Infant Botulism: An Irish Case Report

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BACKGROUND

Infant botulism (IB) is an intestinal toxaemia caused by the ingestion of spores from *Clostridium botulinum*, or a related bacterium, leading to an acute flaccid paralysis.[1]

Here we present a new patient, with characteristic nerve conduction studies and laboratory-confirmed botulinum neurotoxin type B (BoNT/B), who successfully responded to a combination of botulinum antitoxin (BAT) and human botulinum immunoglobulin treatment (Baby-BIG).

CASE PRESENTATION

A previously healthy 9-week-old infant presented to a regional hospital with **difficulties breastfeeding** and **constipation**. Overnight they developed progressive oropharyngeal and facial weakness with loss of their suck and gag reflexes and sluggish pupillary light reflexes. A descending flaccid paralysis evolved and the patient was transported to the paediatric intensive care unit for ventilation support.

This infant was predominantly breastfed with some exposure to store-bought anti-colic drops and glycerine. The family lived on a farm and a family member worked as a carpenter on local construction sites.

No signs of infection or inflammation were detected on serology, cerebrospinal fluid or extended viral panels. No abnormalities were detected on MRI Brain and Spine. Stool samples had been sent for botulism culture but remained pending.

Bedside nerve conduction studies showed low amplitude compound muscle action potentials (CMAPs) with an incremental increase when repetitive high frequency stimulation at 50Hz was applied. (Figure 1.)

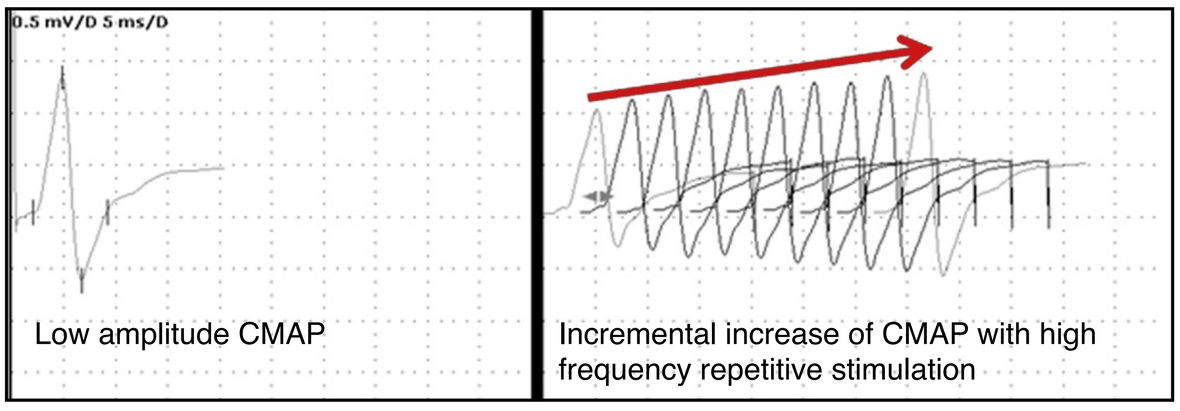

Figure 1. Nerve Conduction Studies

These findings combined with the clinical features strongly supported a diagnosis of infant botulism.[1]

Our patient was treated initially with Equine Heptavalent Botulinum Antitoxin (BAT). It is the only antidote readily available in Ireland and early treatment is shown to be most effective, however, it has a relatively short duration of action (5-7 days).[2] *Clostridium botulinum* neurotoxin type B (BoNT/B) was subsequently detected on the stool samples, therefore, Human Botulism Immune Globulin ('Baby-BIG') was sourced via public health authorities in California.

Baby-BIG is manufactured specifically for infant botulism.[2] It is more effective against BoNT types A and B, has a longer duration of action (up to 6 months) and protects against relapse of symptoms while the infant's gastrointestinal tract remains colonised.[2]

Our patient was discharged home after 2 weeks in hospital, has had close follow-up with their local paediatric services and has made a full recovery.

LEARNING POINTS

Infant Botulism is a rare but reversible cause of flaccid paralysis that requires prompt recognition but can be aided by nerve conduction studies.[1]

BoNT types A and B are most common and early treatment with Baby-BIG remains the gold standard.[2]

Where possible, Baby-BIG should be given to prevent late symptoms or relapse, even if BAT has already been administered.[2,3]

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