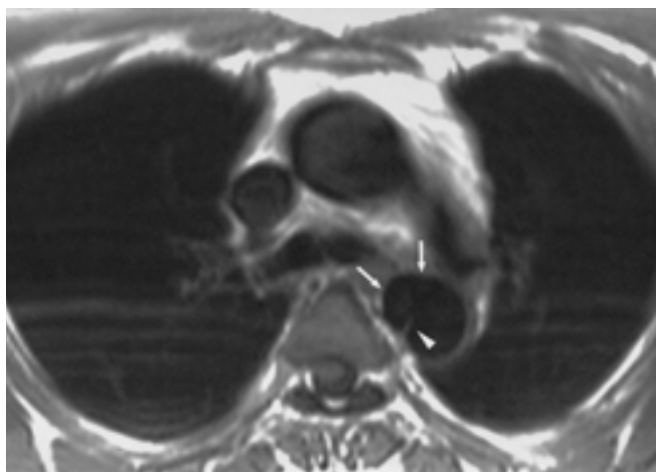


2 .

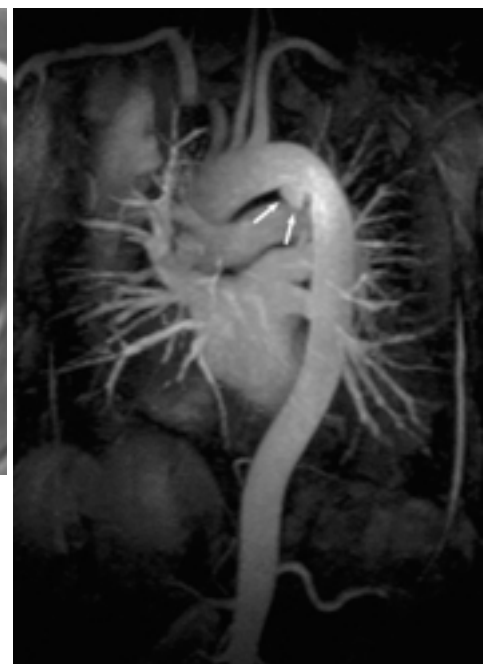
(acute deceleration injury) (magnetic resonance imaging, MRI), (crushing injury) . 가 , 가 . (90%) MRI가 100% (ligamentum arteriosum) , 84% (computed tomogram, CT) 69% . 가 2 cm(1.5 cm) (1). (intima) (media) (adventitia) (2, 6, 7). 가 가 MRI MRI 80 - 90%가 , 10 - 20% 4 90%가 (3, 2 - 5% 가 (5). 1990 5 2000 2 (blunt trauma)

(7 , 3 , 2 ,

3) 1 . 5 - 65 (36) TR/TE, 4.6/1.8 ms; , 1.7 mm; , 30 ;
 8 (n=5), , 5 - 8 cm; , 256 × 256 512 × 512
 (n=3), (n=1), (hemiparesthesia, 180 14
 n=1), (hoarseness, n=1) . (maximum intensity projection, MIP)
 (n=6), (n=2),
 (n=2), (n=1), (n=1), MRI (가 , ,),
 (liver contusion, n=2), (ventricular aneurysm, n=1), (, ,), (,
 (n=1), (n=1) , , ,),
 MRI 6 - 16 (2 (, ,), (intimal flap)
) . 16 14 MRI 3 , 가 (pseudocoarctation) ,
 , 14 3 6 , 3 (mediastinal hematoma) (pleural
 7 . 12 MRI 1 - 13 (3) effusion) . MRI
 CT (transesophageal 6 MRI 1 - 2 (6
 echocardiogram, TEE) 가 10 ,) 1 2 (2 7) .
 가 3 .
 MRI 1.5 Tesla(Magnetom Vision; Siemens, Enlangen, Germany) (EKG - gated
 spin - echo sequence) TR/TE, 500/32 ms;
 , 5 - 8 mm; , 90 ; , 256 × 256
 T1
 (oblique sagittal or arch view),
 (coronal view) .
 . 12 3D
 (contrast - enhanced 3D MR angiogra -
 phy) . MR angiography gadopente -
 tate dimeglumine(Magnevist; Schering, Berlin, Germany) 0.2 MRI 가
 mmol/kg 2 mmol/sec 20 15 1 .
 (scan delay time) . 16 (Fig. 1), (-) 1



A



B

Fig. 1. A typical traumatic pseudoaneurysm in a 43-year-old man who was in a motor vehicle accident 3 months ago.

A and B. T1-weighted axial image and MR angiography show a anteromedially directed saccular aneurysm, located at the aortic isthmus (arrows). Intimal flap is demonstrated as intermediate signal intensity on T1-weighted axial image (arrow-head). The tearing site was 2 cm distal portion to the origin site of left subclavian artery and was confirmed at operation.

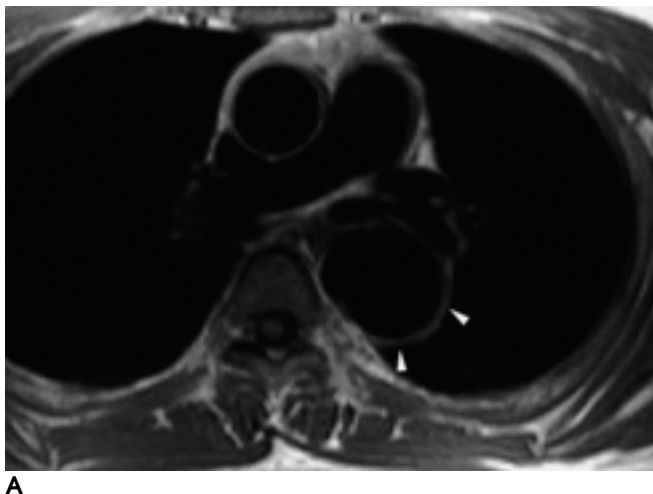
2 가 가 가 가 (Fig. 2). 가 가 (lobulating contour) 가 16
 2.8 ± 0.8 cm (mean \pm SD, , 1.3 - 4.5 cm), MRI 가 가 가
 3.3 ± 1.0 cm (mean \pm SD, 1.5 - 6.2 cm) 가 가 가
 13 , 2 (Fig. 4). 가 가 가
 4.4 cm, 6.2 cm 7 (Fig. 1). 10
 2.9 cm, 2.8 cm 가 가 가 (Fig. 3). 가 가 가



Fig. 2. Two aortic aneurysms in a 34-year-old man who sustained blunt thoracic trauma 13 months ago.

A. T1-weighted MR image in oblique sagittal plane along the aortic arch (arch view) shows two saccular aneurysms, one at the isthmus (arrowheads) and the other at the thoracoabdominal junction (arrows).

B. Angiography confirms the presence of two discrete aneurysms (arrowheads and arrows).



A



B

Fig. 3. A large aneurysm in a 28-year-old man who was in a motor vehicle accident 2 months ago.

A. T1-weighted axial image shows a posterolaterally directed saccular aneurysm located at the isthmus (arrowheads).

B. MR angiography shows the aneurysm with lobulating contour (arrowheads) and pseudocoarctation above and below the aneurysm (arrows). The location of pseudoaneurysm was confirmed at operation and graft interposition was performed.

(94%).
3 - 5 cm
(8). 가 91%
88%
가 lumen) (true lumen)
가
50% 80% MRI
가 (ductus divertic- (penetrating (contrast
(1).
(fusiform posttraumatic aneurysm)
1% 가 가
TEE 가 CT 가 가 MRI
MRI 가 가 MRI
가 , 가 가
30% (9). CT CT 가 MRI
CT (10). 가 가 MRI
MRI MR angiography 가
Caes (11) 가

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MR Imaging Findings of Traumatic Thoracic Aortic Injury¹

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Purpose: To determine the magnetic resonance imaging (MRI) findings in patients with traumatic thoracic aortic injury and to assess the usefulness of MRI for the diagnosis of aortic injury.

Materials and Methods: Between May 1990 and June 2000, sixteen patients with blunt thoracic aortic injury underwent MRI. The findings were evaluated with regard to the type of aortic injury, aortic circumference, the size, direction and shape of the pseudoaneurysm, the intimal flap, and pseudocoarctation. Six patients underwent follow-up MRI, and any changes in the findings were assessed.

Results: MRI indicated that traumatic thoracic aortic injury comprised localized pseudoaneurysm in 15 patients and extensive aortic dissection in one. The aortic circumference was partially involved in all cases. Pseudoaneurysms were located at the aortic isthmus in 16 cases and the descending thoracic aorta in one. Two patients each had two lesions: two pseudoaneurysms in one, and aortic dissection and pseudoaneurysm in the other. The mean diameter and length of the pseudoaneurysms was 2.8 ± 0.8 cm (mean \pm SD) and 3.3 ± 1.0 cm (mean \pm SD), respectively. Their direction was anteromedial or anterolateral in 15 cases and posterolateral in two. All were saccular shaped. An intimal flap was present in seven cases and pseudocoarctation was demonstrated in ten. Follow-up MRI revealed changes in the size of a pseudoaneurysm or the length of an aortic dissection.

Conclusion: The most common finding demonstrated by MRI in patients with traumatic thoracic aortic injury was an anteromedially-directed saccular pseudoaneurysm in the aortic isthmus. This modality was considered useful for evaluation of the entire aorta in cases of multiple pseudoaneurysms or aortic dissection.

Index words : Aorta, MR
Aorta, injuries
Thorax, MR
Trauma

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