

Meningoencephalitis case after oral polio vaccine; undiagnosed agammaglobunemia

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Dear Editor,

X-linked Agammaglobulinemia (Bruton) is a disease that courses with a lack of antibody because of a breakdown in B lymphocyte development caused by the mutation in tyrosine kinase. In these patients who have extremely low or no B cells, infections start in the period when antibodies in the Ig G structure inherited from the mother run out (6-9 months old) (1,2). Infections are predominantly seen with encapsulated microorganisms. Viral infections other than enterovirus causing vaccine associated paralytic poliomyelitis or meningoencephalitis syndrome do not cause problems (3).

Ten-month-old male patient was consulted to immunology polyclinic due to meningoencephalitis at 7-month-old and pulmonary infection at 9-month-old in his anamnesis. In the patient's anamnesis, there was also agammaglobulinemia diagnosis in the uncle. The patient's weight was 8.3 kg (10-25p) and height was 73 cm (25p). His physical examination showed that he did not have head control and had spasticity in feet, especially in the right one; his other system examinations were normal. The patient's immunological examinations were as follows: Ig A <25 mg/dl (12-99 mg/dL) mg/dL, Ig M <5 mg/dL (34-216 mg/dL), Ig G <320 mg/dL (381-1221 mg/dL), Ig E:1.52 U/ml. Flow cytometry results were; CD3: 87.9%, CD4: 50.3%, CD8: 37.6%, CD16: 6.3%, CD19: 0.1%, CD20: 0.2%, CD56: 2.5%. Agammaglobulinemia diagnosis was considered and BTK mutation test was planned. Although the result of the meningoencephalitis the patient had was not shown, it was thought that it could have developed because of oral polio vaccination at the age of 6 months. The patient was started regular IVIG therapy with 3 weeks interval and regular physiotherapy controls were recommended.

Male children are affected in a congenital disease that is inherited X-linked and due to Ig G which is transferred

transplacentally from the mother, infection is not found until the baby is 6 months old. The most frequent clinical complication is bronchiectasis which develops because of frequently recurrent otitis media and recurrent sinopulmonary infections and it is more frequently seen in central and lower lobe of the lung. Chronic conjunctivitis, giardia, malabsorption and persistent enteroviral infection related chronic meningoencephalitis, which are among less frequent complications, are among factors, which determine the prognosis.

Historically, poliomyelitis is an enterovirus and the most important disease caused by poliovirus. The infection can result with various symptoms including mild respiratory diseases (common cold), diseases of the hand, feet and mouth, acute hemorrhagic conjunctivitis, myocarditis, severe neonatal sepsis, aseptic meningitis, meningoencephalitis like disease and acute flaccid paralysis (7). Epileptic seizures with sudden fever, headache and focal neurological findings and meningoencephalitis presenting with impaired consciousness can occur due to different reasons in childhood. While there may be bacterial, viral and parasitary infections in the etiology, there can also be Whipple disease, Behçet's disease, and vasculitis and drug reactions (8,9).

In immunodeficiency, live vaccines, especially polio, are contraindicated. Encephalitis may develop following oral polio vaccine. We thought of immunodeficiency in our patient since he had meningoencephalitis after polio vaccine and because his uncle had Bruton.

As a conclusion, in families that have individuals diagnosed with X-linked Agammaglobulinemia (Bruton), male children should be examined in terms of agammaglobulinemia when they are born. Thus, it will be possible to make early diagnosis and prevent infections and complications that can develop.

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