

*Clostridium glycolicum*

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**A Report of Pseudomembranous Colitis caused by Clostridium glycolicum**

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The major cause of pseudomembranous colitis is known to be *Clostridium difficile* (*C. difficile*). There are few reports that *Clostridium* species other than *C. difficile* has caused pseudomembranous colitis. We report a case of pseudomembranous colitis caused by *clostridium glycolicum*(*C. glycolicum*).

A 47-year-old woman who had operational history for rectal cancer 3 months ago, was readmitted with diarrhea of 3 days duration. Seven weeks before admission, she had received ornidazole and ceftriaxone due to diarrhea and abdominal pain, and her symptoms were improved. She had received additional radiation therapy for rectal cancer during six weeks before the recent onset of diarrhea. On admission, she complained of watery diarrhea ten times a day and abdominal pain. She had tenderness on both lower abdomen. Pseudomembrane was observed by colonoscopic and histologic examination. VIDAS *C. difficile* toxin A II assay was positive and *C. glycolicum* was isolated in the stool. She recovered after receiving oral metronidazole treatment.

Key word : Pseudo membranous colitis, *Clostridium glycolicum*

*difficile*)

[1,2] 가

*C. difficile*

( A)

( B)

(pseudomembranous colitis)

*C. difficile*

[1].

*Clostridium baratii*(*C. baratii*)가

[3], 1982

species가

*Clostridium difficile*(*C.**Clostridium*

[4].

*Clostridium glycolicum*(*C. glycolicum*)

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(471-020)

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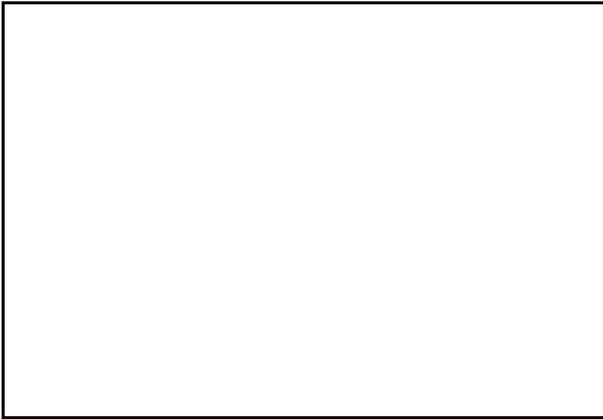


Fig. 1. Sigmoidoscopic finding showing whitish plaques, decreased vasculature, and granularity at the mucosa.

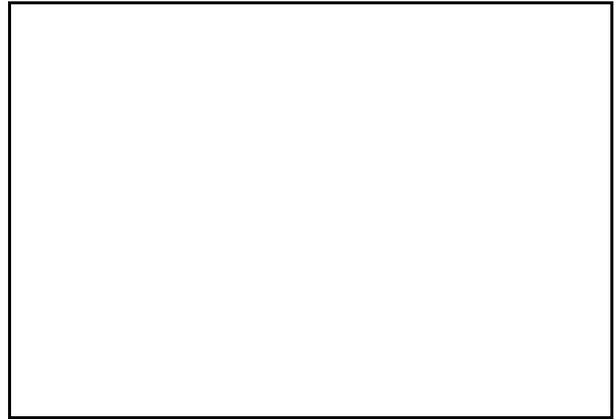


Fig. 2. Phenylethyl alcohol agar plate showing 1-4 mm, irregular, grayish colonies of isolate after anaerobic incubation for 2 days.



Fig. 3. Cells in Gram stain are Gram-positive, straight to slightly curved rods, and occur singly or in pairs. Spores are oval and usually subterminal, occasionally terminal, often occurring as free spores.

: 10.8 g/dL,  
 33%, 218,000/mm<sup>3</sup>, 7,200/mm<sup>3</sup>  
 ( 86%, 9%, 4%, 1%)  
 Na 142 mEq/L, K 3.2 mEq/L, Cl  
 107 mEq/L, CO<sub>2</sub> 31 mEq/L  
*Salmonella Shigella*

(Fig. 1).

*C. difficile* Toxin A : *C. difficile*  
 A  
 . VIDAS *C. difficile* Toxin A II(bioMerieux Vitek, Hazelwood, USA) ( CDA 2) *C. difficile* A  
 , goat antitoxin A blocking

1-4 mm  
(Fig. 2).

: OO. .47 .  
 : 3  
 : 3

2

(ornidazole ceftriaxone)  
 6  
 3 10  
 가 :  
 : 38 , 90 / 가

(Fig. 3).  
 kit rapid ID 32A(bioMerieux Vitek, Hazelwood, USA) phosphatase alkaline 99.5% *C. gly- colicum*  
 : metronidazole

[5] 1950 vancomycin [6]. *Clostridium perfringens* [5,7,8]. 1978 , blocking . CDA 2 VIDAS *C. difficile* toxin A(bioMerieux Vitek, Hazelwood, MO)( CDA) *C. difficile* A enzyme-linked fluorescent immunoassay . Butler[20] 90.7-94.6%, 98.6-99.5% , De Gerolami [21] 85% 99% . CDAD definite, probable, possible, unlikely 가 [16]. 가 10 3 , 8 가 metronidazole definite CDAD . CDA 2 PEA *C. difficile* *C. glycolicum* . 가 A 가 가 . *C. glycolicum* rapid ID 32A(bioMerieux Vitek, Hazelwood, USA) kit phosphatase alkaline 97% *C. difficile* . *C. glycolicum* *C. difficile* . *C. difficile* 2-6 , *C. glycolicum* [22]. rapid ID 32A (bioMerieux Vitek, Hazelwood, USA) kit phosphatase alkaline 99.5% *C. glycolicum* , 가 *difficile* B [14,17,18]. 가 48-96 1982 Chiu [4] *C. difficile* *Clostridium*

1893 Finney , 가 [16]. *C. difficile* , 가 가 *C. difficile* [16,19]. CDA 2 A , blocking . CDA 2 VIDAS *C. difficile* toxin A(bioMerieux Vitek, Hazelwood, MO)( CDA) *C. difficile* A enzyme-linked fluorescent immunoassay . Butler[20] 90.7-94.6%, 98.6-99.5% , De Gerolami [21] 85% 99% . CDAD definite, probable, possible, unlikely 가 [16]. 가 10 3 , 8 가 metronidazole definite CDAD . CDA 2 PEA *C. difficile* *C. glycolicum* . 가 A 가 가 . *C. glycolicum* rapid ID 32A(bioMerieux Vitek, Hazelwood, USA) kit phosphatase alkaline 97% *C. difficile* . *C. glycolicum* *C. difficile* . *C. difficile* 2-6 , *C. glycolicum* [22]. rapid ID 32A (bioMerieux Vitek, Hazelwood, USA) kit phosphatase alkaline 99.5% *C. glycolicum* , 가 *difficile* B [14,17,18]. 가 48-96 1982 Chiu [4] *C. difficile* *Clostridium*

species

[3]

7-10

8

*C. difficile**C. baratii*가*C. glycolicum**C. difficile*

CDAD

*C. glycoli-*  
*cum*

가

*difficile*)

species

*Clostridium glycolicum*(*C. glycolicum*)Ravizzola  
ceftriaxone

17

*C. difficile*

가

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*C. difficile**Clostridium difficile*(*C.**C. difficile**Clostridium**Microbiol* 1985;20:363-72.

9. Bartlett JG, Chang TW, Gurwith M, Gorbach SL, Onderdonk AB. Antibiotic-associated pseudomembranous colitis due to toxin-producing Clostridia. *N Eng J Med* 1978;298:531-4.

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*1994;47:253-7.*

11. Koneman EW, Allen SD, Janda WM, Schreckenberger PC, Winn WC Jr. *Color atlas and textbook of diagnostic microbiology. 5th ed.* Philadelphia: Lippincott- Raven Publisher, 1997:767-74.

12. Mitchell TJ, Ketley JM, Haslani SC, Stephen J, Burdon DW, Candy DCA, et al. Effect of toxin A and B of *Clostridium difficile* on rabbit ileum and colon. *Gut* 1986;27:78-85.

13. Lyerly DM, Lockwood DE, Richardson SH, Wilkins TD. Biological activities of toxins A and B of *Clostridium difficile*. *Infect Immun* 1982;35:1147-50.

14. Lyerly DM, Krivan HC, Wilkins TD. *Clostridium difficile : Its Disease and Toxins.* *Clin Microbiol Rev* 1988;1:1-18.

15. George WL, Sutter VL, Citron D, Finegold SM. Selective and differential medium for isolation of *Clostridium difficile*. *J Clin Microbiol* 1979;9:214-9.

16. VIDAS *Clostridium difficile* Toxin A *1996;16:563-9.*

17. Bartlett JG. *Clostridium difficile* : clinical considerations. *Rev Infect Dis* 1990;12:S243-51.

18. Whittier S, Shapiro DS, Kelly WF, Walden TP, Wait KJ, McMillon LT, et al. Evaluation of four commercially available enzyme immunoassays for laboratory diagnosis of *Clostridium difficile*-associated diseases. *J Clin Microbiol* 1993;31:2861-5.

19. Lyerly DM. *Clostridium difficile* testing. *Clinical Microbiology Newsletter* 1995;17:17-22.

20. Butler RC. Performance of a new VIDAS *C. difficile* Toxin A II assay(CDA2) compared to cytotoxicity and Meridian Premier. American Society for Microbiology. 97th general meeting. Abstracts. 1997:166.

21. De Girolami PC, Longhi L, Carlson J, Werner K, Amato S. Evaluation of VIDAS *C. difficile* Toxin A II Assay. American Society for Microbiology. 97th general meeting. Abstracts. 1997:166.

22. Cato EP, George WL, Finegold SM. Genus *Clostridium* Prazmowski 1880, 23AL. In : Sneath PH, Mair NS, Sharpe ME, Holt JG, ed. *Bergey's manual of systematic bacteriology. 1st ed.* Baltimore : Waverly press, 1986:1141-200.

1. Griffin GE. *Clostridium difficile*. In: Farthing MJG, Keusch GT, ed. *Enteric infection. 1st ed.* London: Chapman and Hall Medical, 1989:327-36.
2. Onderdonk AB, Allen SD. *Clostridium*. In: Murray PR, Baron EJ, Pfaller MA, Tenover FC, Tenover FC, ed. *Manual of clinical microbiology. 6th ed.* Washington DC: ASM Press, 1995:574-86.
3. Ravizzola G, Manca N, Dima F, Signorini C, Garrafa E, Turano A. Isolation of a clostridium exotoxin producer other than *clostridium difficile* from a patient with diarrhea. *J Clin Microbiol* 1998;36:2396.
4. Chiu AO, Abraham AA. Pseudomembranous colitis associated with an unidentified species of clostridium. *AJCP* 1982;78:398-402.
5. Borriello SP. Clostridial disease of the gut[review]. *Clin Infect Dis* 1995;20(Suppl 2):S242-50.
6. Hale HW Jr., Cosgriff JH Jr. Pseudomembranous enterocolitis. *Am J Sur* 1957;94:710-7.
7. Fekety R. Recent advances in management of bacterial diarrhea. *Rev Infect Dis* 1983;5:246-57.
8. Borriello SP, Barclay FE, Welch AR, Stringer MF, Watson GN, Williams RKT, et al. Epidemiology of diarrhoea caused by enterotoxigenic *Clostridium perfringens*. *J Med*