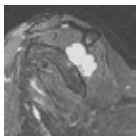
Suprascapular Nerve Decompression: When and How in 2015?

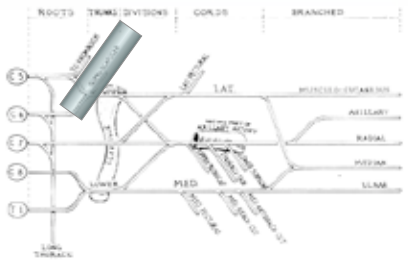


Nikhil N Verma, MD
Associate Professor, Dept. of Orthopaedics
Rush University Medical Center
Team Physician, Chicago White Sox & Bulls
Chicago, Illinois

Suprascapular Nerve Decompression
Nikhil N. Verma, MD

Royalties: Smith & Nephew Endoscopy
Consultant: Smith & Nephew, Minivasive, OrthoSpace
Stock: Omeros
Research/Education/Fellowship Support: Smith & Nephew, Arthrex, Athletico, ConMed Linvatec, Miomed, Mitek, Tornier
Publisher Support: Arthroscopy, Vindico Medical
Editorial Board: Journal Knee Surgery, Arthroscopy, SLACK incorporated

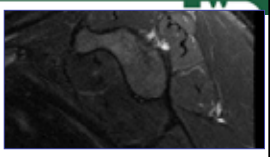
Neuroanatomy:
Upper Trunk of the Brachial Plexus (C5, C6)



…50% have contributions from C4

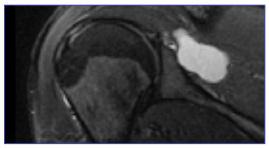
Suprascapular Neuropathy

Most frequently injured peripheral branch of the brachial plexus in athletes



Potential Cause of Shoulder Pain and Weakness

Diagnosis often overlooked



Scapular Notch

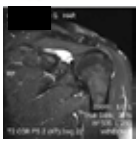
Acute Pain → Weakness

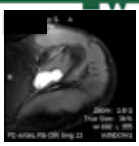
Referred to Lateral Shoulder (RCT)

Repetitive Trauma
- Sport
- Work

Extrinsic Compression: Spinoglenoid Notch

SLAP Tear
- -Ganglion cyst
- One way valve





Similar to Meniscal Cyst

Labral Injury
- Split
- Separation

Anthony A. Romeo, MD
Rush University Medical Center
Chicago, Illinois

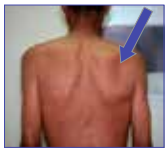
Spinoglenoid Notch

More Insidious Onset

Pain over the Notch

May present with symptoms of "instability"

Can have positive crossed-body adduction test



Pathophysiology:
How does the nerve get injured?

- Traction
- Microtrauma
- Trauma
- Iatrogenic
- Osseous stenosis
- Extrinsic Compression
- Rotator Cuff Retraction

Massive Rotator Cuff Tear

Suprascapular nerve anatomy during shoulder motion: a cadaveric proof of concept study with implications for neurogenic shoulder pain

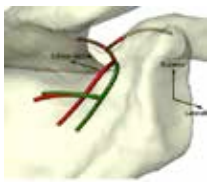
Daniel F. Mazzocca, MD[a,b], Anshu Singh, MD[a], Jessica M. Wells, BA[a], Guoan Li, PhD[a] Jon JP. Warner, MD[a,b]

-Position of the suprascapular nerve tracked using biplane flouroscpy

-Nerve translated 3.5 mm medial at spinoglenoid notch with simulated tear

-Anatomic repair restored nerve position

-Transverse Scapular ligament release allowed displacement of nerve out of scapular notch



Suprascapular Nerve Release

The association of suprascapular neuropathy with massive rotator cuff tears: A preliminary report

Reversal of Suprascapular Neuropathy Following Arthroscopic Repair of Massive Supraspinatus and Infraspinatus Rotator Cuff Tears

Diagnosis

Pain over the posterior-superior shoulder

Physical Exam:
- -Weakness (External Rotation/Forward Elevation)
- -Provocative Testing

Diagnostic Testing
- -MRI
- -EMG

Suprascapular Nerve Stretch Test

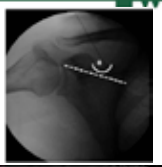
Elicit pain with stretch of SSN
- Contralateral Head rotation
- Shoulder Retraction

Diagnose compression that occurs only in stretched position

Arthroscopic suprascapular nerve release: indications and technique. Lafosse L, Piper K, Lanz U. J Shoulder Elbow Surg. 2011 Mar:S9-13.

Diagnostic Tests

Flourscopic Guided Injection to the scapular notch.



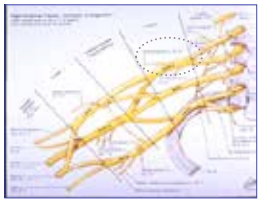
EMG

Denervation Potentials

Fibrillations

Spontaneous Activity

Prolonged Motor Latencies



…NEGATIVE EMG does not rule out suprascapular neuropathy

May still be candidates for suprascapular nerve release

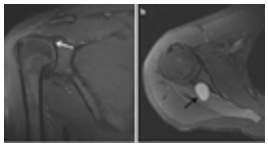
MRI

Location of Cyst

Associated Pathology

Muscle Atrophy

Fatty Infiltrates



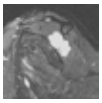
Anthony A. Romeo, MD
Rush University Medical Center
Chicago, Illinois

Selective Diagnostic Injection

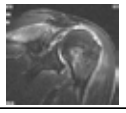
When Do We Decompress: Current Indications

Entrapment
- -Overhead athlete
- -Posterior/Superior Shoulder Pain
- -Weakness/Atrophy SS and IS
- -EMG Positive

Spinoglenoid Notch Cyst
- -Posterior Shoulder Pain
- -MRI Positive



Rotator Cuff Tear?
- -Large or Massive Tears SS/IS
- -Revision Situations
- -Pain or Atrophy out of proportion to the Tear



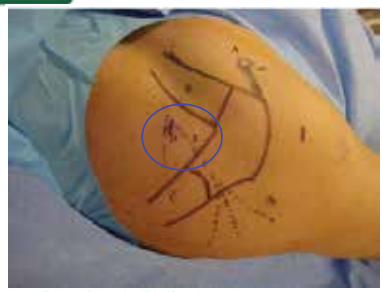
Technique

Arthroscopic Decompression of the Suprascapular Nerve at the Spinoglenoid Notch and Suprascapular Notch Through the Subacromial Space

Neil Ghodadra, M.D., Shane J. Nho, M.D., M.S., Nikhil N. Verma, M.D., Stefanie Reiff, B.A., Dana P. Piasecki, M.D., Matthew T. Provencher, M.D. and Anthony A. Romeo, M.D.

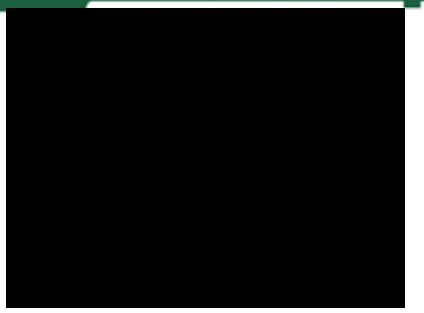
Arthroscopy: The Journal of Arthroscopic and Related Surgery
Volume 25, Issue 4, Pages 430-445 (April 2009)
DOI: 10.1016/j.arthro.2008.10.024

Arthroscopic Technique: Portal Placement

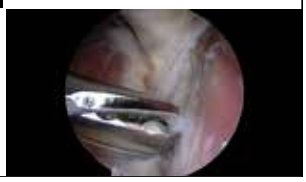


Arthroscopy: The Journal of Arthroscopic and Related Surgery 2009; 25:439-445

Scapular Notch
Arthroscopic Treatment: Technique



Spinoglenoid Notch



Anthony A. Romeo, MD
Rush University Medical Center
Chicago, Illinois

Rehabilitation

0 – 2 Weeks: Sling for Comfort, Immediate passive, active assist, active ROM

2 – 4 Weeks: Normalize ROM, SS/IS Reactivation

4 – 12 Weeks: Aggressive Strengthening

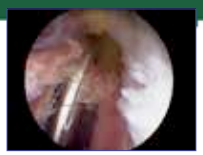
Summary: Suprascapular Neuropathy

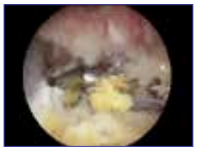
Differential Diagnosis

MRI / EMG

Evolving Indications

Arthroscopic Techniques





Midwest Orthopaedics at Rush

Chicago

Anthony A. Romeo, MD
Rush University Medical Center
Chicago, Illinois