

## 단기간 Aldehyde에 Tanning 처리한 교원질 해면의 조직 반응

박문서 · 김영수 · 오재국 · 김용복 · 이동훈

## Tissue Reaction of Aldehyde-Tanned Collagen Sponges

Moon Suh Park, MD, Young Soo Kim, MD, Jae Kook Oh, MD,  
Yong Bok Kim, MD and Dong Hoon Lee, MDDepartment of Otorhinolaryngology-Head and Neck Surgery, College of Medicine, Hallym University,  
Seoul, Korea

## - ABSTRACT -

Treating of the collagen material by chemical preservatives is a procedure to make a homograft material in otologic surgery. Chemical treatment eliminates the antigenicity of allo-or xenograft materials and enhances their physical strength for molding. To evaluate the toxicity of chemical treatment through histological method, bovine collagen sponges treated with 0.5% buffered glutaraldehyde or 4% formaldehyde solution. These sponges were inserted into subcutaneous pockets of the rats and removed after 2 and 5 days. They were stained with hematoxylin-eosin and analyzed by light microscopy. Quantitative morphometry was done. Two days after implantation, the morphology showed cellular reaction around the all rinsed collagen sponge. Inflammatory cells were presented in the surface of the sponge. At five days after implantation, more pronounced cellular reactions were noticed around the rinsed sponge. Collagen sponge without rinsing showed markedly melted architecture with inflammatory cell infiltration. (J Clinical Otolaryngol 1999;10:259-263)

KEY WORDS : Ear surgery · Aldehyde · Homograft.

## 서 론

4)

가

, pH, ,  
a ldehyde  
alcohol Cialit Cialit me -

가

, 1), , 2), 3)

rcuric compound

alcohol 가

가 aldehyde

가 formaldehyde glutar -

aldehyde

가

: 1999 7 15

: 1999 12 3

: , 150 - 250

94 - 200

: (02) 2639 - 5481 · : (02) 2637 - 5480

E - mail : pmsO@channeli.net

가  
(mooled graft)

5)6)

3 optical field

aldehyde  
tanning

연구대상 및 방법

1) 1 × 1 × 1 cm  
(bovine collagen sponge ; Pangen, Fournier Co.)  
0. 5% buffered glutaraldehyde 4% fo-  
rmaldehyde 5  
5 3

2) 150  
200gm Sprague - Dawley 12  
Xylazine hydrochloride(Bayer Co.) Keta-  
mine(Euhan Co.) 100 gm 1.0 ml  
70%  
4 cm 가  
2 2 × 2 cm

3) 2, 5 6  
reactive capsule  
10% formalin 1 paraffin  
5 um He -  
matoxilin & Eosin

quantitative morphometry 200  
가 가

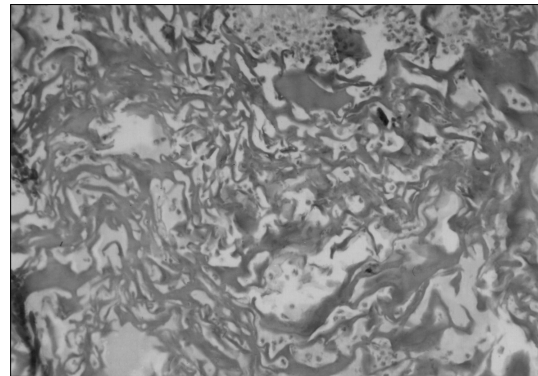


Fig. 1. Collagen sponge tanned with glutaraldehyde at 2 days after subcutaneous implantation (3 times washing group). Cells were noticed on surface of implant ( × 200).

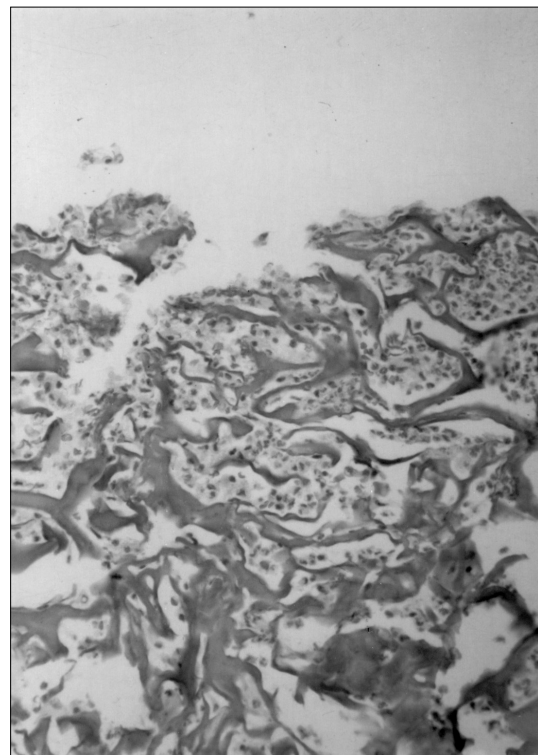
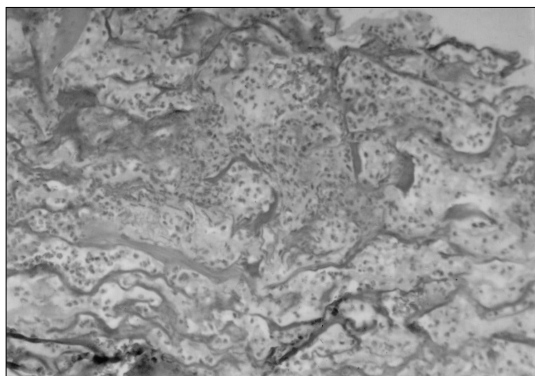
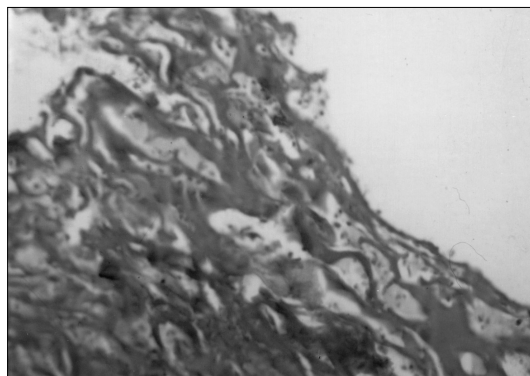


Fig. 2. Collagen sponge tanned with glutaraldehyde at 5 days after subcutaneous implantation (3 times washing group). Cellular infiltration is progressed, but still relatively restricted to the outer layer of the implant ( × 200).

: Aldehyde



**Fig. 3.** Collagen sponge tanned with formaldehyde at 5 days after subcutaneous implantation. Sponge is more in-grown by cells (3 times washing group) ( × 200).



**Fig. 4.** Collagen sponge tanned with formaldehyde at 5 days after subcutaneous implantation (no washing group). Architecture of collagen was melted markedly ( × 200).

결 과

2 3  
glutaraldehyde 가  
10 20%  
(Fig. 1). 3 formaldehyde  
30 40%  
5 3  
glutaraldehyde  
20 30%  
(Fig. 2). 3 formaldehyde  
30 40%  
(Fig. 3).  
architecture가  
(Fig. 4).  
glutaraldehyde, formaldehyde  
5 3  
glutaraldehyde . cell  
count (Table 1).

**Table 1.** Cell counts in the periphery and central zones of subcutaneously implanted sponges (3 times washed group)

Type of cross linking	2 days		5 days	
	Periphery	Center	Periphery	Center
Glutaraldehyde	93 ± 31	18 ± 8	180 ± 64	39 ± 15
Formaldehyde	108 ± 39*	24 ± 8*	182 ± 76	39 ± 18

Data are given as average ± standard deviation.

\*Refers to statistical significance at p < 0.01.

고 안

Tanning  
3  
Tanning , covalent ,  
가  
)  
tanning  
가 chromium tanning catgut

aldehyde . formaldehyde dehyde al -  
 glutaraldehyde가 가  
 Aldehyde 가 .  
 fasciaform myringoplasty formald -  
 ehyde 10 6 가 가  
 가 9)  
 aldehyde 가  
 가  
 10)11)  
 가 glutaraldehyde  
 가  
 dehyde formal -  
 가 가 12)13)  
 가  
 가 8)  
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 결론  
 Aldehyde  
 가 al -  
 dehyde  
 aldehyde가  
 중심 단어 :

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