

:  
 .  
 :  
 31  
 가 14 , 가 16 , 1 ,  
 1-21 ( :2.5 ) . 18  
 , 2 . 14 2-20 ( :6.8 )  
 :  
 28 , 12 , 1  
 가 25 , 1-2 가 4 , 2-3 가 2 . 6  
 (  $\pm$  :1, +1:4, +4:1), 2  $\pm$ ,  
 12 , 2 ,  
 4 .  
 :  
 ,  
 ,  
 가 ,  
 가 ,  
 (full-term)가 14 ,  
 (preterm)가 16 , (post-term) 1 ,  
 가 1-21 ( :2.5 )  
 (1,2),  
 30-60%  
 HDI 3000(ATL, Washington, U.S.A.)  
 10MHz  
 (hyperechogenicity)  
 , Tamm-Horsfall ( T-H )  
 (3). 20 ( :6.8 )  
 18 , 2

1998 1 1998 12 28  
 31 가 , (nephrocalcinosis) 12 가 15 , 가 12 , 1 .  
 가 , 4 , 8  
 Furosemide D (Table 1). 2  
 . 1 가 25 , 1-2 가 4 , 2-3 가  
 2 .  
 14

<sup>1</sup>  
<sup>2</sup>

12, 2, 1, 4, +1, 1  
4, 3, 4+, 2, 2, 3  
가, 가  
(Fig. 1C), 가

Table 1. Hyperechogenicity of Urinary Tract on Initial Sonogram

Location of hyperechogenicity	No. of patients			
	postterm	full-term	preterm	total
medulla	1	6	12	19
medulla+ urinary bladder		6	3	9
urinary bladder		2	1	3

가  
(oxalosis), (urate uropa-



Fig. 1. Transient hyperechogenicity of the right renal medulla and urinary bladder in full-term baby (gestational age; 38 weeks)  
A,B. On initial US scan of the kidney (a) and urinary bladder (b) at the second day of life, echogenic spots are noted in the medullary pyramids (arrowheads) and urinary bladder.  
C. On follow-up US scan of the right kidney obtained 3 days later, renal medullary hyperechogenicity is nearly completely subsided and also in the urinary bladder (not shown here). Diameter of renal pelvis is still in the normal range, but is mildly increased (arrows) in its AP diameter than initial study.

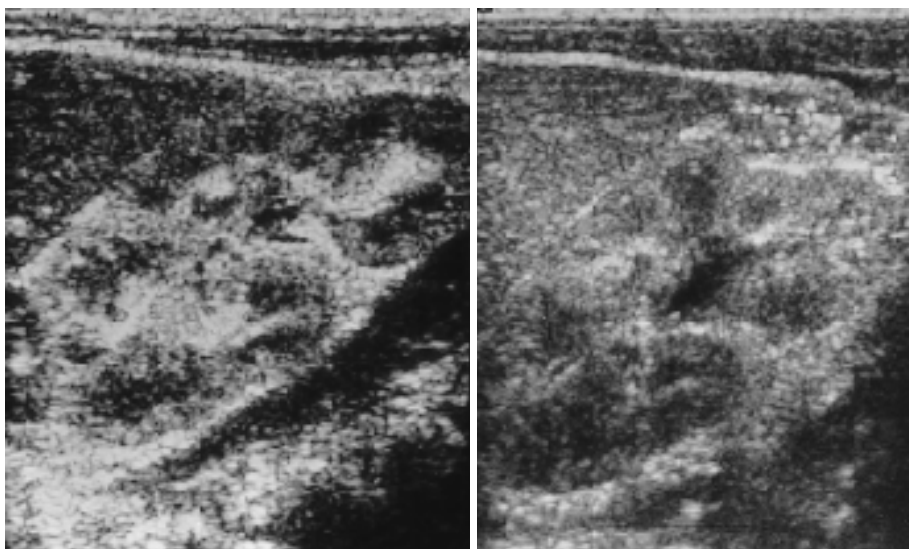


Fig. 2. Hyperechogenicity of the left renal medulla in preterm baby (gestational age; 37 weeks)  
A. On initial US scan on 3rd day of life, echogenic foci are noted in the extensive areas of the medullary pyramids.  
B. On follow-up US scan 5 days later, renal medullary hyperechogenicity is markedly regressed.

thy) , 5 , , cast 가

Furosemide , D (12). 가

(1). 가 90% 가 가 24 14-68mg

(4). 가 +1

(13). , 5

T-H 2 7 10

(3). T-H macroglycoprotein , 6 3

가 (5,6). 가 4 , 6 11

T-H 가 T-H 가

(3), Riebel (7) T-H

가 (oliguria)

(8). 가 “tubular

stasis nephropathy” (9). , 3

가 5mm , 0.5cm 가 (10),

1 58%,

2 33% , 53% 2-3

32% 6-8 (11).

3 1

(papilla)

6 8 (11).

2 , Furose-

mide (7).

cast 10 ,

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## Hyperechogenicity of Renal Medulla and Urinary Bladder in Normal Neonates : Clinical Significance<sup>1</sup>

Young Tong Kim, M.D., Jai Soung Park, M.D., Gun Soo Han, M.D., Il Young Kim, M.D.,  
Hye Kyung Lee, M.D.<sup>2</sup>, Yong Sik Min, M.D.<sup>2</sup>

<sup>1</sup>Department of Diagnostic Radiology, Chunan Hospital, Soonchunhyang University

<sup>2</sup>Department of Pediatric, Chunan Hospital, Soonchunhyang University

**Purpose :** To evaluate the clinical significance of hyperechogenicity of the renal medulla and urinary bladder in normal neonates.

**Materials and Methods :** We investigated 31 clinically normal neonates, including one post-term, 16 pre-term, and 14 full-term babies, in whom hyperechogenicity of the renal medulla or urinary bladder was seen on initial sonograms. All neonates underwent sonography while aged between 1 and 21 (mean: 2.5) days. For 14, follow-up sonography was performed 2-20 (mean : 6.8) days later. Eighteen neonates also underwent urinalysis, and two underwent a bacteriologic examination.

**Results :** Initial sonograms revealed (hyperechogenicity in the renal medulla (n= 28) and urinary bladder (n= 12). Twenty-five neonates were aged less than one week, four were aged 1-2 weeks, and two were aged 2-3 weeks. Urinalysis showed that six neonates were erythrocyte-positive ( $\pm$  :1, + 1:4, + 4:1), two were protein-positive ( $\pm$  :2), and the others were negative. In all cases the results of bacteriologic study were negative. Follow-up sonography revealed that the hyperechogenicity of renal medulla had regressed (n= 12) or decreased (2), and that of the urinary bladder had regressed (n= 4).

**Conclusion :** In clinically normal neonates, hyperechogenicity of the renal medulla and urinary bladder was mostly visualized within the first week of life, and on follow-up sonography was seen to have regressed or decreased.

**Index words :** Neonate, US  
Kidney, US

Address reprint requests to : Young Tong Kim, M.D., Department of Radiology, Soonchunhyang University Hospital,  
#23-20, Bongmyung-Dong, 330-100, Chunan, Korea.  
Tel. 82-417-570-2101 Fax. 82-417-574-6265