Long-Term Effect of Intravenous Reinfusion of Unmodified Autogenous Peritoneal Fluid Combined with Hemodialysis in a Patient with Dialysis-Related Ascites

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Dear Sir,

Concerning the treatment of dialysis-related ascites, procedures involving intensive ultrafiltration, intravenous administration of albumin, renal transplantation, salt and water restriction, binephrectomy, intravenous rein-fusion of concentrated peritoneal fluid, intra-peritoneal administration of nonabsorbable steroid, peritoneovenous shunt and peritoneal dialysis have so far been reported [1-7]. We attempted intravenous reinfusion of unmodified peritoneal fluid combined with hemodialysis. This method led to successful treatment of dialysis-related ascites with no side effects such as febrile reaction, bleeding or hemodynamic effects.

A 54-year-old man was initiated on continuous ambulatory peritoneal dialysis in June 1986, was changed to hemodialysis despite no experience of peritonitis because of severe lumbago in April 1989, and was transferred to our hospital for maintenance hemodialysis in May 1989. Although his abdomen was normal and pretibial edema was not recognized on admission, ascites and pretibial edema appeared in June 1989. Since we inferred that the patient was in a condition of overhydration, his body weight was reduced from 70.0 to 67.0 kg following periodic hemodialysis with ultrafiltration. However, the amount of ascites remained unchanged despite disappearance of the pretibial edema. Since the patient refused treatment of his ascites by reinfusion of concentrated peritoneal fluid due to the occurrence of chill and pyrexia, or by surgical treatment, repeated paracentesis to remove excess fluid was carried out on the nonhemodialysis day so as to

avoid bleeding from the portion of paracentesis due to the influence of the heparin used during hemodialysis. Since the patient expressed the hope to be discharged despite his refractory and massive ascites, we attempted intravenous reinfusion of unmodified autogenous peritoneal fluid during hemodialysis (fig. 1) from October 1989. The ascites which flowed under the negative pressure imparted by the pump, were led into the dialyzer with the blood and returned via the vein. When drops of ascites in the tube of the infusion set stopped, intravenous reinfusion of ascites was stopped. The intravenous cannula punctured into the peritoneal cavity was immediately removed and only hemodialysis was performed as arranged previously. Since this method was carried out successfully 5 times in October without any side effects, the patient was

discharged in November 1989. This method was also performed twice in November, 3 times in December 1989, 3 times in January, twice in February, once in March, not at all in April, and twice in May, 1990. Computerized tomography demonstrated massive ascites in June 1989, a small amount of ascites in August 1990, and no ascites in September 1991 (fig. 2). Since the last paracentesis was performed in June 1990, ascites did become evident on computerized tomography in August 1990 but were thought to have disappeared naturally. Nicholls et al. [8] reported that regular reinfusion of ascites during hemodialysis in a patient with amyloidosis was effective for the management of ascites. However, the long-term effect of such reinfusion on recurrent

Blood

~7% [Dialyzer

J

Pump

Fig. 1. Method of intravenous reinfusion of unmodified autogenous peritoneal fluid combined with hemodialysis.

formation of ascites remained obscure. In the present case, the refractory dialysis-related ascites disappeared after approximately 2 years as a result of performing periodic reinfusion. It seems reasonable to infer, therefore, that long-term performance of reinfusion of dialysis-related ascites broke the vicious cycle of ascite formation and produced remission of the ascite formation, suggesting that dialysis-related ascites are not always permanent. We should in principle avoid performing surgical procedures for the treatment of dialysis-related ascites at the early stage.

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0028-2766/93/

0653-0474\$2.75/0

Fig. 2. Changes of ascites as observed by computerized tomography: a June 1989: massive ascites. b August 1990: small amount of ascites. c September 1991: no ascites.

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