

Trichloroethylene

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Abstract

Exfoliative Dermatitis and Toxic Hepatitis Associated with Occupational Exposure to Trichloroethylene

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A 28-year-old male began working as a degreaser. The solvent used in the degreasing operation was trichloroethylene. Over the next month the man experienced fever, chills, and an erythematous skin rash and itching. At that time he had a marked elevation in his liver enzyme, with cholestasis. Over the next few days the rash persisted then peeled. There was an elevation of Ig E, and a positive patch test reaction to trichloroethylene. His dermatitis and hepatitis were considered to be mediated by a hypersensitivity mechanism.

Key Words : Trichloroethylene, Hepatitis, Exfoliative dermatitis.

,
(Wexler, 1998).

Trichloroethylene 가

Trichloroethylene (Chlorinated hydrocarbon)

, 가 , ,
(Wexler,

1998). (Ford, 가 4 14 20
 1995) 가
 Trichloroethylene : 가
 1974 Bauer
 : 2
 (Nomiyama, 1979; Phoon, 1984).
 trichloroethylene 1999 3 17 가
 trichloroethylene
 :
 : 37.7
 : O O, , 28
 :
 : 1999 3 17 가 (Fig. 1).
 trichloroethylene :
 , 19,400 /mm³(, 74.4%;
 가 가 . 4 12 17.1%; , 0.8%); , 14.4 g/dl
 AST, 850 U/L; ALT, 831



Fig. 1. Initial erythematous maculopapular rash.

U/L; r-GTP, 149 U/L; ALP, 177 U/L; LDH, mg/dℓ; , 3 mg/dℓ . Ig E 1,414
 1377 U/L; , 5.1 mg/dℓ; IU/ℓ 가
 , 3.9 mg/dℓ , 4.8 A , B , C
 g/dℓ; , 2.7 g/dℓ .
 PT, 15.7 (1.45 INR); aPTT, 31.4 :
 , 50 mg/dℓ; , 100

가
 :
 , , ,
 ,
 :
 ,
 38~38.5

prednisolone 60 mg

4 . 6
 가 가 ,

Figure 2

10

가

(Material Safety Data Sheet, MSDS)

6

13.1 mg/dℓ

AST ALT

(Fig. 3).

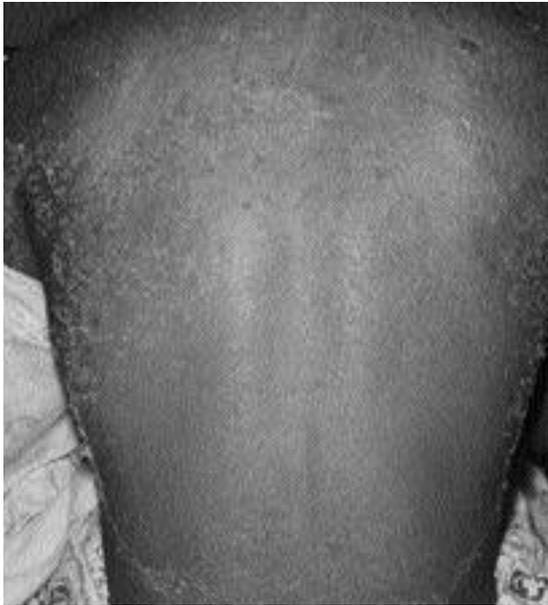


Fig. 2. Desquamation of skin.

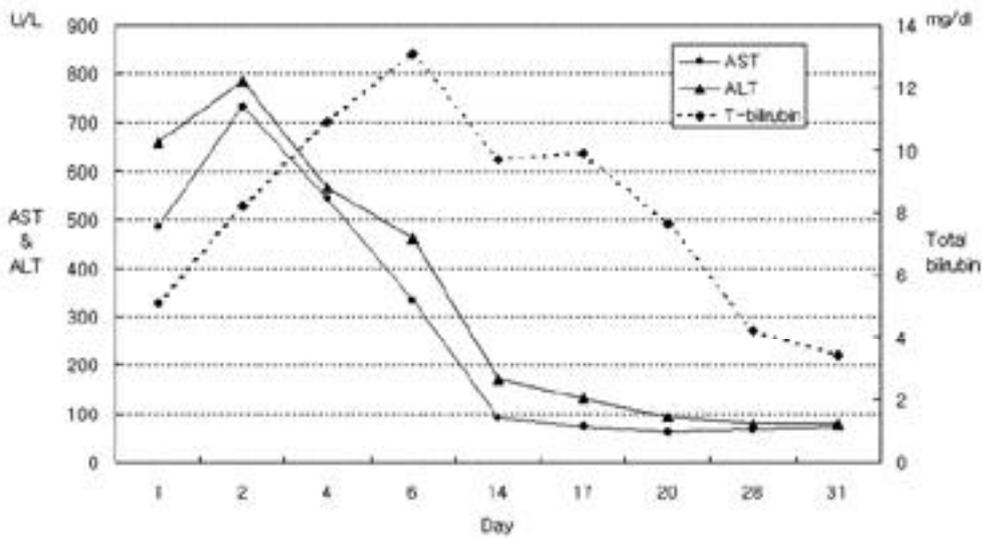


Fig. 3. The changing pattern of the AST, ALT and total bilirubin level during the admission.

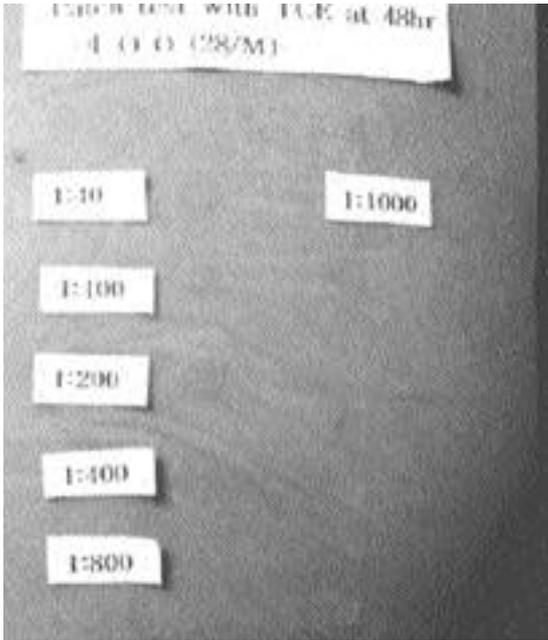


Fig. 4. Result of patch test by trichloroethylene.

12
 가 14% 가
 3 가
 4
 trichloroeth
 ylene
 (Fig. 4,
 Table 1).
 2
 가:
 2 가

Table 1. Results of patch testing in the patient

Substances		After 48 hr
Trichloroethylene	2.5 % with olive oil	+
Trichloroethylene	1 % with olive oil	+
Trichloroethylene	0.5 % with olive oil	+
Trichloroethylene	0.25 % with olive oil	+
Trichloroethylene	0.125 % with olive oil	-
Trichloroethylene	0.1 % with olive oil	-



Fig. 5. Degreasing processing with trichloroethylene.

(Material Safety Data Sheet, MSDS)

(Wexler, 1998).

Buer Rabens(1974) Los Angeles

3

가

trichloroethylene

. Phoon (1984) Singapore

Steven-Johnson

5

. Tri-

가

chloroethylene 2~5

(Fig. 5).

. Nakayama (1988)

trichloroethylene

trichloroethylene

2

가

trichloroethylene

trichloroethylene trichloroethanol

가

. Bond(1996)

trichloroethylene

trichloroethylene

가

가가

(1985)

trichloroethylene TWA 157.92 ppm

30

5%

50 ppm

trichloroethylene

(1999)

Trichloroethylene

trichloroethylene

trichloroethanol

trichloroethylene

trichloroethylene

trichloroethylene

cytochrome P450

가

(Trichloroacetic acid)

가

(Trichloroethanol)

trichloroethylene

가

Nakayama

(Clayton , 1994).

(1988)

(1999)

Naka-

yama (1988) 4

10% 25%

100 ppm

trichloroethylene

5%, 0.05%

0.005% trichloroethanol

trichloroethanol

. Jeanne Ginger(1999)

trichloroethylene 가

Griffin (2000) 2000. 9. 28.

trichloroethylene CD4(+) T 168 .

cell 가 , 1999 .

trichloroethylene Trichloroethylene 1 .

가 157.92 ppm 1999;5(1):59-64.

50 ppm . Trichloroethylene

가 1 . 1985;23(6):785-9.

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trichloroethylene Ig E가

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