Odyssey of few year- Case of Rapsyn mutation Congenital Myasthenia Syndrome

S Ahsan[1], M Prasad[1]
Paediatric Neurology, Nottingham Children's Hospital

Objectives
The congenital myasthenic syndromes (CMS) are a group of rare genetic disorders characterized by impaired neuromuscular transmission. Patients with congenital myasthenia often carry a long-standing incorrect diagnosis, such as an undefined (on muscle biopsy) congenital myopathy. It is important to get a definite genetic diagnosis since this guides prognosis, genetic counselling and, most importantly, appropriate treatment choice.

Methods
We report a case of 10-year-old boy admitted with muscle weakness, quieter speech, drooling of saliva and ptosis following two days of history of coryzal illness. He was not able to walk very well for two to three days before the admission and struggled to hold his head up. Within a couple of days of admission, he improved remarkably. At that time had mild left side ptosis which became more pronounced on testing and did show fatigability.

He was born full term via normal delivery and did not require resuscitation at birth. Developmental milestones with normal gross motor. He had difficulty in feeding due to inability to close his mouth and drinking from straw.

Parents reported that he would keep head leaned backwards to watch TV. Ptosis has been present from few months of age however it would get more pronounced when he is tired.

He always had the tendency of keeping his mouth open and drooled saliva. At ten months of age, he was intubated after having bronchiolitis and it was recorded to be unusual for the severity of bronchiolitis.

He has had previous presentation to A&E at 6 years of age after a viral infection due to loss of head control, weakness, and difficulty in swallowing.

He also had corrective surgery for squint under ophthalmology and under ENT for nasal endoscopy due to concerns of inability to move uvula. There is no family history of note.

He was investigated for baseline test, thyroid antibodies and autoantibodies and for myasthenia antibodies, which all came back negative. His MRI and spine was reported to be normal.

Nottingham University Hospitals NHS
NHS Trust
Nottingham Children's Hospital

Single fibre EMG studies with stimulation for the left orbicularis oculi muscle showed increased mean jitter values and several blocks indicative of a neuromuscular junction transmission disorder, consistent with myasthenia gravis. Genetic testing at regional congenital myasthenia service was arranged.

Result

Genetic test confirmed RAPSYN- related congenital myasthenia syndrome awaiting parental testing to confirm bi-allelic pathogenic RAPSYN variant cause of autosomal recessive myasthenia syndrome.

Discussion:

Rapsyn CMS is characterised by mutations in the AChR clustering protein rapsyn which cause postsynaptic receptor deficiency. Typical features of rapsyn congenital myasthenia are of onset at birth.
Acute life-threatening crises with respiratory failure are frequent in rapsyn congenital myasthenia particularly during infancy and early childhood. Crises usually, occur in the context of infection.
The long-term prognosis of rapsyn congenital myasthenia is good, with the reduced frequency and severity of life- threatening crises during childhood and usually resolving before 10 years of age.