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CASE STUDY

MEASLES-RUBELLA (MR) VACCINE INDUCED ACUTE CONVERSION REACTION: A COINCIDENTAL OCCURRENCE

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ABSTRACT

A 14 year-old boy, without relevant previous history, completely asymptomatic before one day of MR (measles-rubella) vaccination, developed paroxysmal event of muteness, intermittent episodes of bilateral lower limb weakness with difficulty in walking, visual hallucinations and suicidal ideas and eventually developed Psychosis after a week of his dose of MR vaccination. EEG, MRI-Brain, MRI-Spine were normal. The diagnosis was confirmed as Acute Conversion Disorder possibly triggered due to MR vaccine. Patient was started on Tab. Clonazepam but his condition was not improved and on regular follow up, is put on Tab. Clonazepam, Tab. Risperidone and Tab. Amitriptyline for control of worsening of symptoms. It is suggested that in some cases, vaccination may be the triggering factor for autoimmune and neurological disturbances in genetically predisposed individuals and physicians should be aware of this possible association. The relationship between vaccinations and onset of serious neuropsychiatric diseases is certainly a coincidence rather than causality.

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INTRODUCTION

India, along with ten other WHO South East Asia Region member countries, have resolved to eliminate measles and control rubella/congenital rubella syndrome (CRS) by 2020. In addition to this, Ministry of Health and Family Welfare has initiated measles-rubella (MR) vaccination campaign in the age group of 9 months to less than 15 years in a phased manner across the nation (<http://www.searo.who.int/mediacentre/features/2017/india-measles-rubella-vaccination-campaign/en/> [Last accessed on 2018 Oct 5]; Shrivastava et al., 2018). While some neurological and psychiatric events have been reported no evidence of Conversion Disorder exists (American Psychiatric Association, 2018). Incomplete understanding of the causes of the neuropsychiatric diseases has sometimes led to the belief that they are caused by vaccinations; in reality,

however, the relationship between vaccinations and the onset of serious neuropsychiatric diseases is certainly one of coincidence rather than causality.

Case History

A 14 year-old male was brought to Emergency Medicine Department with chief complaints of inability to speak, difficulty in walking with bilateral lower limb weakness since 7 days and altered behaviour since 3 days. Patient was completely asymptomatic before 1 week, before which he was given a MR vaccine shot at school under the MR vaccination campaign. After half an hour patient had a paroxysmal event of muteness, unable to open his mouth with clenching of teeth, episodes of eye closure with unresponsiveness to commands, intermittent episodes of bilateral lower limb weakness with difficulty in walking, unable to identify his relatives, paroxysmal episodes of staring in space associated with sudden headache, visual hallucinations, suicidal ideas,

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episodes of unconsciousness at home and was taken to a private hospital where he was admitted and given Inj. Pantoprazole 40mg iv BD, iv fluids, Tab. Folic acid 5mg +Methylcobalamin 1500µg +Pyridoxine 3mg+Vitamin D3 2000 IUOD, Tab. Lorazepam 1mg OD, Tab. Etizolam 0.25mg OD and Tab. Fluoxetine 20mg OD. The physician diagnosed it as a case of Acute Conversion Reaction possibly triggered due to MR vaccine. The patient was discharged and referred to our hospital as the condition did not improve. On admission to our hospital all medications were stopped except Tab.Folic acid 5mg +Methylcobalamin 1500µg +Pyridoxine 3mg+Vitamin D3 2000 IUOD. Neurological examination including reflexes, muscle tone and sensations was normal. Patient's complete hemogram and electrolyte levels were also normal. Expert clinical opinions of Neurologist and Psychiatrist were taken. EEG, MRI-Brain, MRI-Spine were also normal. The diagnosis was confirmed as Acute Conversion Reaction possibly triggered due to MR vaccine. Patient's first degree relative is having Chronic Psychiatric Illness with episodic psychotic behaviour showing aggression and abuse of relatives as per the history obtained. The patient was started on T. Clonazepam 0.25mg TDS with T. Multivitamin OD for 5 days. Patient's condition was not improved. The patient on regular follow up is put on T. Clonazepam, Risperidone and Amitriptyline for control of worsening of symptoms. It is difficult to establish MR vaccine as a cause of this illness but patient was totally asymptomatic before he took vaccine, so this event may possibly have triggered an inherent psychiatric disorder.

DISCUSSION

Awareness of Adverse events following immunisation (AEFIs) has increased dramatically in the minds of the public and those administering vaccines over recent years. AEFIs are generally categorised as those due to human error in administration, those due to the vaccine itself, and coincidental events (Pathmanandavel, Karrnan et al. 2014). Coincidental events occur after a vaccination has been given but are not caused by the vaccine or its administration. Coincidental events are inevitable when vaccinating in infancy and early childhood, especially during a mass campaign. Applying the normal incidence of disease and death in these age groups along with the coverage and timing of immunizations allows estimation of the expected numbers of coincidental events after immunization. Immediate investigation of a severe adverse event attributed to a vaccine, but not causally related to it, is critical in order to respond to a community's concern about vaccine safety and maintain public confidence in immunization (http://www.who.int/vaccine_safety/initiative/tech_support/Part-3.pdf.(Last Updated in February 2018, Last Cited on Oct 5,2018).). Many severe neuropsychiatric diseases, such as Alzheimer's disease, multiple sclerosis, autism, schizophrenia, conversion disorder, encephalopathies and transverse myelitis do not yet have a well-defined etiopathogenesis, although important progress has been made on their causes. Several studies have shown that these diseases are both due to genetic factors and environmental factors (Gasparini, 2015). Although a clear temporal relationship between the administration of a vaccine and the adverse event is sometimes observed, in the vast majority of cases no causal connection can be demonstrated. Thus, it is often concluded that, majority of serious ADRs that occur postvaccination are coincidental and unrelated to the vaccine and true serious vaccine-related ADRs (i.e., permanent disability and death) are extremely rare

(Tomljenovic, 2012). There are however several important reasons why causality is rarely established with regard to vaccination-associated ADRs. These include: the criteria for causality are poorly defined; latency period between vaccination and autoimmunity can range from days to years; neurological outcomes, as in other neurological disorders may take considerable periods to manifest as obvious pathology; post-vaccination adverse manifestations can be atypical and might not be compatible with a defined autoimmune or neurological disease; individual susceptibility factors are not considered and a triggering role of the vaccine in the adverse outcome is not considered (Tomljenovic, 2012). In recent years it has become increasingly clear that vaccines may be a triggering factor for severe neurological manifestations of autoimmune etiology. Some of these autoimmune phenomena may be explained by molecular mimicry whereby an antigen of a recombinant vaccine or of a live, attenuated virus may resemble a host antigen and trigger autoimmunity (Tomljenovic, 2012; Pathmanandavel, 2014). Owing to their structural resemblance, antibodies and autoreactive T-cells not only destroy the invading pathogen but also attack the host tissue. ^{[6][7]}In psychotic disorders, autoantibodies bind to the antigen expressed on neuronal cell surface. Crucially, the targets of autoantibodies are typically proteins that play an important role in neurotransmission, suggesting a plausible mechanism whereby inflammatory processes may lead to neuropsychiatric disease (Pathmanandavel, 2014).

Conclusion

A severe neurological disease may arise simply by chance after the administration of a vaccine. This has prompted speculation that such diseases may actually be caused by the vaccination, not because the true causes of many neurological diseases are largely unknown. In reality, it should be borne in mind that the case reports published in the literature have almost always shown only a temporal association between vaccination and neurological events, and no accurate causality has been formatted yet.

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REFERENCES

- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Washington, DC: American Psychiatric Association; 2013.(Last Cited on Oct 5,2018).
- Gasparini R., Panatto D., Lai PL., Amicizia D. 2015. The "urban myth" of the association between neurological disorders and vaccinations. *J. Prev. Med. Hyg.*, 56:E1–E8. http://www.who.int/vaccine_safety/initiative/tech_support/Part-3.pdf.(Last Updated in February 2018, Last Cited on Oct 5,2018).
- Pathmanandavel, Karrnan et al. 2014. Antibodies to Surface Dopamine-2 Receptor and N-Methyl-D-Aspartate Receptor in the First Episode of Acute Psychosis in Children. *Biological Psychiatry*. July;77(6):537-547.
- Shrivastava SR., Shrivastava PS., Ramasamy J. 2017. Measles Rubella campaign in India. *Int. J. Prev. Med.*, 9:31.
- Tomljenovic L., Shaw CA. 2012. Death after Quadrivalent Human Papillomavirus (HPV) Vaccination: Causal or Coincidental? *Pharmaceut Reg Affairs* S12:001.
- World Health Organization. 2018. India's Measles-Rubella Vaccination Campaign a Big Step Towards Reducing Childhood Mortality, Addressing Birth Defects. 2016. <http://www.searo.who.int/mediacentre/features/2017/india-measles-rubella-vaccination-campaign/en/>[Last accessed on Oct 5].