

Biliary Atresia and Cytomegalovirus Infection

We read the recently published article of the two cases of presumed CMV induced biliary atresia by Mohanty, *et al.* [1] and would like to make some pertinent comments.

The phenomenon of patent biliary tree at birth and subsequent development of biliary atresia later in the neonatal or infantile period has never been documented till date. In that sense, the authors have tried to report this phenomenon for the first time in the world literature. However, there are several caveats in this hypothesis proposed by the authors [1]. Firstly, the diagnosis of patent biliary tree by scintigraphy (case 1) and MRCP (case 2) by authors needs further clarification. It has been shown by us and many others that short of per-operative cholangiogram (the gold standard in the diagnosis of BA) liver biopsy has got the best accuracy in diagnosing biliary atresia [2,3]. The reported accuracy of scintigraphy in diagnosing biliary atresia is 77 to 84.5% which improves with 48 to 72 hours of ursodeoxycholic acid (UDCA) to 91% [4, 5]. Nevertheless, it is nowhere near 100% and the reported negative predictive value of 76% suggests that the scintigraphic documentation of excretion does not rule out biliary atresia [4]. We need to remember before interpreting scintigraphic report that urinary contamination of the abdomen during the procedure, inadequate labelling of radioisotope tracer or avid renal uptake may mimic an excretory HIDA scan. Secondly, documentation of patent biliary tree by MRCP in an infant is also fallacious. MRCP in an infant has technical difficulties. Spatial resolution is poor in small infants, possible movement artefacts and most importantly absent bile flow in a non-dilated biliary system makes interpretation difficult. Diagnostic accuracy of MRCP is 71-82% with reports of both false positive and false negative results [4]. That is why, despite being non-invasive and available in major hospitals across the globe, it has not become a popular investigation for BA. Interestingly, within 15 days of documenting patent biliary tree by MRCP, liver biopsy showed biliary atresia in the second case. That amply supports our view that the diagnosis of BA was missed in both the cases in the first instance as liver biopsy or per-operative cholangiograms were not used in the first go.

The question of CMV causing or triggering the development of BA was earlier widely debated but most researchers now feel that there is no association of the same [5]. It is merely a confounding factor as up to 24% of

BA patients demonstrate serum IgM CMV positivity. It is mandatory to demonstrate congenital CMV infection of the liver by inclusion bodies or DNA extraction by hybridisation techniques from bile ducts, not shown in either of the two cases. Acquired CMV infection itself is rare (1.1-2.4%) in a neonate for the first 90 days of life and for this subset to develop BA is next to impossible [5]. It is well known that rising titres of IgG CMV have a poor prognostic value, as demonstrated in case 2. Had this been a true CMV infection leading to BA, there should have been some response to ganciclovir therapy, which was not there in either of the two reported cases. There is no recommendation to treat neonatal hepatitis with CMV (as presumed by the authors) with ganciclovir. Such a message would be inappropriate.

We feel that both the cases were BA from the very beginning, the confounding CMV reports and its treatment delayed the portoenterostomy. Case 1 had a poor prognosis due to delayed presentation with decompensated liver disease (ascites and coagulopathy) and the portoenterostomy was further delayed by 6 weeks due to ganciclovir trial for CMV. In Case 2, there was a long gap of 3 months between presentation and surgery due to the confusion of CMV and BA.

In a previous study Tarr, *et al.* [5] have doubted the significance of CMV serology in biliary atresia cases. They voiced their apprehensions of increasingly delayed referral for surgery if unnecessary treatment for the above was pursued. Both these cases have shown that mere presence of CMV antibody should not deter the search for BA.

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