WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES
SJIF Impact Factor 7.421
Volume 8, Issue 3, 866-870 Case Study ISSN 2278 – 4357

AN UPPER MOTOR NERVE PALSY RESEMBLING BELL'S PALSY: CASE STUDY

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Article Received on
31 Dec. 2018,

Revised on 21 Jan. 2018,
Accepted on 11 Feb. 2019

DOI: 10.20959/wjpps20193-13239

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ABSTRACT

Bell's palsy is paralysis of facial muscles of one side which is unknown origin, and Upper motor neuron palsy (UMN Palsy) is also facial paralysis frequently misinterpreted as Bell's palsy. These are mimicking in morphology and symptoms but the underlying cause of origin is varying in either of them. As both of them can be misdiagnosed easily, the differential diagnosis accounts a greater significance in the management of both conditions. We present a case of Cerebro vascular attack with Right hemiplegic and UMN palsy which is resembled as Bell's palsy.

INTRODUCTION

Facial nerve paralysis is due to damage of seventh cranial nerve. Bell's palsy and UMN palsy are misdiagnosed these days easily and many reports are being published on this issue.[1] Bell's palsy normally has a sudden onset that is often preceded by facial dysesthesia, epiphora, pain, hyperacusis, dysgeusia, and decreased function of the lacrimal gland.[2] It is idiopathic in origin but the affected organ in the body is seventh cranial nerve i.e. facial nerve. Sometimes facial nerve paralysis is a sign of an underlying disease process. Because the facial nerve courses through intracranial, intratemporal, and extracranial regions, determination of the etiology of facial nerve paralysis is complicated.[3] May et al. (1981) evaluated 170 children over a 17-yearperiod and found that Bell's palsy accounted for 42% of the facial nerve paralyses. The remaining causes in children were trauma (21%), otitis media (13%), syndromes (13%), congenital (8%), and (2%). Depending on the cause, prognosis of facial nerve paralysis may be spontaneous regression or rapid morbidity and fatality. It should

not be assumed that a child presenting with facial nerve paralysis has Bell's palsy because more serious disorders can cause similar signs and symptoms.[4]

CASE SUMMARY

A 75 year old female patient was presented to the general medicine department with chief complaints of weakness of right upper and lower limb since evening. Her past medical history disclosed that she was a known case of CVA.

On general examination she was conscious but not co-operative. On physical examination she was pallor. The observed signs were slurred speech, tongue bite, not recognising people. As per Laboratory data she is anaemic with 7.5 gm/dl haemoglobin. All other laboratory parameters were in normal limits. The impression of CT brain report is multifocal infarcts in bilateral capsulogenic and left occipital-parietal regions, small vessel ischaemic changes in bilateral periventricular white matter and corona radiate and age related diffuse cerebral atrophy. Laboratory data is tabulated in the table 2 given below.

Table No 1: Laboratory data.

Parameter	Observed value	Normal value
Haemoglobin	7.5 gm/dl	12-16gm/dl
WBC	$11\times10^3/mm^3$	$4\text{-}10X10^3/mm^3$
Neutrophils	$7\times10^3/mm^3$	$2\text{-}7.5x\ 10^3/mm^3$
Monocytes	$1\times10^3/mm^3$	$0.2\text{-}1x\ 10^3/mm^3$
Lymphocytes	$2.3\times10^3/mm^3$	$2.4\times10^3/mm^3$
Eosinophils	$0.4\times10^3/mm^3$	$0\text{-}0.5x\ 10^3/mm^3$
ESR	25mm/hr	15 mm/hr
Bleeding time	2.0 min	2-9 min
Clotting time	4.18 min	8-15 min
INR	2	Below 1.1

Based on subjective and objective examination she was diagnosed as CVA with right hemiplegia and UMN palsy. In part with management of this condition, the treatment regimen prescribed was Cognitive enhancers, anti-platelets and vitamine supplements.

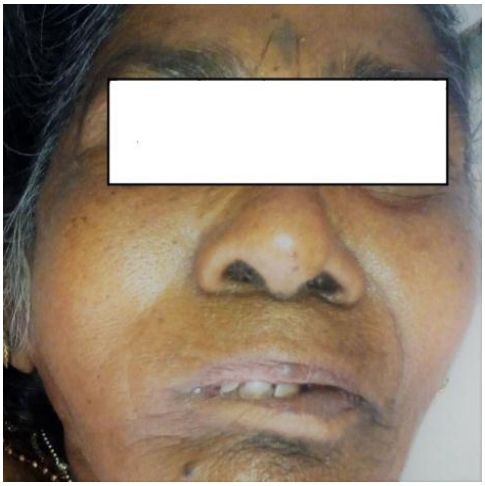

Fig 1: Showing deviation of mouth to left side

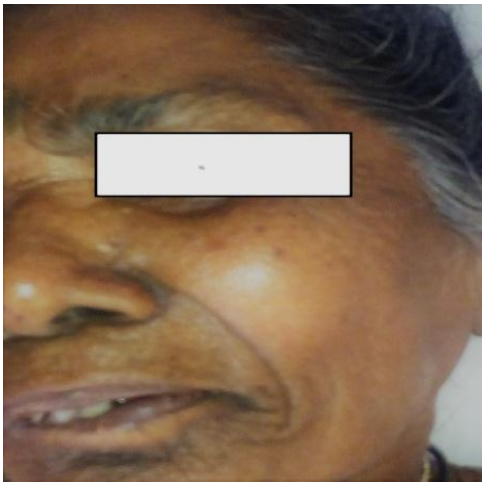

Fig 2: Showing drooping of facial muscles

DISCUSSION

The facial nerve is a mixed cranial nerve with a predominant motor component which supplies all muscles concerned with unilateral facial expression. Knowledge of its course is vital for anatomic localization and clinical correlation. The delineated anatomy[5] of facial nerve is depicted in figure 3.

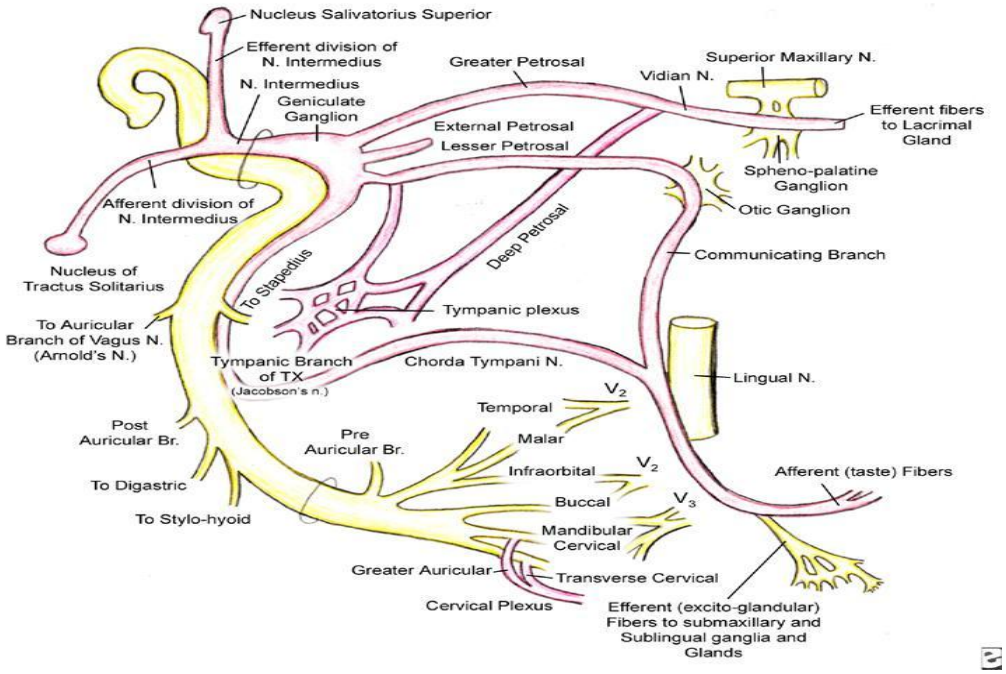

Fig 3: Anatomy of facial nerve.

Since Bell's palsy is a facial paralysis of unknown origin, it is essential to rule out other causes of facial paralysis before making the definitive diagnosis, which implies the intervention.

There are many theories about the cause of Bell's palsy but the aetiology is unknown. The most popular hypothesis is that it is caused by a virus similar to Herpes simplex or zoster. Other proposed aetiologies include physiologic compression of the nerve due to arteriospasm, venous congestion or ischemia, and narrowing of the bony canal. Several case reports support a familial tendency suggesting the inheritance of an aberrant facial canal.[6]

The signs of Bell's palsy include widening of the palpebral fissure, flattening of the nasolabial fold, and drooping of one corner of the mouth when smiling. The symptoms of Bell's palsy include pain and numbness on the affected side of the face, especially in the temple, mastoid area, and along the angle of the mandible. The mouth may be dry due to decreased salivary secretion and there may be loss of taste on the anterior of the tongue as well as hyperacusis on the affected side.[7]

Facial nerve paralysis is also augmented by cerebrovascular attack (stroke) as the pathologic complications of stroke include nerve damage. In stroke, the paralysis of facial muscles is due to either upper motor neuron lesion. The differences between an upper motor neuron lesion and lower motor neuron lesion[8] were given below.

Table No 2: Differences between UMN and LMN lesions in facial nerve palsy.

	Upper motoneuron lesion(supranuclear)	**Lower motoneuron lesion(nuclear or infranuclear)**
Common cause	Stroke	Injury to facial nerve
Site of lesion	Damage to pyramidal tracts	Damage to facial nerve in: -Internal acoustic meatus by a tumour -Middle ear by infection or operation -Facial canal by perineuritis, Bell's palsy -Parotid gland by a tumour -Lacerations of the face
Clinical presentation	Upper part of face will be left normal, as neurons supplying this part of the face receive corticobulbar fibers from both cerebral cortices.	Distortion of face: -Drooping of lower eyelid -Angle of mouth will sag on affected side

CONCLUSION

Even though Bell's palsy is highly prevalent in paediatric population as Unilateral facial paralysis, it can also be observed as UMN palsy in old age people who are diagnosed with cerebrovascular accident due to nerve damage in brain which is caused by excessive pressure

and clot formation. Both forms can be misinterpreted easily as they are very similar in morphology, and symptomatology. For right diagnosis and treatment strategy, a sound knowledge on other causes of facial paralysis and detailed characteristic features is necessary for treating physician.

ACKKNOWLEDGEMENT

We wish to express our heartfelt gratitude to our institutional guide S.Kareemulla, Assistant Professor, P. Rami Reddy Memorial College of Pharmacy, for guiding us and for giving his support in expedited completion of this work.

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