J Shoulder Elbow Surg (2016) 25, e348–e352

ELSEVIER

Journal of Shoulder and Elbow Surgery

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Anterior interosseous nerve syndrome after shoulder arthroscopy: report of 3 cases

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Keywords: Shoulder arthroscopy; anterior interosseous nerve palsy; anterior interosseous nerve syndrome; median nerve; flexor pollicis longus; flexor digitorum profundus; arthroscopy complication; case report

In 2006, there were 257,541 cases of shoulder arthroscopy (excluding those for rotator cuff repair) in the United States alone.[5] Among the possible complications, anterior interosseous nerve (AIN) syndrome is an underdiagnosed one. There was only 1 case report, with 3 patients, reporting the occurrence of AIN syndrome after shoulder arthroscopy procedures.[9] The previous study described traction-type neurapraxia in patients predisposed with a fibrous band over the nerve as a possible etiology.

Because of the rarity of AIN syndrome, neither standardized diagnostic criteria nor treatment exists for this entity. It is also largely accepted that the definite etiology of this syndrome is still elusive. We report 3 cases of AIN palsy after shoulder arthroscopy with potential risks and clinical outcomes of the patients.

Materials and methods

We reviewed the records of patients with AIN syndrome after shoulder arthroscopy managed in our centers from 2010-2015. The eligibility criteria were AIN syndrome based on clinical assessment with paralysis of the flexor pollicis longus (FPL) and flexor digitorum profundus (FDP) of the second finger on the same side of the hand undergoing shoulder arthroscopy. Given the rarity of the condition, we included all cases consecutively.

Results

A summary of the patient demographic characteristics and original shoulder procedures in our study and the previous study by Sisco and Dumanian[9] is shown in Table I. The characteristics of AIN syndrome presented by each patient are displayed in Table II.

Case 1

A 61-year-old man was diagnosed with a rotator cuff tear and underwent shoulder arthroscopy. General anesthesia was

This study was approved by the Ethical Committee of Asan Medical Center, Seoul, Korea.

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http://dx.doi.org/10.1016/j.jse.2016.07.028

Table I Summary of patient demographic characteristics and initial shoulder procedures in our study and that of Sisco and Dumanian[9]

Case	Age, y	Sex	Shoulder procedure	Anesthesia	Position	Traction
Current patients						
1	61	M	Capsular release, acromioplasty, and rotator cuff repair	General anesthesia without interscalene block	Lateral decubitus	Spider traction and 60–mm Hg pump
2	58	M	Bursectomy and synovectomy	General anesthesia	Lateral decubitus	Spider traction and 60–mm Hg pump
3	41	F	Bursectomy and synovectomy	General anesthesia without interscalene block	NA	NA
Patients in case report of Sisco and Dumanian						
1	44	M	Debridement, subacromial decompression, and release of coracoacromial ligament	Regional anesthesia with interscalene block	Lateral decubitus	Traction of 4.5 kg applied with boom attached to adhesive foam sling on distal part of forearm
2	52	M	Debridement of humeral head and labrum, subacromial decompression, and repair of supraspinatus and infraspinatus portions of rotator cuff	Regional anesthesia with interscalene block	Lateral decubitus	Traction of 4.5 kg applied with boom attached to adhesive foam sling on distal part of forearm
3	35	M	Labral and rotator cuff debridement and subacromial decompression	Regional anesthesia with interscalene block	Beach chair	Not clear

F, female; *M*, male; *NA*, not available.

Table II Summary of AIN syndrome characteristics

Case	AIN findings	AIN onset	Treatment	Abnormal findings	Recovery time	Notes
Current patients						
1	FPL and FDP2	1 mo after surgery	Surgical	No abnormalities	NA	Symptoms persisting after 1 y
2	FPL and FDP2	Within 1 week after surgery	Conservative	NA	18 mo	Complete recovery
3	FPL and FDP2	Within 1 week after surgery	Surgical	Compressive fibrous band at proximal aspect of FDS	3 mo	Complete recovery
Patients in case report of Sisco and Dumanian[9]						
1	FPL and FDP2	1 week	Conservative	NA	9 mo	Complete recovery
2	FPL and FDP2	Soon after surgery	Surgical	Compressive fibrous band at proximal aspect of FDS	5 mo	Complete recovery
3	FPL and FDP2	Several days	Surgical	Fibrous band along dorsum of superficial head of pronator teres muscle	7 mo	Complete recovery

AIN, anterior interosseous nerve; *FDP2*, flexor digitorum profundus of second finger; *FDS*, flexor digitorum superficialis; *FPL*, flexor pollicis longus; *NA*, not available.