

^{99m}Tc DISIDA scan

신생아 담즙 정체증의 영상 진단에
있어서 자기공명담관조영술과
 ^{99m}Tc DISIDA scan의 비교

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2002년 12월 일

연세대학교 대학원

의 학 과

김 진 아

	
	
	
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	. ^{99m} Tc DISIDA scan	3
	4
3.	5
III.	7
1.	7
2.	7
3. 가	8
	15
	19
	20
	23

1.	61	11
2.	58	13

1.	9
2.	^{99m} Tc DISIDA scan	9
3.	9
4.	, ^{99m} Tc DISIDA scan,	10

^{99m}Tc DISIDA scan

가

^{99m}Tc DISIDA (diisopropyl iminodiacetic acid) scan

^{99m}Tc DISIDA scan

(magnetic

resonance cholangiography)

가

가

^{99m}Tc

DISIDA scan

^{99m}Tc

DISIDA scan

22

(, 62 ; , 28-

107)

가

^{99m}Tc DISIDA scan

가

15

7

3

90.0%, 71.4%, 84.1%, 87.0%, 81.3% , ^{99m}Tc DISIDA
scan 48.3%, 46.5%, 47.7%, 65.9%, 29.6%

^{99m}Tc DISIDA scan

가

:

^{99m}Tc DISIDA scan

< >

.

가

^{99m}Tc DISIDA scan

1-3 .

가

가

.

가

가

1-5 .

^{99m}Tc DISIDA

scan

가

60 -

82%

6-10 .

가

(half-Fourier acquisition single-shot fast spin-echo sequence)

가

가 가 6, 11-12 .

가 가

^{99m}Tc DISIDA

scan .

.

1.

1997 11 2001 9
 55 ^{99m}Tc
 DISIDA scan 22
 가 . 10
 12
 62 (, 28-107).

2.

가.

(HDI 3000; Advanced Technology Laboratories, Bothell,
 WA) 5-10 MHz 4-7 MHz 가
 .
 , triangular cord
 가 .

. ^{99m}Tc DISIDA scan

^{99m}Tc DISIDA scan (ADAC Vertex EPIC; ADAC Laboratories, CA) 3-5

(Kg 5 mg)

5 mCi (185 MBq) ^{99m}Tc

DISIDA

60 5 2, 4, 6, 8

24 8 24

가 5 60

가

1.5-T

(Signa Horizon; GE Medical Systems, Milwaukee, WI)

T2

Thin-section

. TR/effective TE, infinite/80–100 msec; slice thickness, 3–4 mm; slice gap, 0-1 mm; field of view, 16-24 cm; matrix 256 x 192; mean acquisition time, 36 sec. thick-slab

. TR/effective TE, infinite/1000–1400 msec; slab thickness, 20-30 mm; field of view, 16-20 cm; matrix 256 x 256;

mean acquisition time, 2 sec.

가 .

^{99m}Tc DISIDA scan 2
 (, 0-4) 2.6 (, 0-14),
 ^{99m}Tc DISIDA scan 2.3 (, 0-13) .

3.

^{99m}Tc DISIDA scan

가 가

가 .

가 ^{99m}Tc DISIDA scan

가 . 1

, ^{99m}Tc DISIDA scan

가

^{99m}Tc DISIDA scan

가

t-

(kappa index)

.

MedCalc 6.11 (MedCalc software, Mariakerke,

Belgium) .

1.

22

15

7

7

(cytomegalovirus)

15

3

2.

15

12

7

6

(1).

^{99m}Tc DISIDA scan

가

15

7

, 7

3

scan (2). ^{99m}Tc DISIDA
 13 가 15
 , 7 5
 (3)(1, 2).

3. 가

가 ,
 , , 80.0% (15
 12), 85.7% (7 6), 81.8% (22 18), 92.3%, 66.7%
 . 90.0% (15 13), 71.4%
 (7 5), 84.1% (22 18), 87.0%, 81.3%, ^{99m}Tc DISIDA scan
 48.3% (15 7), 46.5% (6 3), 47.7% (22 10), 65.9%,
 29.6% (4).

^{99m}Tc DISIDA scan

(P<0.05).

^{99m}Tc DISIDA scan 0.68, 0.62,

0.86, 0.85 .

1.

12 (80.0%)	1 (14.3%)	13
3 (20.0%)	6 (85.7%)	9
15	7	22

2. ^{99m}Tc DISIDA scan

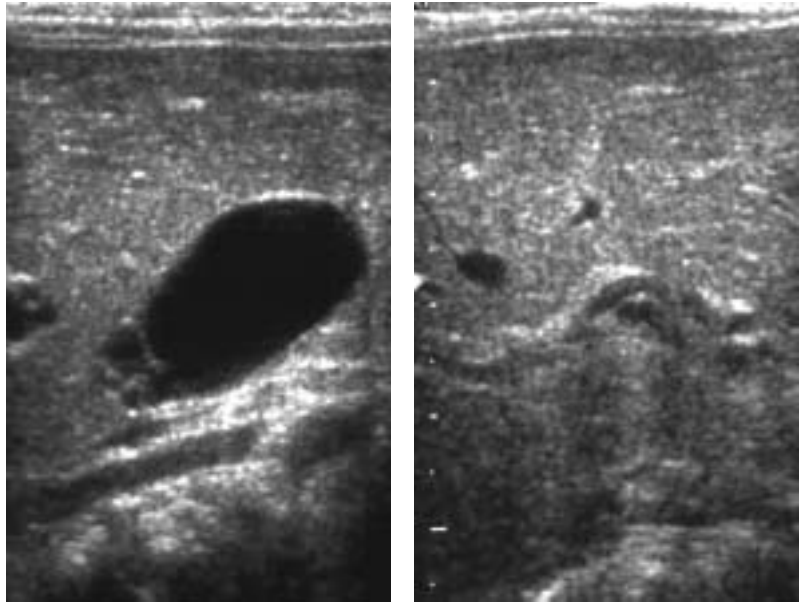
7 (46.7%)	4 (57.1%)	11
8 (53.3%)	3 (42.9%)	11
15	7	22

3.

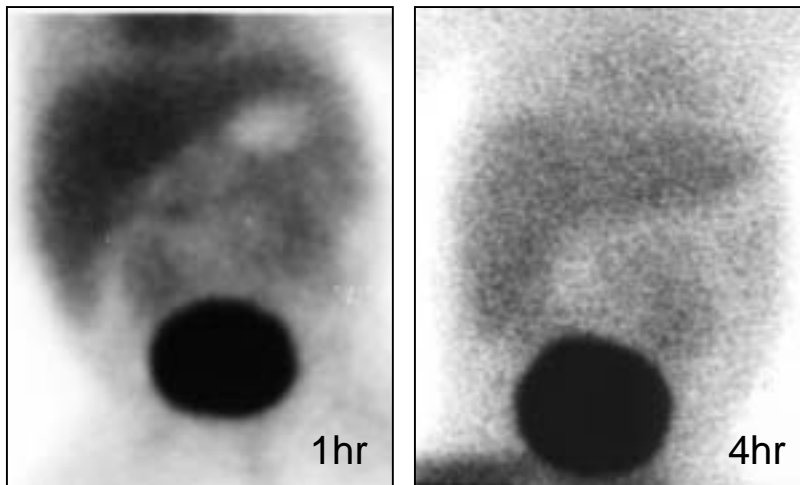
13 (86.7%)	2 (28.6%)	15
2 (13.3%)	5 (71.4%)	7
15	7	22

4. , ^{99m}Tc DISIDA scan,

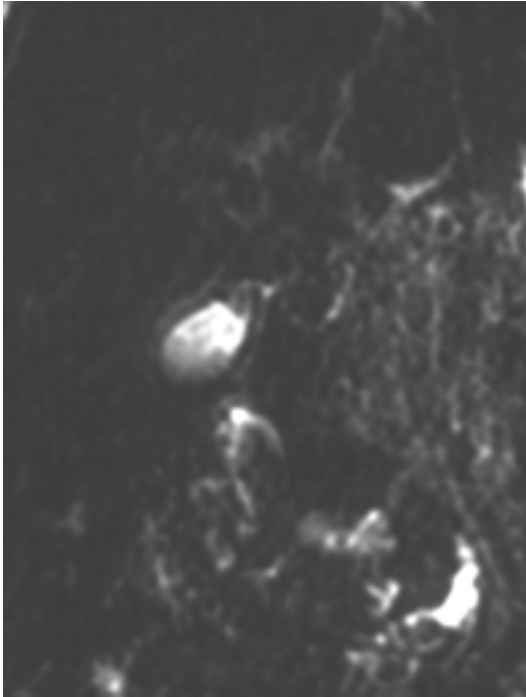
^{99m} Tc DISIDA scan		
80.0 %	48.3 %	90.0 %
85.7 %	46.5 %	71.4 %
81.8 %	47.7 %	84.1 %
92.3 %	65.9 %	87.0 %
66.7 %	29.6 %	81.3 %



(a)



(b)



(c)



(d)

1.

61

(a)

triangular

cord

(b) ^{99m}Tc DISIDA scan 1

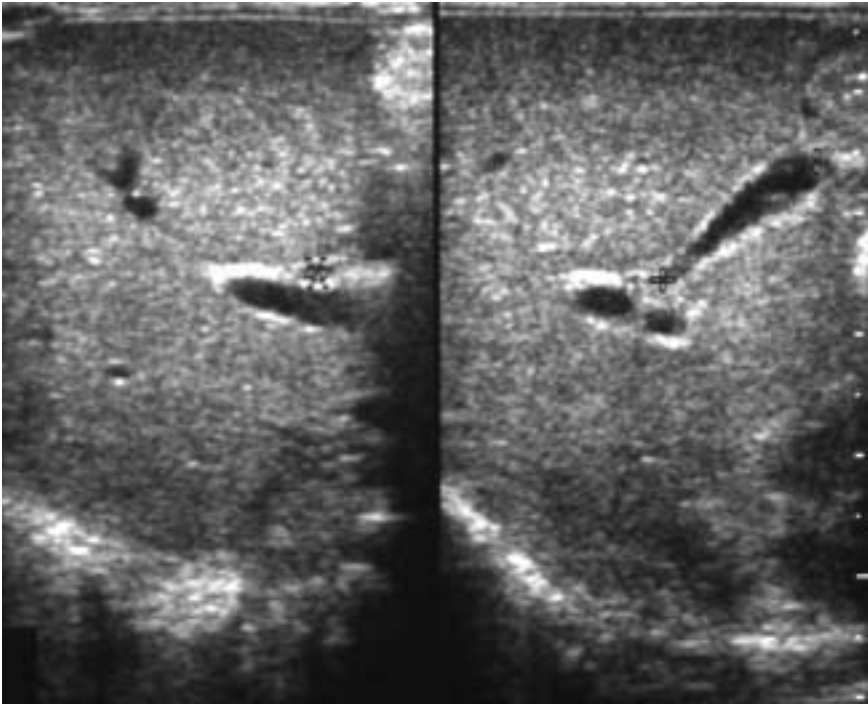
가 가

4

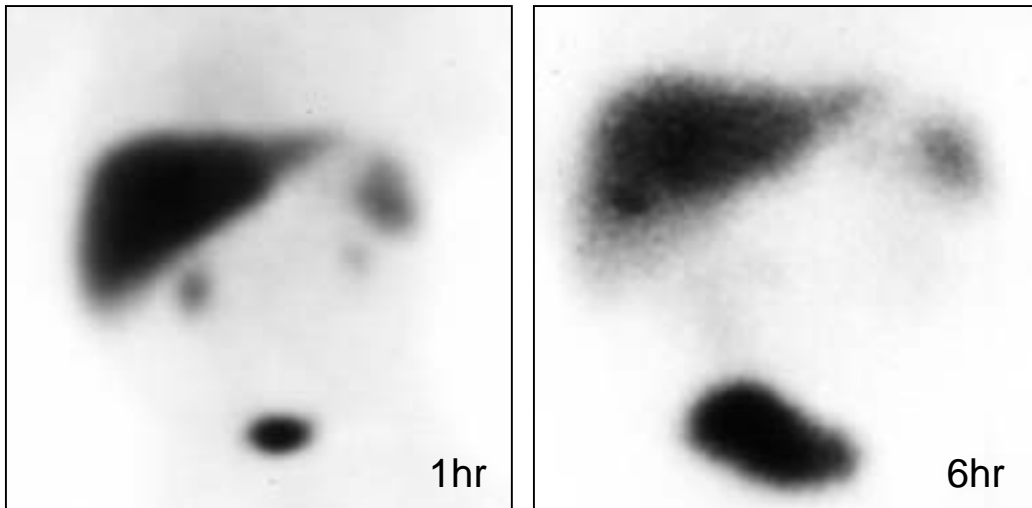
가

(c)

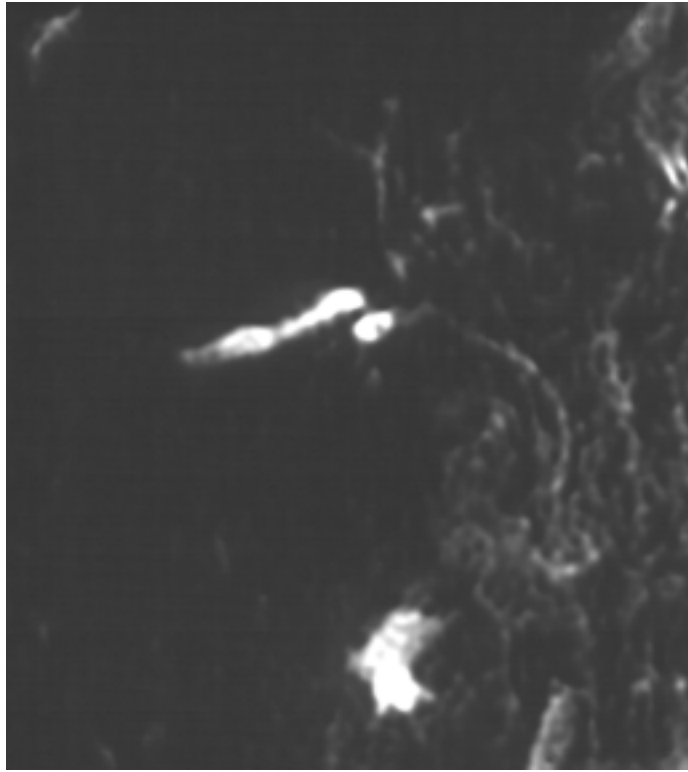
(d)



(a)



(b)



(c)

2.

58

(a)

가

. (b) ^{99m}Tc DISIDA

scan 1

6

가

. (c)

.

가

가

^{99m}Tc DISIDA scan

1-3

,

(fibrous remnant)

“triangular cord”

가

4

가

1-5

,

“triangular cord”

가

^{99m}Tc DISIDA scan

가

가 가 가

2-3 .

, 2,200 g

,

가

가

(interlobular bile

duct paucity)

1-2, 5-6 .

^{99m}Tc DISIDA scan

^{99m}Tc DISIDA scan

가 .

^{99m}Tc DISIDA scan

60%

82%

6-10 .

^{99m}Tc DISIDA scan

가

^{99m}Tc DISIDA scan 48.3% ,
46.5%, 47.7% . ^{99m}Tc DISIDA scan
가

가

^{99m}Tc DISIDA scan

가 7-8, 11-14 .

가 .

가

11 .

7 5 ,

15 13

.

, , 90.0%,

71.4%, 84.1% . 가

.

9.

^{99m}Tc

DISIDA scan

가 .

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가

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가

^{99m}Tc DISIDA scan

가

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Abstract

Comparison of MR Cholangiography with ^{99m}Tc DISIDA Scan in the Evaluation of Neonatal Cholestasis

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Sonography and ^{99m}Tc DISIDA scan are two major diagnostic tools used in the differential diagnosis of neonatal hepatitis and biliary atresia, which are common causes of conjugated hyperbilirubinemia in neonates and young infants.

Recently, MR cholangiography can be applied in pediatric patients with neonatal cholestasis because of the recent development of a half-Fourier acquisition single-shot fast spin echo sequence, which is sensitive to static fluid and which can be used to acquire data rapidly.

The purpose of this study was to evaluate the diagnostic accuracy of magnetic resonance (MR) cholangiography as a second-line imaging tool following sonography in the evaluation of neonatal cholestasis.

We retrospectively evaluated MR cholangiography and ^{99m}Tc DISIDA scan

in twenty-two neonates and infants (age range, 28-107 days; mean age, 62 days) presenting with neonatal cholestasis, who had been confirmed by surgery or subsequent clinical and laboratory data. Two independent observers for each were assigned to review the images of MR cholangiography and ^{99m}Tc DISIDA scan without the knowledge of the final diagnosis or other clinical data.

Of the 22 patients, 15 were diagnosed with biliary atresia and 7 with neonatal hepatitis. Among the patients with biliary atresia, three patients had combined features of hepatitis on histopathologic examinations. The diagnostic sensitivity, specificity, accuracy, positive predictive value and negative predictive value of MR cholangiography were 90.0 %, 71.4 %, 84.1 %, 87.0 % and 81.3 %, respectively, and those of ^{99m}Tc DISIDA scan were 48.3 %, 46.5 %, 47.7 %, 65.9 % and 29.6 %, respectively.

In the evaluation of patients with neonatal jaundice, MR cholangiography, having superior diagnostic accuracy to ^{99m}Tc DISIDA scan, should be considered subsequent to sonography.

Key Words: MR cholangiography, neonatal cholestasis