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Surgical Options for Nerve Disorders of the Shoulder

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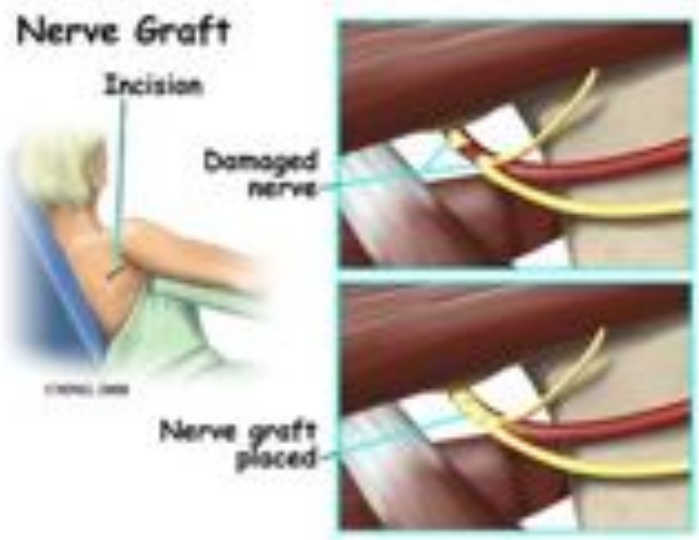
Common Pathologies:

1. Long Thoracic Nerve
2. Suprascapular Nerve
3. Spinal Accessory Nerve
4. Brachial Neuritis / Parsonage Turner

Surgical Options:

1. Neurolysis
2. Nerve Grafting
3. Muscle Transfers



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Neurolysis

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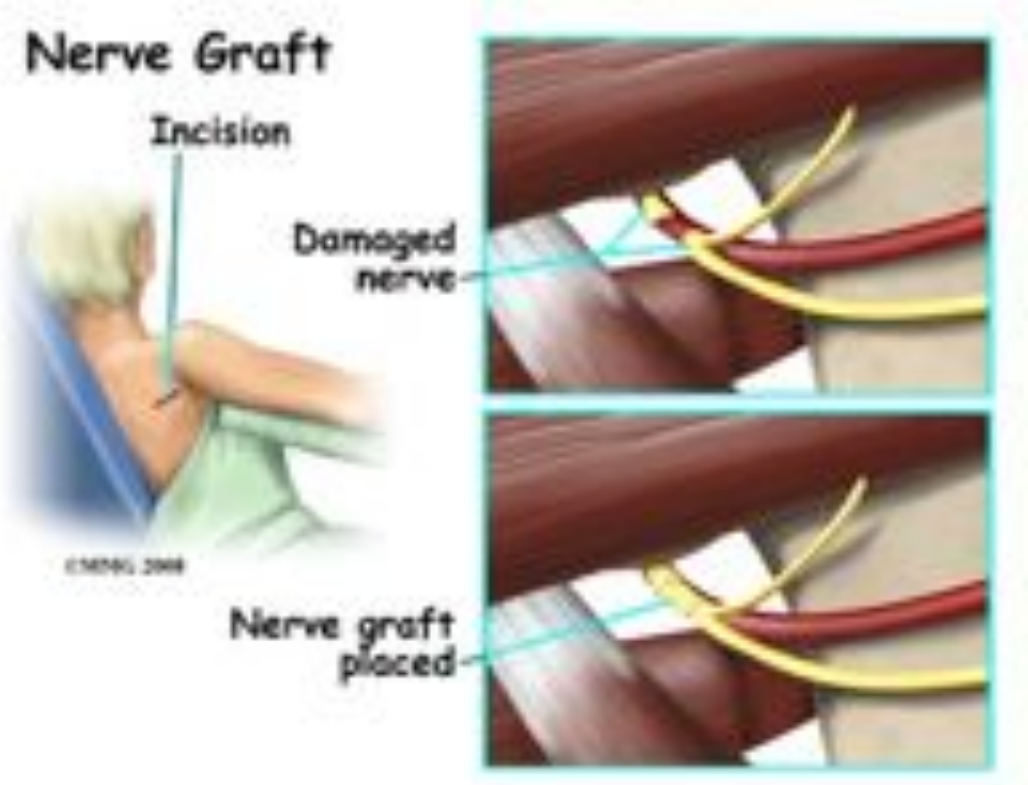
Nerve Grafting



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Muscle Transfers

Long Thoracic Nerve Palsy	Pec Major for Serratus
Spinal Accessory Nerve Palsy	Modified Eden-Lange Procedure

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Long Thoracic Nerve Palsy

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Serratus Wall Test

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Long Thoracic Nerve Palsy - Natural History

1. Most recover within 1 year
2. May take up to 3 years
3. 25% never fully recover

1. Fery A. Results of treatment of anterior serratus paralysis. In: Post M, Morrey BF, Hawkins RJ, eds. *Surgery of the Shoulder.* St Louis, Mo: Mosby Year Book; 1990:325-329.
2. Foo CL, Swann M. Isolated paralysis of the serratus anterior: a report of 20 cases. J Bone Joint Surg Br. 1983;65:552-556.

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Long Thoracic Nerve Palsy - Indications for Surgery

Symptoms > 1 year

+

No improvement on EMG

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Long Thoracic Nerve Palsy - Neurolysis

- Supraclavicular:
  - Disa et al. 2001 - 4 Patients
  - Nath et al. 2004
    - 47 cases, Heterogeneous
    - 98% improve in lesions < 10yrs duration
- Distal:
  - Laulan et al. 2011
    - Pure LTN palsy cases (Brachial Neuritis excluded)
    - Mean time to surgery = 16 months
    - ‘Most’ patients recovered
    - Best results if surgery < 6months after onset (!)

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Long Thoracic Nerve Palsy - Muscle Transfer

Pectoralis Major for Serratus

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Long Thoracic Nerve Palsy - Pec Major Muscle Transfer

Author	No. of Patients	No. of Surgeries	Follow-up	Outcome
Gozna and Harris[37]	14	3		All 3 had satisfactory function; 1 reoperation
Post[65]	8	8	Average 2 y	All excellent
Noerdlinger et al[79]	15	15	64 mo	12 would undergo the procedure again; pain decreased in 11 patients; function improved in 10 patients; excellent in 2 patients, good in 5, fair in 4, poor in 4; better results when at least 60° of external rotation postoperatively; most returned to preoperative level of activity
Couture et al[27]	11	11	41 mo	10 (91%) had improvement in motion, function, reduction of pain, and elimination of scapular winging; 1 unsatisfactory; recurrence of winging secondary to noncompliance postoperative
Warner and Navarro[109]	8	8		7 had satisfactory results; 1 unsatisfactory, deep infection and graft removal

From Safran. AJSM. 2004

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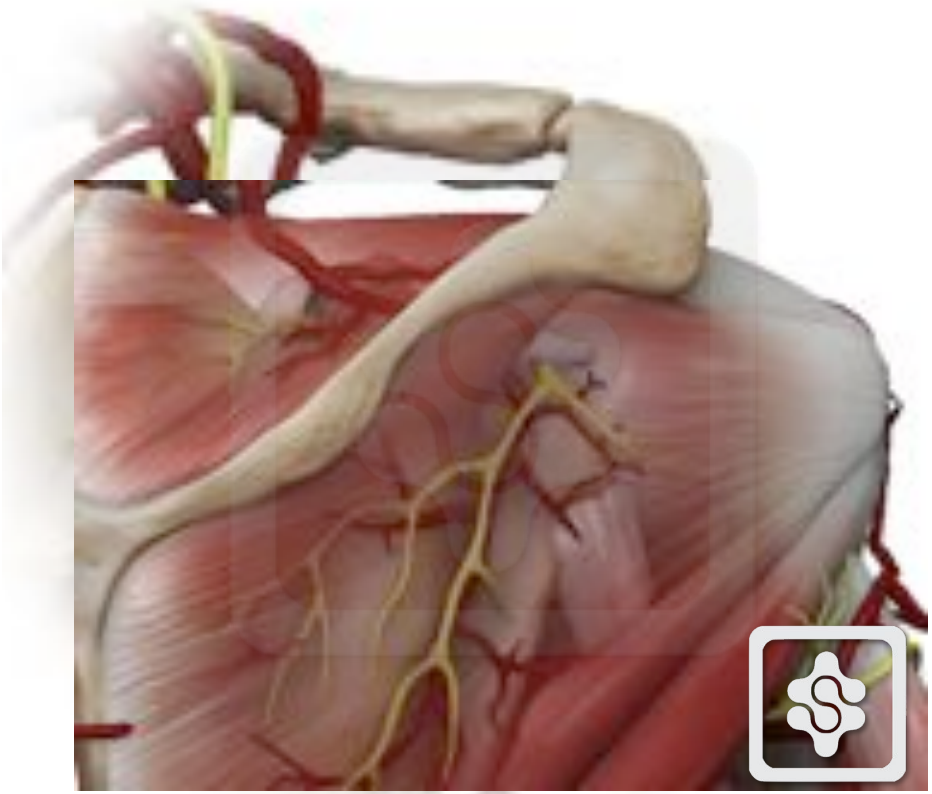
Suprascapular Nerve Palsy

- Idiopathic
- Paralabral Cyst / Ganglion
- Trauma



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Suprascapular Nerve Palsy

- Idiopathic
- Paralabral Cyst / Ganglion
- Trauma

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Suprascapular Nerve Palsy

- Supraspinatus +/- Infraspinatus
  - Wasting
  - Weakness

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Suprascapular Nerve Palsy - Investigations

- **EMG:**
  - Proximal - Suprascapular Notch
  - Distal - Spinoglenoid Nc

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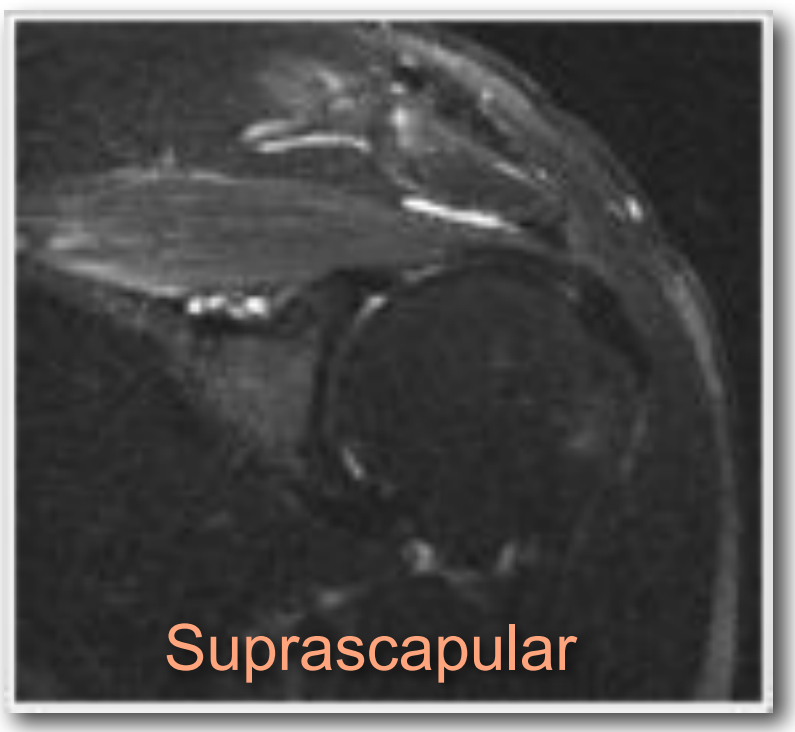
Suprascapular Nerve Palsy - Investigations

- **MRI Scan:**
  - Ganglion Cyst / Mass lesion



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Suprascapular Nerve Palsy - Natural History

No Cyst	Recover in 1 year
Cyst	No recovery

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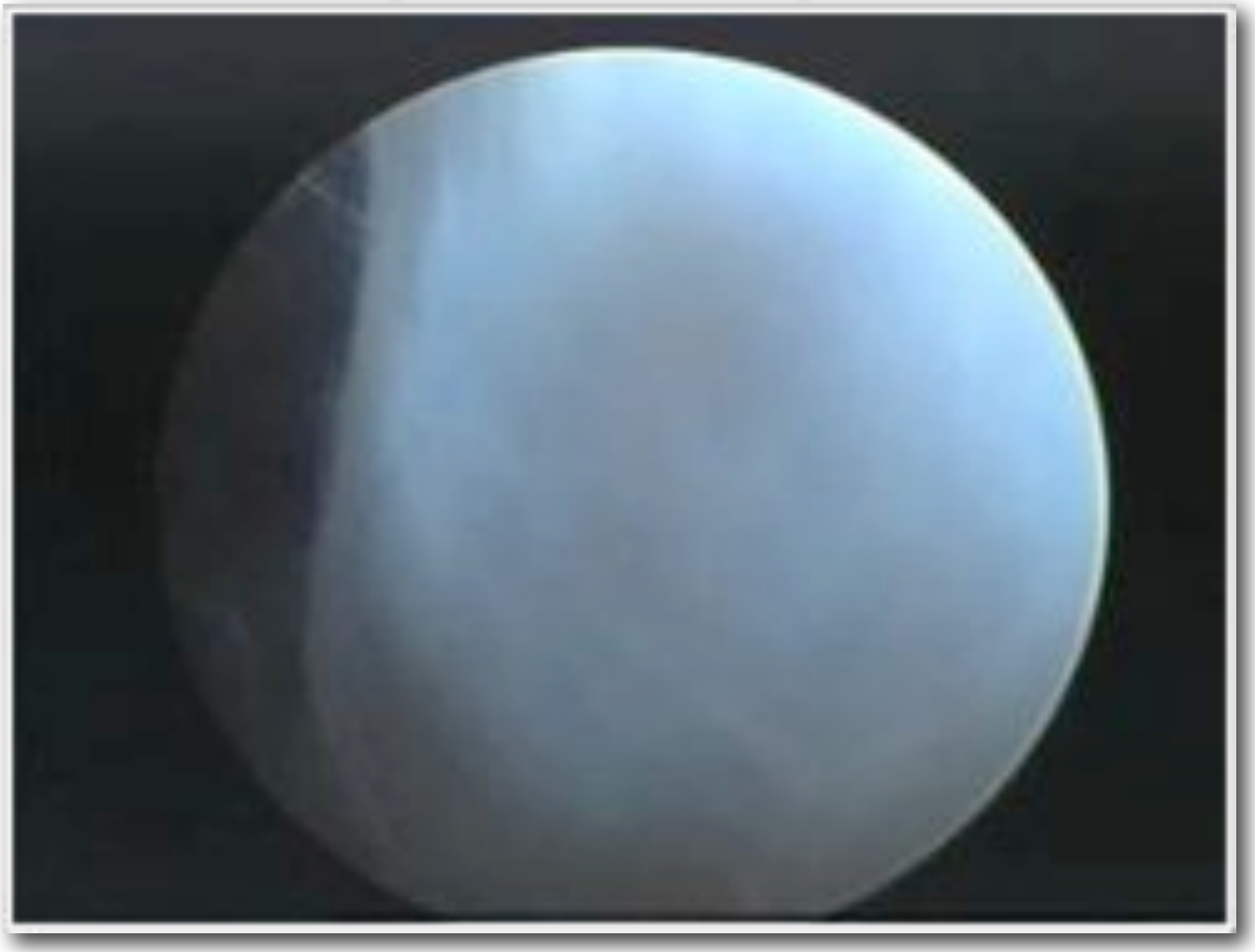
Suprascapular Nerve Palsy - Arthroscopic Decompression



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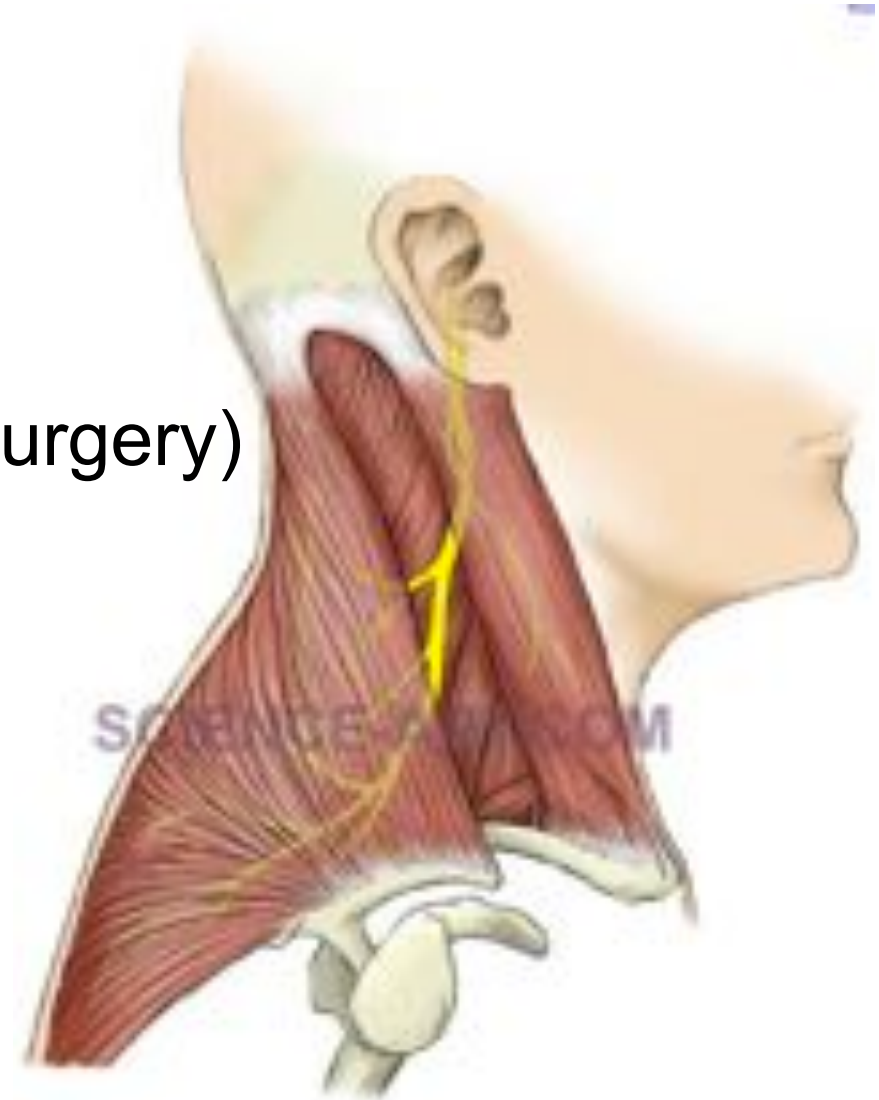
Spinal Accessory Nerve - Trapezius

Causes:

- Blunt Trauma
- Sharp Trauma (neck surgery)



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Spinal Accessory Nerve - Trapezius

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Spinal Accessory Nerve - Prognosis

Blunt Trauma	Usually Recover in 1 year
Sharp Trauma	No recovery

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Spinal Accessory Nerve - Modified Eden-Lange Procedure

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Parsonage-Turner Syndrome (Brachial Neuritis)

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Parsonage-Turner Syndrome (Brachial Neuritis)

Surgical Options:

- Neurolysis
- Pec Major Transfer
- Scapulothoracic Fusion

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Scapulothoracic Fusion

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Scapulothoracic Fusion

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Summary:

- **Always get EMG (& MRI)**

- Atraumatic & Recovering = Non-op
- Traumatic / No recovery = Surgery

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Summary:

- **Neurolysis / Decompression:**
  - Early results better than late
- **Muscle Transfer / Fusion:**
  - Good results
  - Limited expectations
  - Long recovery