

1

2

: III 가

: 1996 9 1998 5

65 65 ( : = 64:1, 23 )

25

32

(D ).

(A ), 40

16

(B ).

(C ), 16

T1

( ) 3/4( )

Zlatkin

$\chi^2$

: A 25 ,

I 가 ,

B 40

I II

III

I 가

(p value, 0.611, 0.567). C 16

, D 16

II ,

I 가

III

(p value, 0.772).

:

가

(glenoid fossa)

가

(scapular neck)

가

가

(1-5).

(1,5,9-12).

(glenohumeral joint)

가

가

(7),

(4),

(6).

Bankart

(capsular mechanism)

(2),

(inferior glenohumeral ligament)

(1,4,7,8).

(labrum)

1996 9

1998 5

1

2

1999 1 27

1999 4 7

65

65

64:1, 14-55  
 ( 23 ) , ( AM-  
 BRI) 30 , ( SLAP) 16 ,  
 (impingement syndrome) 5 , AMBRI SLAP  
 3 , (partial thickness rotator cuff  
 tear, PTRCT) 3 , SLAP PTRCT가 2 ,  
 2 , AMBRI 1  
 , AMBRI PTRCT가 1 ,  
 (Rotator interval lesion) 1 , (loose body)  
 1 .  
 가  
 , grade II  
 (anterior translation)  
 , grade I ± . 65  
 25  
 (A ) , 20 , 20 (B ) .  
 32  
 16 (C ) , 9  
 , 7 (D ) .  
 21-gauge 가  
 (Iopamiro , Ilsung, Seoul, Korea)

Table 1. Correlation Between Anterior Capsular Insertion Types and Presence or Absence of Anterior Instability of Glenohumeral Joint on Physical Examination at Out Patient.

Group	A		B		Total			
	Present	Suspicious	Absent					
Instability type level	mid	inf	mid	inf	mid	inf	mid	inf
	Type I	9	14	10	15	10	12	29
Type II	9	10	7	5	6	6	22	21
Type III	7	1	3	0	4	2	14	3
Total	25		20		20		65	

Table 2. Correlation Between Anterior Capsular Insertion Types and Presence or Absence of Anterior Instability of Glenohumeral Joint on Physical Examination under General Anesthesia.

Group	C		D		Total			
	Present	Suspicious	Absent					
Instability type level	mid	inf	mid	inf	mid	inf	mid	inf
	Type I	6	8	3	6	3	3	12
Type II	6	8	5	3	3	3	14	14
Type III	4	0	1	0	1	1	6	1
Total	16		9		7		32	

500 ml 0.1 mmol/kg Gadolinium-  
 DTPA(Magnevist , Schering, Germany) 2ml 2m-  
 mol/LmM 20ml .  
 1 1.5 Tesla  
 (Magnetom vision, Siemens, Erlangen, Germany)  
 spin echo T1 T2  
 3mm,  
 0.6mm , matrix number 166 x 256,  
 160-170mm  
 T1 ,  
 ( ) 3/4( ) 2  
 Zlatkin (1)  
 1 (Fig. 1), 1cm  
 II (Fig. 2), III  
 1cm (Fig. 3)  
 65  
 32 (group A,C)  
 (B,D) X<sup>2</sup> test

65  
 Table 1 .  
 (Group A) I II 가  
 III (Group A)  
 (Group B)

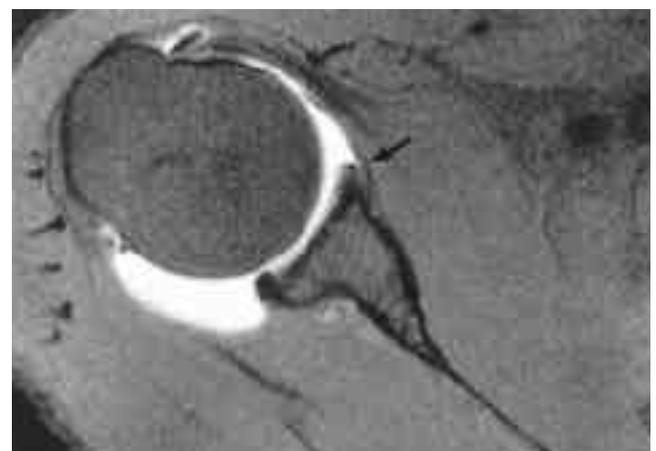


Fig. 1. Anterior capsular insertion type I in a 24-year-old man. Fat suppressed T1(TR/TE= 660/12) weighted axial image shows anterior capsule arising from the labrum.

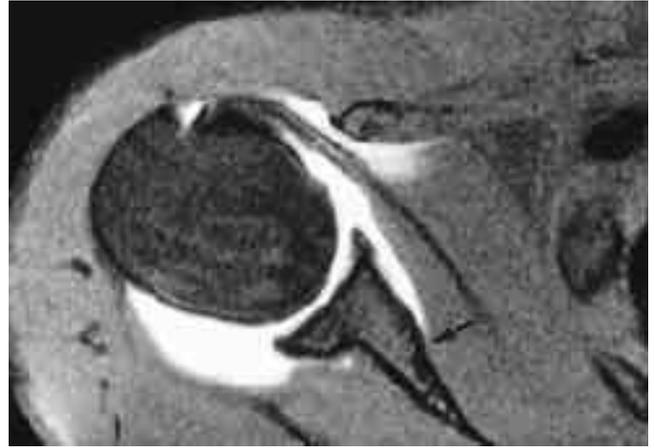
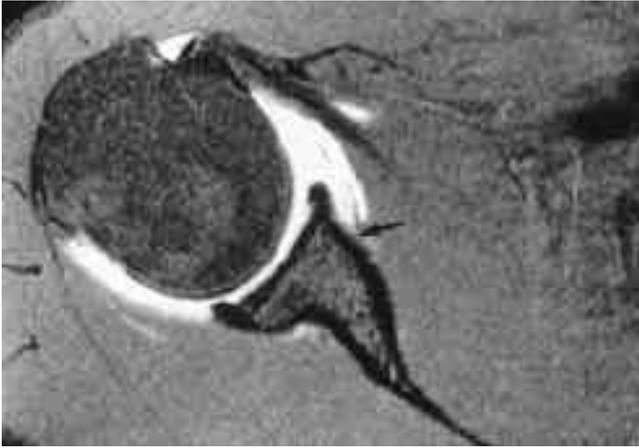


Fig. 2. Anterior capsular insertion type II in a 23-year-old man. Fat suppressed T1(TR/TE= 660/12) weighted axial image shows anterior capsule arising from the scapular neck within 1cm of the labral base.

Fig. 3. Anterior capsular insertion type III in a 22-year-old man. Fat suppressed T1(TR/TE= 660/12) weighted axial image shows anterior capsule arising from the scapular neck more than 1 cm medial to the labral base.

Type	Group A, B		p value
	I	II	
III	28%	17.5%	0.611
4%, 5%			0.567
Group A, B	36%	32.5%	
Group A, B	40%	32.5%	
65			
0.05			
Table 2			
(Group C)	I	II	
III			
(Group D)	I	II	
Group C, D		25%, 12.5%	
0%, 6.3%			
37.5%, 50%			
50%, 37.5%			
32			
0.279			
0.05			
			0.772

(stability) (dynamic), (static)  
 (constraints),  
 (shoulder girdle),  
 (4,13).  
 (displacing force) (13,14).  
 (tilt)가  
 (13).  
 (coracohumeral ligament)  
 (glenohumeral ligament) 가  
 (13,14).  
 (4,13).  
 (anterior and posterior bands) (axillary pouch) 2/3  
 (4). 90°  
 가 (fanning)  
 90°  
 가  
 (4,5,13).

(13,14). III  
 Neumann I  
 (13). II  
 1962, Moseley (5) 96% II  
 가 80%, 63% I 가 II  
 II, III Zlatkin 1cm II  
 가 II III Oever-gaard (type II, partly labral and partly scapular neck) (5) 가  
 (subscapular recess)가 (restrain) I  
 (1,5,9,12). Neumann II I, Neumann II  
 III (11,15,16). III 가  
 (medial stripping) 가 III  
 Resnick (13) 65 II  
 Palmer (6) III 가  
 III 가가 (49%, 51%), 가  
 I 가 (43%, 48%), 가 (Group B, D) III 가  
 가 Palmer II III 가  
 III 가 , II III p value가  
 가  
 Neumann (11) 52 가  
 I II  
 47%, 49% , III 4%

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## **A Study to Assess by Means of MR Arthrography the Causal Relationship between Anterior Capsular Attachment Type and Anterior Instability of the Glenohumeral Joint<sup>1</sup>**

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**Purpose :** To evaluate by means of MR arthrography the causal relationship between anterior capsular attachment type and anterior instability of the glenohumeral joint.

**Materials and Methods :** Sixty-five patients (M:F= 64:1; mean age, 23 years), who had undergone shoulder MR arthrography were retrospectively reviewed. There was no history of traumatic dislocation, and medical records relating to anterior instability were available. Physical examination revealed anterior instability in 25 patients(Group A), while in 40 (Group B), this was either suspicious or absent. With the aid of general anesthesia, 32 patients who had undergone surgery were physically examined. Anterior instability was evident in 16 patients(Group C), and suspicious or absent in the remaining 16 (Group D). All images were obtained after intra-articular injection of Gd-DTPA. Fat-suppressed T1 axial imaging was used to evaluate anterior capsular attachment type at mid and distal three-fourths levels of the glenoid fossa. The causal relationship between anterior capsular attachment types and anterior instability was analyzed using the  $\chi^2$  test

**Results :** In group A, type I was most common at distal three-fourths level, and types I and II were equal and more common than type III at mid level. In group B, type I anterior capsular attachment type was most common at both mid and distal three-fourths level. In these groups, no statistical significance was noted between anterior capsular attachment type and anterior instability (p value 0.611: 0.567). In group C, types I and II were equal and more common than type III at both mid and distal three-fourths level, while in group D, type II was most common at mid level, and type I was most common at distal three-fourths level. In these groups, no statistical significance was noted between anterior capsular attachment type and anterior instability (p value, 0.772).

**Conclusion :** There was no statistically significant difference between anterior capsular attachment type and anterior instability of the shoulder joint.

**Index words :** Shoulder, dislocation  
Magnetic resonance (MR), arthrography  
Shoulder, MR

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