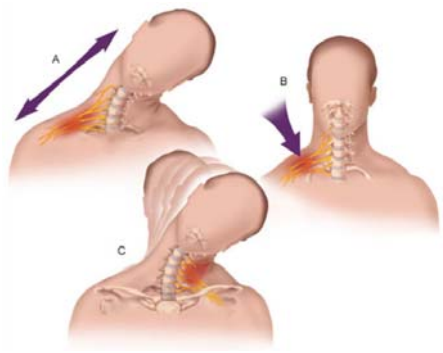
Management of Stinger/Burners

ALLINA HEALTH SPORTS MEDICINE CONFERENCE 2018

Brachial Plexus Injuries

- Common injury in sports
- American Football is by far the most common with up to 70% of college football players reporting having a stinger
- Wrestling
- Soccer, skiing

Brachial Plexus Injuries



Mechanisms of injury

A. Traction
B. Direct compression of plexus
C. Compression of cervical facets

Brachial Plexus Injuries

Peripheral nerve injury is often graded using Seddon's classification

Grade I Neurapraxia

- disruption of nerve function involving demyelination
- axonal integrity is preserved, and re-myelination follows within three weeks
- EMG is typically normal.

Grade II Axonotmesis

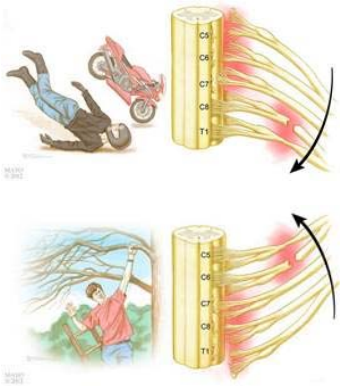
- axonal damage and Wallerian degeneration occur
- electro-conduction changes on EMG within two to three weeks.

Grade III Neurotmesis

- complete nerve transection
- permanent nerve damage

Brachial Plexus Injuries

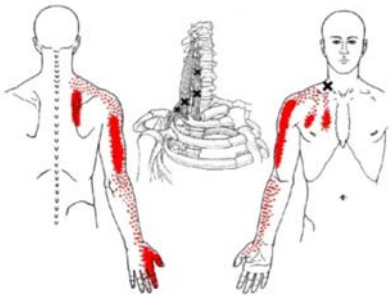
- Burners typically represent a grade I or II injury.
- Grade III peripheral nerve injuries are rare in sports and are not characteristic of burners.
- Stingers/burners typically affect the C5 +/- C6 nerve roots or the upper trunk of the brachial plexus



Brachial Plexus Injuries

Assessment

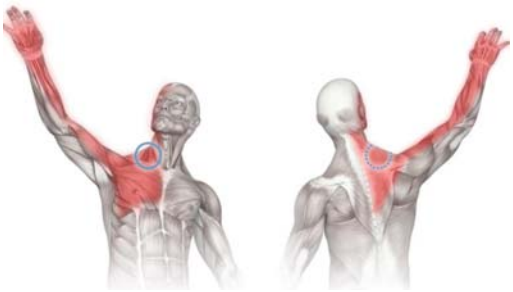
- HPI –inquire about past history or zingers
- EXAM
  - AROM/PROM
  - Neuro – DTRs/motor/sensory
  - Ortho - TOS, Spurling's
  - Palpation – trigger points- referral pattern
  - Motion palpation of cervical spine, humeral head, scapula, 1st rib, clavicle
- DDX
  - consider x-ray if considering bony involvement
  - consider MRI with neuro findings



Scalene Trigger Points and Referred Pain Patterns

Brachial Plexus Injuries

Management



Protect

- remove from play until full pain-free ROM
- no neurologic symptoms and normal strength

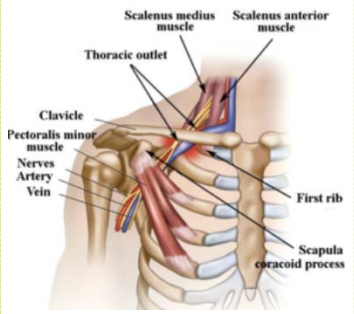
Chiropractic Care Goals

- Restore balance of the C-spine and shoulder/trunk
- Optimize spinal function to reduce nerve entrapment
- Return to play as soon as possible

Brachial Plexus Injuries

Chiropractic care

- Manipulation to release joint adhesions in C/T/1st rib/clavicle/scapula/humeral head
- Cervical traction to release joint adhesions
- Motion assisted myofascial release to reduce muscle adhesions



Therapeutic modalities

- Optimize neuronal/soft tissue healing
- Infrared/red light therapy (low level laser, cold laser) - along injured area
- Photobiomodulation - increased ATP production, decrease oxidation

Brachial Plexus Injuries

Chiropractic management

Nutritional support

- ALA – 600 mg daily
- Omega 3 FA -
- B vitamins - especially B9, B12 (methyl cobalamin – sublingual)
- Vitamin D_2

Brachial Plexus Injuries

Advantages of Chiropractic

- Restore normal joint range of motion (AROM/PROM)
- Reposition or realign a joint - normal distribution of forces and stresses
- Reduce pain
- Reflexogenic effects that inhibit or facilitate muscle tone or stretch reflex (muscle guarding)
- Proprioceptive effects to improve postural and kinesthetic awareness
- Effective and widely used technique in injury rehabilitation

Brachial Plexus Injuries

EBM – randomized controlled trial – Brachial plexus, manipulation

Title	A randomized clinical trial of manual therapy for cervico-brachial pain syndrome – a pilot study Links Export Central Citation
Author(s)	Allison GT, Nagy BM, Hall T
Source	Manual therapy
Date of Publication	2002
Volume	7
Issue	2
Pages	95-102
Abstract	Cervico-brachial pain syndrome is an upper quarter pain condition in which mechanosensitive neural tissue is considered a primary feature. A single-blind randomized controlled trial was conducted to determine the clinical effect of two manual therapy interventions. Thirty subjects (20 females and 10 males) were randomly allocated to one of three groups - one of two manual therapy intervention groups or a control group. One manual therapy intervention group consisted of passive techniques aimed at mobilizing neural tissue structures and the cervical spine. The other involved indirect manual therapy techniques with a focus on articular components of the glenо-humeral joint and thoracic spine. The treatment period lasted 6 weeks in total and was combined with a home exercise programme. Following the 6-week baseline period the control group were crossed over into the specific neural tissue manual therapy group. Pain visual analogue scale (VAS), the short-form McGill pain and Northwick Park neck pain questionnaires were completed before, midway and after the treatment period. The findings suggest that both manual physiotherapy interventions combined with home exercises are effective in improving pain intensity, pain quality scores and functional disability levels. A group difference was observed for the VAS scores at 6 weeks with the neural manual therapy technique having a significantly lower score.
EMBASE keywords	adult; aged; article; cervical spine; *cervicobrachial neuralgia/th [Therapy]; clinical article; clinical trial; controlled clinical trial; controlled study; disability; exercise; female; home care; human; male; movement therapy; nervous tissue; pain assessment; priority journal; randomized controlled trial; shoulder; thoracic spine
Medical Subject Headings (MeSH)	Back Pain [physiopathology, *therapy]; Brachial Plexus Neuritis [physiopathology, *therapy]; Manipulation, Orthopedic [*methods, *standards]; Pain Measurement; Pilot Projects; Range of Motion, Articular; Single-Blind Method; Surveys and Questionnaires; Thoracic Vertebrae [physiopathology]; Time Factors; Treatment Outcome MeSH check words Adult; Aged; Female; Humans; Male; Middle Aged
Correspondence Address	The Centre for Musculoskeletal Studies, The University of Western Australia, Perth Western Australia. gta@cms.uwa.edu.au
Accession Number	PUBMED 12151246; EMBASE 34790583
Cochrane Group Code	SR-BACK; SR-MUSKEL; SR-NEUROMUSC; SR-SYMPT
Language	eng
Publication Type	Clinical Trial; Journal Article; Randomized Controlled Trial
ID	CN-00409321

Brachial Plexus Injuries

Demonstration

- Prone/supine/seated cervical manipulation
- Prone/Supine 1st rib manipulation
- Anterior/posterior thoracic manipulation
- Long axis distraction of humeral head
- Internal/external rotation of scapula (prone)

Brachial Plexus Injuries

Resources

- https://www.uptodate.com/contents/burners-stingers-acute-brachial-plexus-injury-in-the-athlete
- https://now.aapmr.org/brachial-plexopathy-differential-diagnosis-and-treatment-2/
- https://www.aafp.org/afp/1999/1101/p2035.html
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4904479/
- https://www.ncbi.nlm.nih.gov/pubmed/27476916
- https://www.ncbi.nlm.nih.gov/pubmed/22238091
- https://www.ncbi.nlm.nih.gov/pubmed/20358337
- A randomized clinical trial of manual therapy for cervico-**brachial** pain syndrome -- a pilot study Allison GT , Nagy BM and Hall T Manual therapy, 2002, 7(2), 95Online Publication Date: 2003
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