

(DTaP)



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**Milk asphyxia as a result of
hypotonic-hyporesponsive episodes after DTaP and
Polio Co-immunization**

Euy-Nyong Kim

(Supervised by Professor Hyun-Wook Kang)

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ABSTRACT

We analyzed autopsy findings of 5 neonates and infants who suddenly died after DTaP and Polio Co-immunization. Microscopically, there were multifocal small amounts of pinkish amorphous materials within the alveolar spaces with marked proliferation of alveolar macrophages. Immunohistochemical stain using anti-human alpha-lactalbumin shows intense staining to these foreign materials. We concluded that milk aspiration and asphyxia may play an important role in course of death after DTaP and Polio Co-immunization and assumed that hypotonic hyporesponsive episodes as an adverse events of immunization could be a preceding cause of milk aspiration. Education of parents about the risk of milk aspiration after immunization should be included in guideline.

Key word: DTaP and Polio Co-immunization, milk aspiration, adverse events, hypotonic hyporesponsive episodes

ABSTRACT

.....

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1.		
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.	6
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3.	, , (DTaP Vaccine)	
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Figure 1. Amorphous hyaline material is noted in alveolar space.8

Figure 2. Human Alpha-Lactalbumin stain reveals strong positivity to foreign material in alveolar spaces.9



18

가

가

가

가

. 20

가



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(bacterial products or

fraction)

2, 4, 6

1,2,3

15

18

1 가

4-6

14-16

2 가

(OPV)

2, 4,

6

3

4~ 6 () 1 가

가

가

가

가

가

가

가

가

1980

(whole cell

pertussis vaccine)

가



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가

1997

2004

5

(異物)

() 가



1.

1997 5 2004 9 5 ,
 2 가 3 , 5 가 1 , 2 가 1
 가 4 , 가 1 . 1
 7 .

(異物) 가

2.

5



5

(外表)

, , , , , , , , ,

가

, , , (), ,
 (), () 가

, 4 μm (probe on plus) (Fisher
 Scientific, Pittsburgh, PA, U.S.A.) 60°C 24
 3% 5
 (avidin-biotin complex, ABC)
 . 15
 (Rabbit Anti-Human Alpha-Lactalbumin, DAKO produktionsvej, Denmark)
 60
 (avidin-biotin complex Rabbit Kit, ABC kit, Vectastain
 Inc.) 15
 (peroxidase-conjugated streptavidin) 15
 AEC (3-amino-9-ethyl-carbazole)
 5-10 (Mayer's
 hematoxylin) crystal mount



가
(Figure 1).



가,
5

가

가 (死前期)

(自救力) 가 5 가

가

()

Human Alpha-Lactalbumin

(Figure 2).



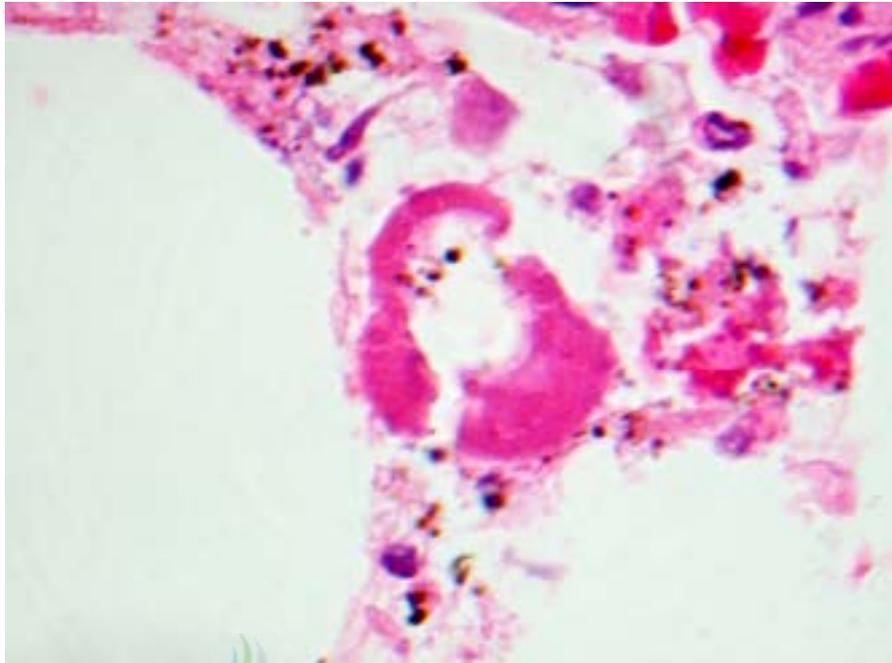


Figure 1. Amorphous hyaline material is noted in alveolar space.

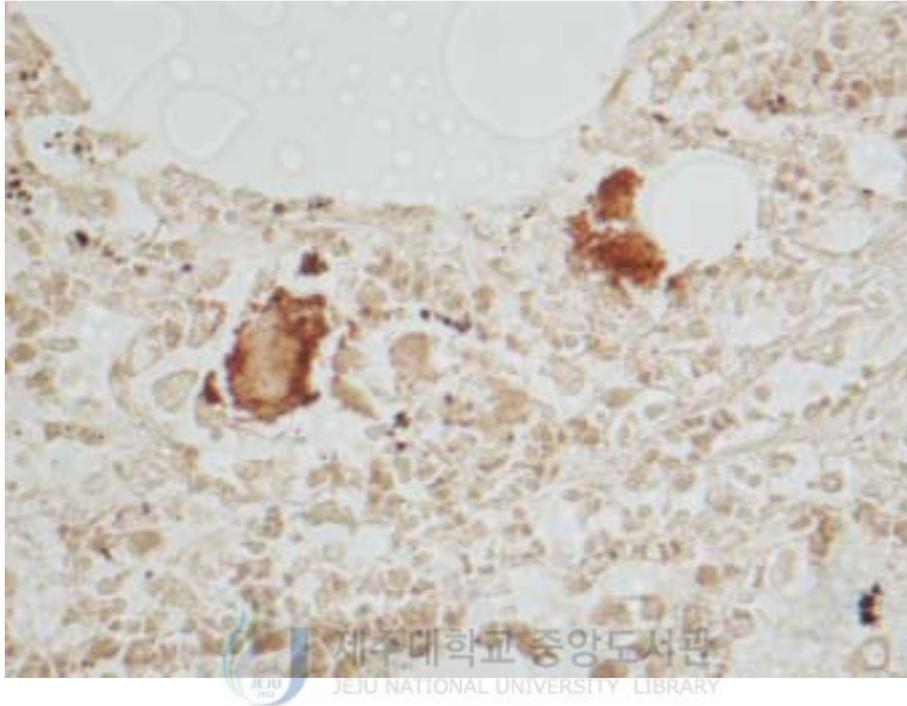


Figure 2. Human Alpha-Lactalbumin stain reveals strong positivity to foreign material in alveolar spaces.

(DTaP) , (whole cell) (DTwP) 가 1984 (PT) (filamentous hemagglutinin, FHA) 1999 WHO 가 DTwP 75 1 Polio () 3 1 1 1 가 5 1 BCG 가 1997 (WHO) 1996 (Centers for Disease Control, CDC) DTwP 3 1 가 2000 가 410 2 가 1998 8 4 1999 2000 3 가



1. , (active immunizing antigens) (suspending fluid; sterile water, saline, egg antigen, tissue culture-derived antigen), (streptomycin, kanamycin, erythromycin, neomycin), (stabilizer; gelatin), (stabilizer; thimerosal)

(adjuvant; aluminum salt)

(), (), (), 가 (),

1) (vaccine reaction) -

2) (vaccine-potentiated reaction) -
가

3) (programme error) -

4) (coincidental) -

5) (unknown etiology).

가

(, aluminum)가

10 %
가 가
10%
가
(hypotonic hyporesponsive episodes),
(persistent inconsolable crying)
(anaphylaxis)
(encephalopathy)
가



(sudden infant death syndrome)
가 가
가

(Howson *et al*, 1992).

2. : .

3

3. : 가 .

4. : 40.5 , 39 .

5. : 48 가 .

가 .

6. : (brachial nerve plexus)

가 2 28 .



7. : , , , , , .

(Hypotonic hyposensitive episode) .

가 .

가 , ,

가 .

가 .

가 .

가

가

0-24 .

1000-33, 000 .

가
가

가

4.



가

가
가

가

가

WHO

24

(hypotonic hyposensitive episode, HHE)가

가

가

가 ,

,

.

가

가



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1999 2004
5
(cough reflex) 가
가
가

Key word:

