CASE REPORT

# Cholelithiasis in an Infant with Bilateral Cataract and Congenital CMV Infection

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**Abstract:**

Cytomegalovirus (CMV) is recognized pathogen known for most common intrauterine infection in humans and vertical transmissions. We present a case of congenital CMV infection with bilateral cataract which is complicated by cholelithiasis which was later diagnosed on ultrasound examination of abdomen. This case is of particular interest because cholelithiasis has never been reported with CMV infection in literature. Patient had no history of any immune deficiency, any hemolytic or bowel disease.

**Keywords:** Abdomen, Cytomegalo Virus, Cholelithiasis,

## Introduction:

Intrauterine cytomegalovirus (CMV) infection is the most common infection in the world and has a wide clinical scenario [1]. The fetus has two ways of infection and can be infected by either recurrent infection to mother or by newly acquired maternal infection [2]. The chances of fetal infection and the risk of associated complications are much higher following a primary infection [3]. Infants with congenital CMV infection are mostly asymptomatic at birth however it can be a leading cause for sensorineural hearing loss, mental retardation or neurologic deficits [4]. Visual impairments have been also reported in the infants with clinical history of symptomatic infections along with congenital CMV exposure [5]. CMV is the largest and most complex member of the Herpesviridae family of DNA viruses [6]. Congenital CMV infection is seen in approximately 0.2%-2.5% of all live births and is more prevalent in underdeveloped countries predominantly among the population of lower socioeconomic status of the developed countries [4,7]. Cholelithiasis in infants is seen rarely and generally associated with hemolytic anemia, ileal disease, congenital anomalies of the biliary tree, hyper alimentation and prolonged fasting. With the increased use of abdominal ultrasonography, more cases of cholelithiasis are being identified. Cholelithiasis in infant is considered as a temporary and self-limiting phenomenon [8].

## Case Report:

The patient is a 9 month old male infant born with uneventful birth history and gestational period. The parents are keeping good health but had a history of consanguineous marriage. However no evident history of any genetic disease or abnormality was noted. The infant was alright for about three months of his initial life. After three months, gradually the parents observed the abnormal behaviour especially with the visual stimulus. At the end of 5$^{th}$ month of life the parents observed white spots (Fig.1) in both the eyes. On the pediatric consultation the condition was diagnosed as bilateral cataract which was later confirmed by the ophthalmologist.

The visual examination revealed bilateral

congenital cataract. The Complete Blood Count (CBC) including reticulocyte counts, hemoglobin, serum biochemistry including liver and renal function tests and microscopic examination of the blood smear were normal. On TORCH panel test serum toxoplasma Ig M and IgG levels were within normal limits and found <3 index and <3 IU/ml respectively. The serum rubella IgM and IgG serum levels were within normal limits and found <10 index and <3 IU/ml respectively. Serum CMV IgM and IgG levels were 29 and 85 IU/ml respectively and found higher than normal range which is 22 and 14 IU/ml for the test. Mother was found positive for IgG and IgM HCV by qualitative test. Parents and the infant were found negative for HIV using tri dot test for parents and HIV combo test for the infant. Except for the visual abnormality no other neurological, growth or hearing abnormality was identified.

The patient was planned for phacoemulsion with posterior chamber intra ocular lens implantation. On the pre- anesthetic check up for the surgery of the right eye, the blood routine and biochemical test and chest radiograph (Fig. 2) were normal. Patient was operated on for the right eye and had uneventful recovery.

The infant presented with failure to thrive after one month of the surgical correction of the right eye. The patient was clinically examined and found normal. The CBC and serum biochemistry were found normal. The infant was sent for Ultrasound abdomen to rule out any abdominal pathology.

On ultrasound examination after sedation the gall bladder showed two echogenic calculi each of them measuring about 2 mm with posterior acoustic attenuation (Fig. 3). The wall thickness of the gall bladder, its length and width were normal measuring 2 mm, 10 x 25 mm respectively (Fig. 3 & 4). No probe tenderness noted on the scan. The liver, spleen, pancreas and bilateral kidneys were normal in size and echo texture. No ascites and retroperitoneal or mesenteric lymphadenopathy noted. No evidence of any bowel wall abnormality noted on the scan.

The patient was planned for left eye intraocular lens implantation after clinical improvement however no definitive management was given at the point of time of diagnosis. For cholelithiasis he was planned for ultrasound follow up.

**Fig. 1: Infant Presented with White Spots in Both Eye which Later Diagnosed as Bilateral Cataract**

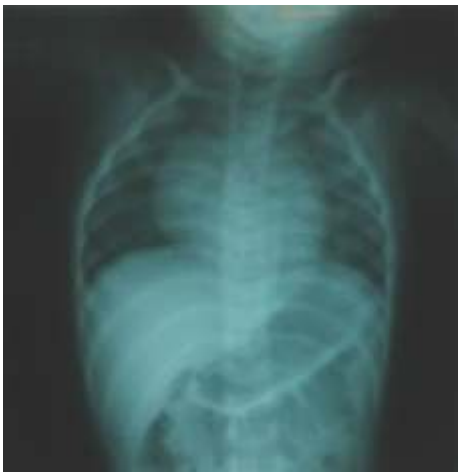

**Fig. 2: Radiograph Chest AP View Appearing Normal**

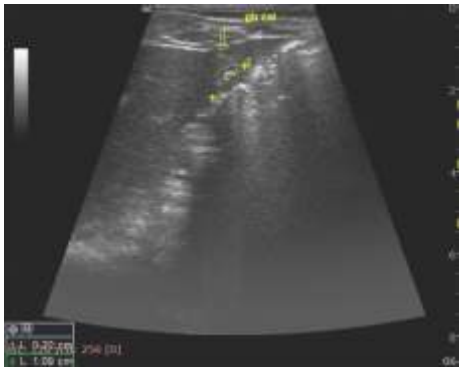

**Fig. 3: Ultrasound Abdomen Coronal View of Liver and Gall Baldder shows Two Echogenic Calculi in the Fundus of Gall Bladder, Each of Them Measuring about 2mm with Posterior Acoustic Attenuation**

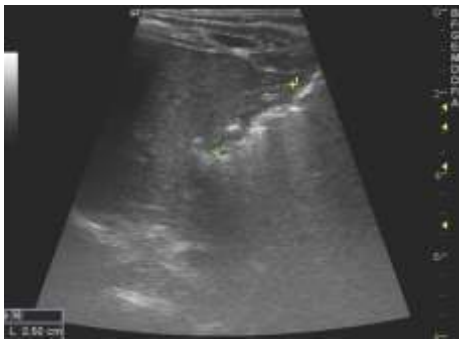

**Fig. 4: Ultrasound Abdomen Coronal View of Liver and Gall Bladder shows Normal Length of the Gall Bladder (25mm), Normal Wall Thickness (2mm) with Calculi in the Lumen**

**Discussion:**

CMV is a double stranded DNA virus well known for transmission by the horizontal and vertical routes. Infection is usually common during childhood and in the perinatal period. The clinical spectrum of CMV is from the most common asymptomatic infection to the hepato-spleenomegaly and rarely infectious mononucleosis like syndrome. Congenital CMV occurs in approximately 1% of all live births in the developed countries like United States and is considered the most common congenital viral infection [6]. In India the prevalence of CMV IgG antibody in females of child bearing age is about 80-90% and the risk of sero-conversions during pregnancy is about 2-2.5% [9].

Due to wide spread use of ultrasound the neonatal cholelithiasis is now less rare. It appears to be a temporary, self-limiting phenomenon, and generally an aggressive approach is not warranted in the asymptomatic infant. Surgical or radiological intervention should be reserved for the symptomatic patients or those with underlying lithogenic disorders [8]. The use of ganciclovir is limited to the CNS infection due to the risk of hematological complications [10].As advised by Benzamin Bar-Oz et al the long term CBC, LFT, ophthalmic, neurological, hearing and GI follow up should be done in CMV positive infants and this case report shows that following these guidelines help in early diagnosis and management and thus prevent the complications.

There is no reported case of infantile cholelithiasis in a known case of CMV infection. This case helps the clinicians encountering with CMV infection to think for abdominal causes if the infant presents with vague signs like failure to thrive. This case also helps us to think a rare association of bilateral cataract with cholelithiasis in asymptomatic patients of age less than 1 year.

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