



# Syndrome: Case Report With Review of Literature

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## Introduction

The term “Crocodile tears syndrome”(CTS) or the gustolacrimal reflex with lacrimation during eating was first described by Bogorad in the year 1928, and this syndrome is also known as Bogorad syndrome<sup>1</sup>.

It is seen most commonly as a complication of Bell's palsy or traumatic facial neuropathy during recovery phase<sup>2-4</sup>.

## Case Report

- ❖ A 38 years old man, presented with complaints of weakness of all 4 limbs , with change in speech for last two days. There was a history of fever and myalgia 15 days prior to these symptoms. The weakness had progressed to an extent that by day 3 , he had no movement in his lower limbs and in his upper limbs he could just move them with gravity eliminated
- ❖ On examination, his vitals were stable, conscious oriented to time place and person. CNS examination revealed, bilateral LMN facial palsy, hypotonia with 0/5 power in lower limbs and 2/5 power in upper limbs & areflexia. A clinical diagnosis of Guillain Barre syndrome was made and evaluated further. mEGOS score on admission was 11 and EGRIS was 6.
- ❖ CSF study showed albumin-cytological dissociation and NCS study showed pure motor demyelinating polyneuropathy affecting all 4 limbs.
- ❖ His weakness improved over a period of next month. By the end of second month, he had regained full power in all 4 limbs and was able to do all his routine activities.. It was then i.e. after 2 months of his illness, he noticed tearing from his both eyes, when ever he ate something.
- ❖ ON examination, he still had residual bilateral LMN facial palsy(L>R)(Figure 1), and was areflexic. A Schimmer test was done which showed increased lacrimation during eating.





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## Literature Review

The research question for the current review was Guillain Barre Syndrome and Crocodile tears syndrome. PubMed database was searched from year 1947 to 2024 using MeSH terms “Guillain Barre Syndrome” AND “Crocodile tears syndrome” OR “Guillain Barre Syndrome” AND “Bogorad Syndrome” .

**Inclusion criteria:** Case reports and case series with patient of any age group and sex were included in the review. Cases of crocodile tear syndrome only in association with GBS were included in the review.

**Exclusion criteria:** Studies with CTS due to causes other than GBS were excluded from the review. Texts without availability of full text and text in language other than English were also.

Literature search revealed only three case reports till date and ours would be the fourth case report

## Discussion

- ❖ GBS is an inflammatory demyelinating polyradiculoneuropathy which are acquired immunologically. It is a heterogenous group of disease and while most of them are demyelinating in nature, there are axonal variant as well<sup>5</sup>.
- ❖ Cranial nerve involvement is common in GBS(45-75%), and facial nerve is the most common cranial nerve that is involved, seen in almost 50% of the patients<sup>5</sup>.
- ❖ Crocodile tears syndrome occurs when there is aberrant reinnervation of lacrimal gland following injury to either 7th or 9th cranial nerve.
- ❖ There are 2 common theories for gustatory lacrimation, the most common is the aberrant regeneration , where the regenerating secretory fibers destined for salivary glands get misdirected to lacrimal glands<sup>6</sup>. The second theory is ephaptic transmission, or “cross talk”, where one axon, inadvertently excites a neighbouring axon<sup>7</sup>.



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