Chronic Pain Management in Pediatric Patients: A Conservative Approach

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Objectives & Goals

- Identification of early signs in the onset of Chronic Pain Syndromes
- Recognize pertinent physical findings on exam
- Awareness of challenges that are encountered in managing this patient population
- Describe 3 interventions in managing pain in children
Epidemiology

Pediatric
• Estimated to affect 15-20% of children
• (Goodman & McGrath, 1991).

Systematic Review 2011
• Girls > Boys
• Increase with age for most pain types (except for ABD pain)
• Lower socioeconomic status
• Psycho-social varies, anxiety, depression, low self-esteem

• Research suggests prevalence rates of childhood pain have increased over the last several decades.

Common Medical Conditions leading to chronic pain in kids...

- Arthritis
- Sickle cell disease
- Rheumatologic disease
- Inflammatory bowel disease
- Trauma: physical, chemical, thermal, surgical
- CRPS
- Phantom limb pain
- Lower back pain
- HIV/AIDS
- Cancer

Risk for Developing Chronic Pain...

- Common occurrence
  - f:m 30%:19%
  - ages 12-15, peak at 14
- Multiple sites
  - 50%
  - HA and abdominal pain (25%)
- Sex
  - Female – 6:1 ratio
- Age
  - < 5 years – lowest risk
  - > 12 years – highest risk
- Location
  - Lower extremity >> Upper extremity
- Type
  - Boys: back and limb pain
  - Girls: headache and abdominal pain

Classification of Pain

- Nociceptive
- Neuropathic
- Mixed
Terms

- Causalgia
- Reflex Sympathetic Dystrophy
- Complex Regional Pain Syndrome
- Diffuse Amplified Pain syndrome
Work-up

History
PMHX
Family HX

Physical exam
Vitals
Pain Assessment

Studies
Radiological Laboratory

Differential diagnosis

Treatment
Case Presentation

- RM is a 13y.o. female who presented to the ER in October, 2013
- L ankle injury after jumping off a desk. Recommendation: walking cast
- November 11, 2013 cast removal +increasing pain, +allodynia, swelling, and inability to move the left leg.
- Repeat x-ray that showed spotty demineralization
- January of 2014 physical therapy 1-2 times a week (improvement)
- PMHx:
  - 2012-Left lateral malleolus, the talus, calcaneus, metatarsals, and other tarsal bones
  - 2012-Salter –Harris type 1 fracture at the proximal phalanx of the thumb; Right wrist fracture while playing on the playground at age 9yrs; Buckle fractures B Upper Extremities (falling off playground equipment) at 3 yrs of age.
Symptoms

• Sensory
  • Allodynia
  • Hyperalgesia

• Motor
  • Atrophy

• Weakness
  • Contractures
  • Dystonia
Symptoms

• Vasomotor
  • Hot
  • Cold

• Trophic
  • Skin
  • Texture/Appearance

• Hair/Nails
Work-up

• Radiological
  • X rays
  • MRI
  • Triple phase bone scans
  • EMG
  • Thermography
  • DEXA
Work up
Laboratory Studies

• Inflammatory
  • CBC
  • ESR
  • CRP

• Metabolic
  • Vitamin D SCREEN
  • TFT’s
MAGIC PILL

- Physician
- Pharmacological
- Psychological
- Integrative Medicine
- Rehabilitation
- Educational
- Nutrition
Non-Opioid Pharmacological Options

Membrane Stabilizers
- Gabapentin
- Pregabalin
- Carbamazepine
- Valproic acid

Antidepressants
- Amitriptyline
- Nortriptyline
- Cymbalta
- Duloxitene (SNRI)

Muscle Relaxants
- Baclofen
- Diazepam
- Benzodiazepines

Other Options
- Melatonin
- Bisphosphonates
Therapeutic Options

**Education**

- **Rehabilitation**
  - Functional Restoration
  - Aquatic Therapy
  - Physical Therapy
  - Occupational Therapy

- **Behavioral Health**
  - Cognitive Behavioral Therapy
  - Biofeedback
  - Guided Visual Imagery

- **Integrative Medicine**
  - Acupuncture
  - Myofascial
  - Art, Music, & Dance
  - Mediation
  - Nutrition
Impact on Child

• 30-68% - daily life restrictions
• 90% less sports participation
• Strained peer relationships
• 50% - sleep difficulties
• Potential for permanent alteration of child’s development and future role functioning

• Academic
  • Poor performance
  • Frequent school absence
3 Stages of CRPS

• Acute
• Dystrophic
• Atrophic
Options for Therapy

**Recognize (now FREE in App Store)**

Recognize is a programme developed by NEURO ORTHOPAEDIC INSTITUTE (AUSTRALASIA) to help train left/right discrimination as part of a comprehensive rehabilitation programme. It's available for a short time as a free application for Iphones and Ipads. It will later be available as an android application.
Options for Therapy

Mirror Therapy
Acupuncture