

Pleural Effusion Associated With Viral Hepatitis

Şinasi ÖZSOYLU
Nurten KOÇAK
Figen GÜRAKAN
Hülya CANER

From Hacettepe University, Faculty of Medicine,
Department of Pediatrics, Hepatology Section, Ankara/TURKEY

Geliş tarihi: 26 Eylül 1985

ÖZET

Birisi büyük olasılıkla B hepatiti diğeri ise A hepatiti geçirmekte olan dört ve beş yaşlarındaki iki çocuk, akut hepatit geçirmekte iken, gelişen plevrat epansman dolayısıyla Hacettepe Çocuk Hastahancsine gönderilmişti. Her iki çocukta da hipoalbuminemi tesbit edildi. Daha önce hastanemizde anikterik hepatitli bir çocukla da plevral epansman tesbit edildiğinde hipoalbuminemi bulunmuştu. Gözlemlerimize dayanarak, hepatitli hastalarda plevral epansman geliştiğinde hipoalbuminin dikkate alınmasını önermekteyiz.

Anahtar Kelimeler: Hepatit A, Hepatit B, Plevral Sıvı (Epansman), hipoalbuminemi

T Kİ Tıp Bil Araştırma Dür C.3, S.3, 2S9-261, 1985

Pleural effusion associated with viral hepatitis was first reported in a 26-year old man in 1971 (1). Since then, this combination has been documented on several occasions, all in adults (2, 4). Although acut pericarditis, another serious membrane involvement related to probable hepatitis B infection has been reported recently in a 7 1/2-year old boy (5). To the best of our knowledge pleural effusion associated with viral hepatitis has not been reported in children. We are therefore reporting two recently observed children with HB_s Ag (+) and negative acute icteric hepatitis in whom pleural effusion cleared quickly.

Case 1. A five-year-old boy was referred to our department on July 30, 1984 from another hospital because of dark urine, abdominal enlargement, right pleural effusion (Fig. 1) and jaundice of 5 days' duration, with the diagnosis of lymphoma. Abnormal liver function tests with hipoalbuminemia and bilirubinuria had already been documented (Table).

SUMMARY

Two children with acute hepatitis (aged four and five years respectively) were referred to Hacettepe Children's Hospital Both patients had pleural effusion. One of these patients had in all probability hepatitis A and the second had hepatitis B. Both revealed hipoalbuminemia. Pleural effusion improved and cleared in few days. A third patient with unicteric hepatitis, pleural effusion and hipoalbuminemia was detected while reviewing the old records of the hepatology clinic.

We suggest that in patients of hepatitis pleural effusion should carefully be searched for.

Key Words; Hepatiti* A, Hepatiti B, Pleural effusion, Hipoalbuminemia

T J Research Med Sel V.3. N.3, 259-261,1985

On physical examination, the patient appeared well-developed, slightly icteric and dyspneic at rest. He was afebrile and showed mild pectus excavatous. Marked dullness with decreased breath sounds over the lower half of the right posterior chest were detected. Although the heart was found slightly enlarged, no friction rub or changes in heart sounds were present. The abdomen was slightly enlarged and the tender liver edge, which was slightly firm in consistency, was palpable 5 and 9 cm below the right costal margin on the mid-clavicular and xyphoid process respectively. Other physical examinations including spleen, lymph nodes and neurologic findings did not disclose any abnormalities and no ascites was found.

Laboratory findings indicated mild anemia (Hb:11.1 g/dl, Hct: 34%) for his age with normal leukocyte count (7200//il) and differential (60% polymorphonuclear, 34% lymphocytes and 6%

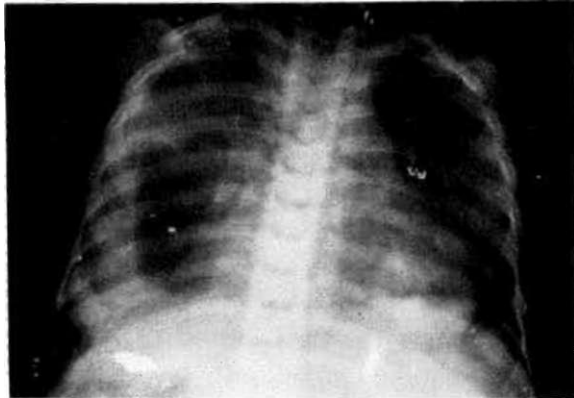


Figure 1. Heart enlargement and pleural effusion on right chest are seen (Case 1).

monocytes). Urinalysis, PPD and heterophyl antibody tests were negative and HEL Ag could not be seen on several examinations. ^{99m}Tc Sulphur colloid scanning showed spleen and enlarged liver, and chest X-ray revealed right pleural effusion. By thoracentesis a yellow fluid was obtained which contained lymphocytes and mesothelial cells. The chest X-ray became normal in 4 days and with the improvement of his clinical condition the laboratory tests became normal including hypoalbuminemia (Table) and anemia (Hb:12 g/dl; Hct: 36%). BUN, creatinine and serum electrolytes remained normal. The liver size decreased gradually within a month and became just palpable at the costal margin.

Case 2. A four-year-old well-developed boy was referred to this hospital because of abdominal pain, jaundice and right pleural effusion of one week's duration.

On physical examination, with the exception of enlarged and tender liver (5 cm below right costal margin and at xyphoid process and palpable soft spleen (2 cm left costal margin). Other findings including chest and neurologic examinations were within normal limits, and ascites was not present. Chest X-ray did not indicate pleural effusion when he was seen in this hospital.

His laboratory findings in the local hospital and here were compatible with hepatitis, and pleural effusion was seen on chest X-ray. Since HB_s Ag was positive, a diagnosis of B hepatitis was made (Table). With bed rest and levamisole administration (6), his physical and laboratory findings improved completely in two weeks.

DISCUSSION

The most common causes of pleural effusion in children in Turkey are pneumonia and tuberculosis, but nephrotic syndrome, heart failure, lymphoma and rheumatoid arthritis, are also not infrequent causes. Chest and abdominal trauma may also be responsible for this pathology. Pleural effusion related to viral hepatitis seems to be rare (2), especially in children. Previously, we obtained routine chest X-rays and reviewed the charts of 103 and 556 children with icteric hepatitis respectively for this association but did not find any. Right pleural effusion was related to unicteric hepatitis in one additional 9-year-old boy who was observed during the last 10 years in this institution. He also had marked hypoalbuminemia (SGOT:510 U; SPGT: 220 U, bilirubin: 0.8 mg/dl, total protein: 4.2 g/dl with albumin 2 g/dl). His HB_s Ag was found negative and the chest findings and general condition improved within a week with bed rest. Therefore, nonicteric hepatitis A was considered for this case.

TABLE
Relevant Laboratory Findings

	FIRST PATIENT			SECOND PATIENT			
	FIVE	NINE	TWENTY ONE	FOUR	SEVEN	TWELVE	TWENTY
Days of Illness							
SGOT (< 40 u)	370	110	22	160	122	31	
SPGT (< 40 u)	490	225	19	220	255	16	
Total Bilirubin (mg/dl)	2.9	1.3	0.8	3.5	1.0	0.8	
Conjugated (mg/dl)	2.5	0.8	0.5	2.0	0.5	0.4	
Alkaline Phosphatase (B.U.)	19.7	31.6	13.8	ND*	13.4	6.4	
Total Protein (g/dl)	5.2	7.6	8.2	5.9	7.6	8.4	
Albumin (g/dl)	2.8	4.3	5.2	3.0	4	4,8	
Prothrombin Time (< 12")	-	14	11	ND	16	11	
Bilirubinuria	34-	(-)	H	ND	ND	ND	
HBs Ag	(-)	(-)	⊖	ND	(-)	(-)	(-)
Anti HBs	(-)	ND	ND	ND	(-)	(-)	(-)

*Not determined

It had been reported that pleural effusion may occur with hepatitis A and B. HB_s Ag was present in one of the two cases in this study. Although HAVAB could not be determined, the first case and the icteric patient were accepted as hepatitis A since both improved within a short period of time. Levamisole was used in our second case because of the presence of HB_s Ag which became negative, and anti HB stayed negative during the follow-up period (Table).

Pericarditis (5) and myocarditis (7) due to viral hepatitis could be considered as causes of pleural

effusion in our first case because of the enlarged heart seen on X-ray. But, no other finding of heart failure was present and pleural effusion disappeared without treatment. Therefore we would like to explain it as a finding associated with viral hepatitis. Hypoalbuminemia was found in both patients as was observed in our previous case with icteric hepatitis in the early period of the disease which improved within days. Hypoalbuminemia may be considered in the pathogenesis of pleural effusion of these cases and should be looked for in other cases presenting with this association.

REFERENCES

1. Gross PA, DN Gerding: Pleural effusion associated with viral hepatitis. *Gastroenterology*, 1971, 60:898-902.
2. Katsilabros L, G Triandafillou, P Kontoyiannis, N Katsilabros: Pleural effusion and hepatitis. *Gastroenterology*, 1972; 63 : 718-8.
3. Oweh RL, H Shapiro: Pleural effusion rash and anergy in icteric hepatitis. *New Engl. J. Med.* 1974; 291:963-3.
4. Flacks LM, D Lees: A case of hepatitis B with pleural effusion. *Aust. N.Z.J. Med.* 1977; 7 : 636-7.
5. A. ÖZSOYLU, B. M. T. K. ÖZSOYLU, J. H. T. ÖZSOYLU, A. C. ÖZSOYLU, P. ÖZSOYLU: Pleural effusion associated with hepatitis B infection. *Pediatr.* 1978; 61 : 716-6.
6. ÖZSOYLU, B. C. K. ÖZSOYLU, N. K. ÖZSOYLU: Levamisole in acute hepatitis. *Clin. Pediatr.* 1981; 20 :497-500.
7. ÖZSOYLU, B. C. K. ÖZSOYLU, N. K. ÖZSOYLU: Myocarditis in viral (epidemic) hepatitis. *Am. J. Med. Scien.* 1956; 231:168-176.