

Non-operative treatment of chronic shoulder pain: Chronic somatic painful condition

최창혁

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Soft-tissue pain syndrome

: Pain emanating from periarticular structures located outside of the joint capsule and periosteum :
ligaments, tendons, fascia,, bursa and muscles

Classification: Localized - Tenosynovitis, Bursitis, Enthesopathies, Entrapment syndrome, Referred
pain

Regionalized - Myofascial pain syndrome

Myofascial pain dysfunction syndrome

Generalized - Polymyalgia rheumatica

Hypermobility syndrome

Chronic fatigue syndrome

Fibromyalgia syndrome

Myofascial pain

1. Three components: Palpable taut band (TB)

Trigger points (TrPs) and Tender spots (TSs)

Referred pain zone (RPZ)

2. Pathophysiology:

Local mechanism - persistence of the calcium pump with resultant sustained contraction, and an irritable muscle spindle.

Central mechanism - misinterpretation of stimuli by the CNS

3. Precipitation factor: Traumatic in origin (macro & microtrauma)

Skeletal abnormalities

Psychologic: abnormal stress & depression

4. Diagnosis: Local tenderness (palpable band) & pattern of pain referral
Pressure threshold meter
Thermography
5. Treatment: Conservative noninvasive (2 to 4 weeks) → TPI
Physical therapy modalities: stretching, myotherapy, Medication
TPI

Fibromyalgia:
disorder of pain modulation that causes decreased pain tolerance

1. Epidemiology: Community survey (Wolfe): 2% of general population
10% of general medical practice
15% of rheumatology practice
in female 4 folds than male
2. Clinical criteria: history of widespread pain
Induction of pain by 4kg of palpation pressure At 11 of 18 “tender points”
3. Cause: unknown
Hypotheses: personality disorder
Physical trauma
Abnormal muscle
Biochemical abnormalities: low serotonin in platelet & CNS
Low ATP in RBC
4. Clinical management:
Accepting attitude toward the disorder
Comprehensive clinical evaluation
Concerted education
Physical exercise
Medical intervention:
 - 1) low-dose, tricyclic, sedative, hypnotic medication & Analgesic level of NSAID
: amitriptyline, cyclobenzaprine, alprazolam: increase serotonin
 - 2) Maintenance regimen: amitriptyline or cyclobenzaprine + ibuprofen

Pain management

1. Botulinum toxin

1) Physiologic aspects:

a) Effects

Clinical effects: delayed a day or two

Maximal effects of functional muscular weakness: 2weeks

Effects last approximately 12 weeks

b) Methods of localizing neuromuscular junctions potentiate the effects of botulinum toxin

c) Mechanism of pain relief are incompletely understood

2) Mechanism of action

Prevent Ach release → inhibit contraction of muscle

Botulinum injection: myofascial trigger point (MTrP)

EMG guidance into end-plate zone

3) Factors responding favorably to botulinum toxin injection

Muscle hypertrophy

Neurogenic or vascular compression

Target muscle isolated from other structures

2. Prolotherapy

1) Definition: Prolotherapy is a simple natural technique that simulates the body to repair the painful area when the natural healing process needs a little assistance

2) The first treatment for subluxation of TMJ Schultz LW, 1937

Canons law of nerve injury: superduration, hyperexcitability increased susceptibility, supereactivity

3) Radiculopathic change

Muscle shortening → decrease ROM

Tendon → enthesopathic change

Ligament shortening and laxity

Osteoporosis and spur change

4) Proprioceptor of muscle

Muscle spindle: fusimotor reflex

Golgitendon organ: musculotendinous organ

5) Shoulder problem: result of C5 radiculopathy

6) IMS mechanism: Relieve denervation supersensitivity

- 7) IMS site: Invisible body
 - Muscle tender point, muscle tendon junction
 - Tenoperiosteal junction, ligament
- 4. Trigger point injection (TPI)
 - 1) Injection site: Tender spot/ trigger point
 - Myotendonal junction, Enthesopathy
 - 2) Preinjection blocks (PIBs)
 - a) Prevents pain caused from TPIs
 - b) Prevents postinjection soreness and pain
 - c) Early mobilization & active limbering exercise
 - d) Desensitization of neuroma
 - e) Prevents pain, hyperalgesia & reflex vasoconstriction
 - 3) Method
 - a) Neurogenic component of the taut band: PIB
 - b) Fibrotic resistance over the core of taut band: needling & injection

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