BELLS PALSY: A CASE REPORT

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Abstract

Bell’s palsy is a circumstance in which there is weakness or paralysis in muscles that control facial expressions. It typically includes muscle tissues in the forehead, eye, cheek and mouth. It is also called facial paralysis that effects in inability to control facial muscular tissues on affected sides. It results in swelling and inflammation of nerve that controls the muscles on one side of face. It might be reaction that occurs after viral infection signs and symptoms consist of rapid onset of slight weakness to general paralysis on one aspect of face. Facial droop and difficulty making facial expressions like closing of eyes and smiling, drooling, pain around jaw, headache, increased sensitivity to affected side, changes in quantity of tears and saliva which is produced. Risk factor of bell’s palsy is bacterial infections such as Lyme disease, typhoid fever, syphilis, tuberculosis, neurological disorder includes Gullian-barre syndrome, multiple sclerosis, traumatic injury to head or face. The exact cause is unknown however many medical researchers believe it’s miles in all likelihood caused through viral infection. Herpes simplex which causes cold sores, genital herpes and HIV which damage immune system. Diagnosis of bell’s palsy in which doctor examines the patients head, neck, ears, facial muscles, Electromyography (EMG), Magnetic resonance imaging (MRI),Computed tomography scans, X-rays. Treatment includes medicinal drugs like corticosteroids, antiviral drugs, physical therapy, and surgical treatment- decompression surgery to relieve stress on facial nerve by opening bony passage that nerve passes through.
Keywords: Bell’s palsy, Electromyography, Facial paralysis, Gullian-barre syndrome, Herpes simplex, Lyme disease, Multiple sclerosis, Syphilis.

Introduction

The most common kind of facial paralysis in kids is Bell’s palsy that’s described as acute, idiopathic, unilateral paralysis of the facial nerve without any related disorders [1]. It is normally caused by traumatic, infective, inflammatory or compressive conditions on the nerve. Many cases with no identifiable etiologies existed and it is categorized as idiopathic. Bell’s palsy is occurred mostly by the virus like herpes simplex virus (HSV) and other viruses consisting of Epstein –Barr virus, human deficiency virus and hepatitis B virus [2]. It is related with symptoms like rapid onset of unilateral facial palsy occurring over some hours to a day, sudden onset of intense ache in and across the ear 24 hours before the onset of facial palsy, face turns in to frequently numb or stiff but no actual sensory loss takes place, unable to close the eyes, loss of taste sensation, noise intolerance. Facial appearance becomes asymmetrical and saliva dribbles down the angle of the mouth [3]. Diagnosis is performed by using records evaluation, taking the history of onset and time course of the paralysis and its eventual progression is necessary. ENT exam gives special interest to external auditory canal, the eardrum and mastoid region. Facial nerve evaluation involving examination of facial movements and spontaneous expressions which is classified according to House-Brackmann grading system which involves a scale of (I-VI) GradeI- normal facial function, GradeII- mild dysfunction, GradeIII- moderate dysfunction, GradeIV- moderate to severe dysfunction, GradeV- severe dysfunction, GradeVI- total paralysis. Electromyography (EMG) confirms the nerve damage and determines severity and extent of nerve involvement. Blood tests, Magnetic resonance imaging (MRI), Computed Tomography [4,5]. The exact Pathophysiology of bell’s palsy is unknown. The facial nerve which passes through the portion of temporal bone is referred as the facial canal. A popular theory suggests that edema and ischemia result in compression of facial nerve within this bony canal. The cause for edema and ischemia is not known. This compression has been noticed in MRI scans with facial nerve enhancement. The common site of compression of facial nerve in bell palsy is the labyrinthine segment which is narrowest, meatal foramen with a diameter of about 0.6mm and is the first portion of the facial nerve. The tight confines of the facial canal, leads to inflammatory, demyelinating, ischemic, or compressive processes
that impair neural conduction at this site. Injury occurs peripheral to the nerve’s nucleus of the facial nerve in bell palsy. The injury can occur near or at the geniculate ganglion. Motor paralysis accompanied by gustatory and autonomic abnormalities are seen when the lesion is proximal to the geniculate ganglion, same effect is seen when the lesion is located between geniculate ganglion and origin of the chorda tympani except that they spare lacrimation. Facial paralysis occurs if the lesion is at stylomastoid foramen [5]. Drug therapy- The main of the drug therapy is to minimize the possibility of incomplete resolutions and reduce the risk of sequelae, such as synkinesis, autonomic dysfunctions (Eg: Crocodile tears), facial spasms. When Bell’s palsy occurs in adults, it is well known that glucocorticoids in combination with antiviral therapy are recommended. Corticosteroid therapy- treatment with corticosteroids is most widely accepted one but it is controversial because most patients recover without treatment. The class of drug which falls under this category is prednisone (Deltasone, Orasone) which is given at a dose of 1-2mg/kg within 3days of onset of symptoms and is given for 10 days by gradually decreasing the dose.

It is the standard drug used in the treatment of bell palsy. It is a glucocorticoid which readily absorbs from gastrointestinal tract and has anti- inflammatory and immune modulating effect. Antiviral therapy- antiviral drugs are used in combination with prednisone in the treatment of bell palsy. Medications which fall under this category are acyclovir and valacyclovir. Acyclovir is a prodrug which acts by inhibiting viral DNA replication thereby inhibiting the activity of HSV-1 and HSV-2. Valacyclovir acts similar to acyclovir by rapidly converting into acyclovir [4,8]. Traumatic facial paralysis is associated with risk factors like mother’s first child, birth weight greater than 3500g, use of forceps, cesarean birth and prematurity. Congential facial nerve paralysis is associated with Mobius syndrome [4]. Complications in bell’s palsy is contracture-while face is paralysed, affected muscles will contract and causes feeling of tightness, facial muscles of affected side appear to be lifted, and affected eye can appear smaller than unaffected eye. Synkinesis-The most common synkinesis affects the eye and mouth muscles: during a voluntary movement of the mouth, for example a smile, there could be an involuntary eye closure and vice versa. Less frequently, involuntary movements of the chin can be seen during voluntary movements of the mouth or the voluntary eye closure. Eye dryness and corneal ulceration, psychological disorders- anxiety, depression, low self esteem [4,9].
Case study

A female child of age 9 years was admitted in hospital with complaints of deviation of mouth since 3 days, while talking lips moving upwards, watering of eyes. The vitals of patient were Temperature- 98.6F, Heart rate-99beats per minute, Respiratory rate- 24breaths/min, Blood pressure- 120/80mm of Hg. Her laboratory investigations were found to be Red blood cells- 4.3million cells per micro liter, Hemoglobin-12grams per deciliter, White blood cells- 8.8thousand per cubic milliliter, Neutrophils-61%, Lymphocytes-32%, Eosinophils-1%, Basophils-0%, Mean corpuscular volume- 83.9femtolitres, Packed cell volume- 36.5volume percentile, Mean Corpuscular Hemoglobin-27.6picograms, Total bilirubin-0.3milligrams per deciliter, Direct bilirubin- 0.1milligrams per deciliter, Total protein- 7.5grams per deciliter, Albumin-4.89grams per deciliter, Globulin- 2.6grms per deciliter, Aspartate transaminase-22 international units per litre, Alkaline transaminase-17 international units per litre, Alkaline phosphatase-269 international units per litre, Urea-21grams per decilitre, Serum Creatinine-0.6milligrams per decilitre, Sodium-143milli equivalent per litre, Potassium- 3.7milli equivalent per litre, C-reactive protein- 3.68milligrams per decilitre. ENMG/NCS/EP report- left side bell’s palsy facial nerve conduction- CMAP amplitudes are reduced in left side (1.1mv) compared to right (2.3mv) when recorded nasalis muscle. Blink reflex- recorded from orticularis oculi study show normal ipsilateral R1 and R1 latencies and normal R2 contra lateral latencies on bilaterally- conclusion: blink reflex study s/o left efferent pathway lesion, facial axonal neuropathy to correlative clinically. MRI showed no abnormalities. The patient was treated with Injection Ceftazidime 750mg IV twice a day to treat bacterial infections or hospital acquired infections.

Injection Paracetamol 300ml IV was given 6th hourly to reduce fever. Injection Dexamethasone 1cc was given in 10ml normal saline twice a day to treat bell palsy. Syrup Fexofenadine 5ml was given three times a day orally to reduce allergic reaction. Tablet Montelukast was prescribed at bedtime to reduce the inflammation. Syrup Deflazacort 5ml was given twice a day to treat bell palsy. Tablet Acyclovir 400mg PO twice a day was given to treat viral infection. Syrup Multivit-z 10ml twice a day was given as vitamin supplement. Syrup Aptivate was prescribed to increase the appetite of the patient.
Discussion

Bell’s palsy is a neuropathy involving seventh cranial nerve also known as the facial nerve palsy. Based on the clinical symptoms and Electromyography report the child was diagnosed with Bell’s palsy in this case, whereas Kamleshun Ramphul reported a case of three year old boy in which the diagnosis was based on only clinical symptoms [2]. Appropriate treatment was given to the child using corticosteroid therapy in combination with antiviral agents. Antiviral drug acyclovir and a corticosteroid Dexamethasone was given as a therapy in this child to treat bell’s palsy. Many conflicts have been raised over the use of prednisone along with acyclovir but good response was shown by the patient in this case.

Conclusion

A nine year old girl was diagnosed with bell’s palsy based on clinical symptoms and electromyography report due to early diagnosis she was treated with combination therapy of dexamethasone which is a corticosteroid and an antiviral drug acyclovir, a good response was shown by the child with the combination therapy. Proper follow-ups were scheduled to monitor the progress of the patient and parents should be advised to look out for any changes in signs and symptoms of the child.

References


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