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A Case of Infective Cavernous Sinus Thrombosis Presenting As Complete Unilateral Ophthalmoplegia and Facial Nerve Palsy Following Electrocution

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I. INTRODUCTION

Septic Dural Sinus Thrombosis is a rare condition with only few cases reported in the during the antibiotic era. The cavernous sinuses are the most centrally located of the dural sinuses, these irregularly shaped sinuses contain multiple trabeculae that act as sieves to trap bacteria.A number of cranial nerves are located within the Dural sleeve. Infections of the face, including the nose, ear, orbits, tonsils, and soft palate, can spread to the cavernous sinus.[1,2]

Case details:

History:

The patient in this case is a 53 year old male with Diabetes Mellitus as known comorbidity suffered electrocution (entry : right hand and exit site : nose) 2 months back. Following the electric injury after 10 days he developed purulent ear discharge in right ear, headache, diplopia and progressive diminution of vision in right eye. Over a period of 10 days after following symptoms he developed right sided LMN type facial nerve palsy and complete Ophthalmoplegia.

Evaluation

On examination:Involvement of Cranial Nerves – III,IV, V leading to complete unilateral right side ophthalmoplegia. (Figure 1 & 2) Involvement of V1 and V2 divisions of Trigeminal nerve leading to absence of sensations on right side of face.

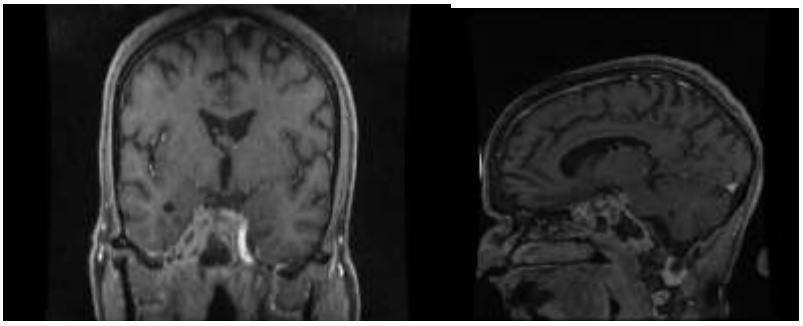
Involvement of Facial nerve leading facial asymmetry, loss of nasolabial folds on right side and mouth deviation left side


Figures: 1&2

Investigations

MRI images below

1 2



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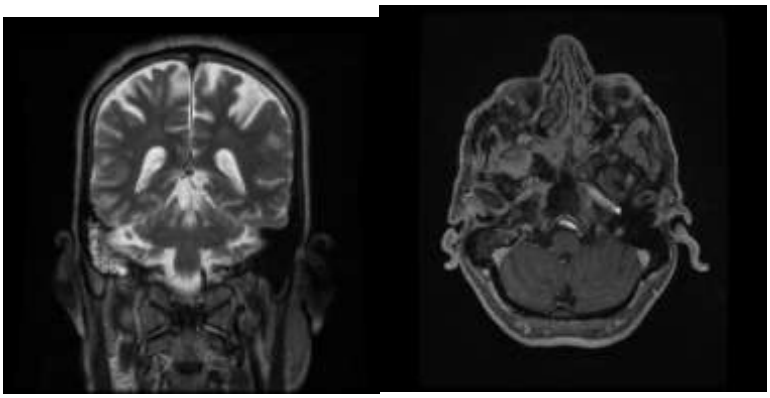

Image – 1 : Right Cavernous sinus is widened showing enhancement of soft tissue component on Contrast MRI

2 : Soft tissue enhancement seen at sphenoid sinus , clivus/base of skull

3 : Fluid in mastoid air cells suggestive of mastoiditis

4 : Soft tissue enhancement in infra temporal fossa and sphenoid wings

On above based MRI images he was diagnosed as a case of Infective Cavernous sinus thrombosis.

CT images : suggestive of skull base osteomyelitis

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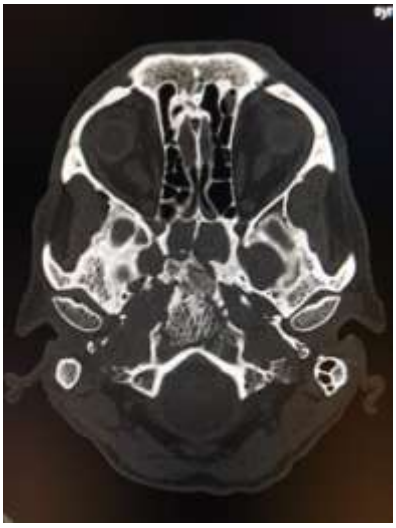

E. coli has been isolated from purulent ear discharge culture

Management

He was started broad spectrum antibiotics and anti fungals initially and replaced them with culture sensitive antibiotics along with anticoagulation. [3]

II. DISCUSSION:

Septic Cavernous sinus thrombosis are very rare in antibiotic era , however there are few case reports reported worldwide. There are case reports where an electrocution injury led to tympanic membrane rupture. In this case the patient developed ear infection following electrocution which progressed to mastoiditis, sinusitis, skull base osteomyelitis and finally cavernous sinus thrombosis leading to cranial nerve palsies.

Most common pathogens isolated from Infective Cavernous sinus thrombosis are bacteria like MRSA (Methicillin Resistant Staphylococcus Aureus), Streptococcus and rarely gram negative bacteria, Anaerobes and fungi like Aspergillus and Mucormycosis.[4]

Treatment protocol includes IV (Intra-venous) antibiotics covering MRSA , gram negative and anaerobes with broad spectrum anti-fungal cover for a period of 4 weeks , re assess with imaging investigations and can proceed for surgical drainage of sphenoidal sinus or debridement in case of no improvement.[5,6]

III. CONCLUSION:

Infective Cavernous sinus thrombosis cases are very rare in antibiotic era, this case is very rare where patient developed infective cavernous sinus thrombosis with multiple LMN type cranial nerve palsies following electrocution. Henceforth clinicians in developing countries should consider Infective etiology of multiple cranial palsies in such kind of scenario to avoid complications.

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