

## A CASE REPORT

### POST-MUMPS VACCINATION PAROTITIS

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#### ABSTRACT

*Mumps is a common communicable disease among children. It is one of 31 vaccine-preventable diseases at present. The presentation of a two and half year old boy who developed parotitis for the first time three weeks after taking a Mumps vaccine is outlined. Potential adverse events following administration of similar vaccines are discussed. Pediatricians and child health workers in Africa are less experienced in Mumps vaccines due to the absence of Mumps-containing vaccines from their national immunization programs. This description of a child with post-Mumps vaccine parotitis (a comparatively common adverse reaction) serves as learning point on performance and reactions to expect after Mumps-vaccine containing immunizations.*

**Keywords:** Mumps, MMR, Parotitis, Vaccine

#### Introduction

Mumps is a common childhood viral infection presenting as fever and painful unilateral or bilateral parotid swelling. Parotitis persists for 2 – 7 days. Though mostly self-resolving, potential complications include epididymorchitis (usually in adolescents), meningoencephalitis (notably in adults) and sensorineural hearing loss. Mumps vaccination is practiced in more than 122 countries globally and is lowering the incidence of this communicable disease, especially in the developed world (1).

Experience with Mumps vaccines in Africa is lacking among pediatricians and child health

workers due to its absence from the national programs of immunization. This case highlights the presentation and evaluation of post-mumps vaccine adverse effects, notably parotitis.

#### Case presentation

A two years and six month old boy presented for a routine health check-up. He was asymptomatic with normal vital signs, anthropometric measurements within normal limits for age and normal physical findings. An assessment of vaccines he had received so far showed he had taken a single dose of the measles vaccine at the age of 9 months. All other age-appropriate vaccines had been received according to the schedule. After a

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discussion of the available measles vaccine options and the need for a second measles vaccination for his age with his parent, he was given a combined measles-mumps-rubella vaccine (MMR) vaccine. No immediate vaccine-related symptoms were observed.

Nineteen days after his vaccination, the boy started complaining of left ear pain. His mother noted a swelling under his left ear and recorded low grade fever at home (38oC). He had no further symptoms including runny nose, cough, ear pulling or ear discharge. There were no sick contacts. He had an asymptomatic 9 month old sibling. His family had limited excursions outside their home due to the ongoing COVID19 outbreak. His parent reported that he had never experienced similar symptoms in the past and his past medical illness was unremarkable except for a few episodes of treatment for upper respiratory infections and superficial skin fungal infections. On physical examination, his temperature was 37.5oC. He had a left sided parotid gland swelling with a slight anterior displacement of his left ear. The rest of his examination including otoscope examination were normal. In keeping with the typical incubation period of mumps (2 – 3 weeks), a likely diagnosis of a post-MMR vaccination parotitis was made. His parent was counseled on the course of his illness and encouraged to administer symptomatic treatment with adequate hydration. His symptoms and physical findings had resolved upon evaluation one week later.

## Discussion

Currently available mumps vaccine containing vaccines are the MMR (Measles, Mumps, and Rubella) and MMRV (Measles, Mumps, Rubella, and Varicella) vaccines. The mumps virus strains present in these vaccines are varied: commonly the Jeryl Lynn, Urabe and Leningrad-3 strains (2). Mumps vaccines have efficacies of 70% (Urabe) to 82% (Jeryl Lynn) after single doses and approximately 10% more with two doses. Benefits are targeted towards preventing or causing only subclinical Mumps infections. In outbreak settings vaccine effectiveness is lower (3).

Minor post-MMR vaccination adverse reactions include low grade fever and pain at injection site. Parotitis was reported in 1.8% of more than 14,000 Iranian children following receipt of MMR, occurring 18 times more frequently than fever or convulsions (4). Most Post-Mumps vaccine parotitis occur within 10 – 14 days following vaccination and are usually thought to be subclinical and non-communicable compared to natural infection (5). In parts of the world where non-Jeryl Lynn strain containing vaccine are administered, higher rates of children experiencing vaccine-induced aseptic meningitis have been reported, though the overall incidence is rare in 1 per 2000 recipients (6).

Application of Jeryl Lynn vaccines may cause a higher rate of febrile seizures. This has been observed when the first vaccine had been

applied at the age of 16 month or later (3). In contrast to the initial dose of vaccine, administration of the second MMRV dose is not associated with a higher number of febrile seizures (3,7). Within six weeks after being inoculated with MMR vaccine there is an increased risk to develop idiopathic thrombocytopenic purpura (ITP). The risk was estimated at 1 in 40,000 MMR vaccine recipients (8,9).

This description of a child with a post-Mumps vaccine parotitis serves to remind adverse events to expect after Mumps-vaccine containing immunizations.

### **Declarations**

### **Ethical consideration**

Ethical approval is not required as patient data has been anonymized.

### **Conflicts of interest**

The author declares the absence of any conflicts of interest.

### **Author contribution**

TA is responsible for the project administration, conception and design of the study, data curation, data analysis, manuscript preparation and revision.

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