed within seven weeks.

### Discussion

Atypical cases of botulism were rarely reported. Reviewing through a medline search other similar clinical pictures (incorporating the terms atypical botulism, asymmetrical botulism or botulism), only few cases were found [2-6], and, particularly, an asymmetric clinical presentation has been described in 8-17% of patients who had respectively an asymmetric ptosis or an asymmetric extremely weakness [2]. We reported a new case of type A botulism characterized by an asymmetric and lateralized onset that made botulism diagnosis unlikely. Recently, a similar case characterized by a strictly asymmetric left lateralized onset with slow progression to descending paralysis associated with demyelination of cranial nerves was reported by Filozov et al. [6], but in that case it was due to a type F toxin. Moreover, in our case the onset was not only asymmetrical, but confined to the left side during the first seven

**\*Corresponding author:** Giuseppe d'Orsi, Department of Neurological Sciences, Clinic of Nervous System, Diseases, University of Foggia, Riuniti Hospital, Via Luigi Pinto 1, 71100 Foggia, Italy, Tel: 0039-0881/736125; E-mail: [giudorsi@yahoo.it](mailto:giudorsi@yahoo.it)

**Received** September 17, 2015; **Accepted** September 28, 2015; **Published** September 30, 2015

**Citation:** Trivisano M, D'Orsi G, Gianmario A, Ciarallo M, Liuni ME, et al. (2015) An Asymmetric Onset of Neurological Signs Does Not Rule Out the Botulism. J Neuroinfect Dis 6: 188. doi:[10.4172/2314-7326.1000188](http://dx.doi.org/10.4172/2314-7326.1000188)

**Copyright:** © 2015 Trivisano M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

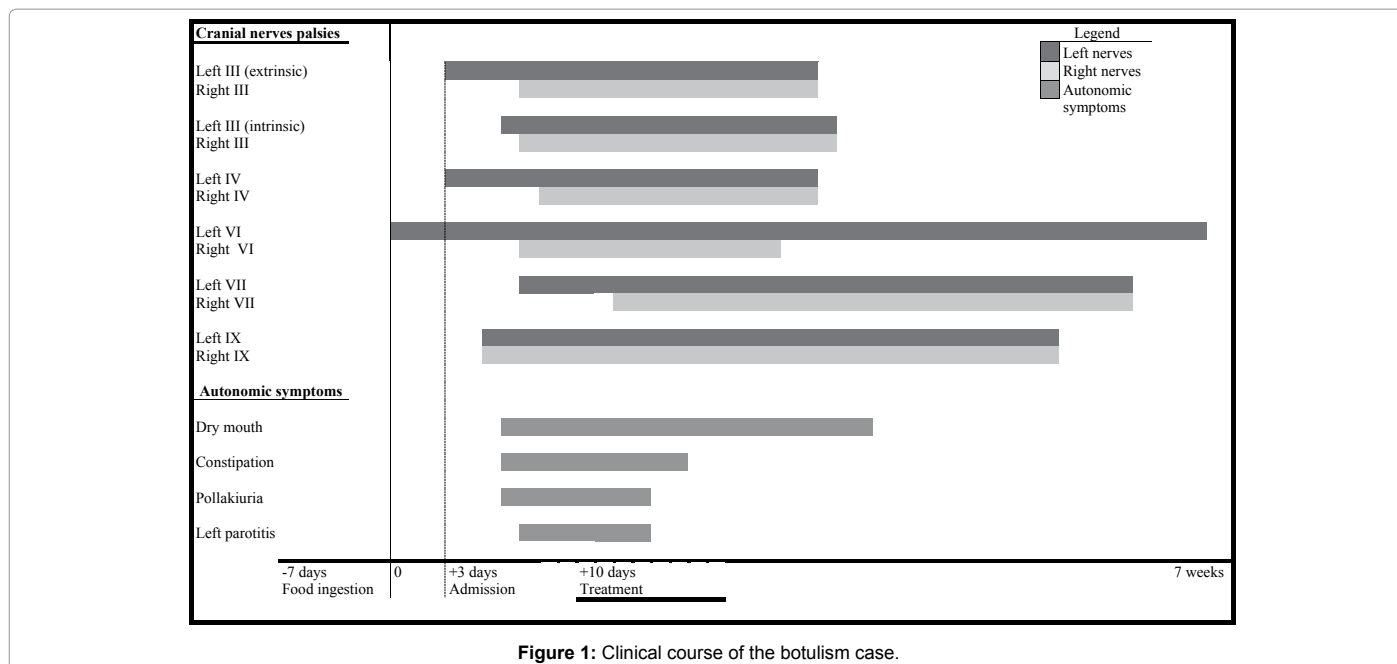


Figure 1: Clinical course of the botulism case.

days, both for the cranial nerves and the secretory palsy of the parotid gland. Parotitis is reported to be a possible, although rare, complication of botulism due to a paralytic secretion of the salivary glands, but in literature only one case of monolateral parotitis has been described [5].

Lastly, in our case symptoms appeared not abruptly but slowly within about 14 days since the contaminated food ingestion. A careful food history is usually fundamental for the diagnosis, but our patient denied having eaten contaminated food and remembered to have eaten the contaminated food only later. On the other hand it is important for the clinician to solicit this information as soon as possible. In fact, in the setting of an outbreak of several people the diagnosis readily suggests itself, even if with some typical features. Conversely, for sporadic cases with atypical clinical features, the diagnosis could be not easy and delayed as other causes are usually considered before (i.e. Guillain Barré Syndrome, myasthenia gravis, stroke syndromes, Eaton-Lambert syndrome, tick paralysis) [1,2,6].

Drawing conclusions, a lateralized onset of neurological signs does not rule out the botulism, and physicians must be aware that it may also occur with a clinical picture atypical and asymmetric.

## Disclosure

The authors have no conflict of interest to declare.

## References

- Sobel J (2005) Botulism. *Clin Infect Dis* 41: 1167-1173
- Hughes JM, Blumenthal JR, Merson MH, Lombard GL, Dowell VR Jr, et al. (1981) Clinical features of types A and B food-borne botulism. *Ann Intern Med* 95: 442-445.
- Bielec D, Semczuk G, Lis J, Firych J, Modrzewska R, et al. (2002) Clinical and epidemiological analysis of patients with botulism hospitalized at the Department of Infectious Disease, Medical University of Lublin in 1990-2000. *Przegl Epidemiol* 56: 435-42.
- Kostrzewski JM (1972) Purulent parotitis as a complication of botulinum toxin poisoning. *Przegl Epidemiol* 26: 429-431.
- Gdynia HJ, Huber R, Kastrup A, Riecker A (2007) Atypical botulism sparing palsy of extraocular muscles. *Eur J Med Res* 12: 300-301.
- Filozov A, Kattan JA, Jitendranath L, Smith CG, Lúquez C, et al. (2012) Asymmetric type F botulism with cranial nerve demyelination. *Emerg Infect Dis* 18: 102-104.

Citation: Fritz K, Karody V, Cohen S (2015) Parechovirus Sepsis and Meningitis in a Neonatal Intensive Care Unit. *J Neuroinfect Dis* 6: 187. doi:10.4172/2314-7326.1000187

## OMICS International: Publication Benefits & Features

### Unique features:

- Increased global visibility of articles through worldwide distribution and indexing
- Showcasing recent research output in a timely and updated manner
- Special issues on the current trends of scientific research

### Special features:

- 700 Open Access Journals
- 50,000 editorial team
- Rapid review process
- Quality and quick editorial, review and publication processing
- Indexing at PubMed (partial), Scopus, DOAJ, EBSCO, Index Copernicus and Google Scholar etc
- Sharing Option: Social Networking Enabled
- Authors, Reviewers and Editors rewarded with online Scientific Credits
- Better discount for your subsequent articles

Submit your manuscript at: <http://www.omicsgroup.info/editorialtracking/neurodiseses/SubmitManuscript.php>