Chronic Pain

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Definition

Pain (from ancient Greek ποινή - poine) is defined by the International Association for the Study of Pain (IASP) as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”.

Sources of pain

Pain may originate from four sources:
1. stimulation of a pain nerve sensor at the end of a nerve,
2. actual damage to a pain nerve,
3. damage in the brain where the nerve travels,
4. and/or psychogenic causes that originate in the brain but the mechanism is not understood.

Definition: chronic pain

• Chronic pain was originally defined as pain that has lasted 6 months or longer. More recently it has been defined as pain that persists longer than the temporal course of natural healing, associated with a particular type of injury or disease process.

• Some definitions: longer than 3 months

Difference between acute and chronic pain

Time
Acute and chronic pain are often separated by the artificial time limit of 3 months. In reality, they are part of a continuum.

Chronic pain is better defined as pain from continuing disease or pain that continues beyond the time expected for normal healing. Other characteristics such as pain intensity, pain quality etc. don’t differ substantially. (David A Conn: Assessment of acute and chronic pain. Anaesthesia & intensive care medicine. 2005)

Dimensionality
Acute pain is usually short-lived and of known origin.

Chronic pain is often of longer duration, of unknown origin and has been difficult to treat effectively. In many cases, accurate information has been lacking and the patient and family will be fearful of the cause, prognosis, treatments and the effect on work, family life and earning capacity.

Therefore, psychological factors can play a larger part in the presentation.

Severe distress rather that severe pain is a common reason for referral to a specialist. For these reasons, multidimensional assessment tools are more commonly used in the chronic setting than in the acute. (David A Conn: Assessment of acute and chronic pain. Anaesthesia & intensive care medicine. 2005)
Case No 1

TMJ/TMD PATIENT HISTORY CASE STUDY

HISTORY OF A TYPICAL TMD PATIENT

TM is a 44-year-old white female with a history of having been in an automobile accident in which her car hit a tree. She did not lose consciousness, but was experiencing intermittent jaw pain, left joint pain and clicking, both of which had not been present before the accident. She was taken to a local hospital where a cranial nerve screening exam was performed, neck X-rays were taken, Advil prescribed and then she was discharged.

Following the accident, TM saw her primary care physician who examined her without finding, except new onset jaw pain and TM joint pain and clicking. She was referred to her family dentist who did not treat TMJ and referred her to an experienced TMD expert.

The TMD expert diagnosed TM with left TM joint synovitis, left TM joint anterior disc displacement with reduction, myofascial pain localized in the muscles of mastication most severely in the left masseter muscle. A TMD appliance to be worn day and night was made and 60% pain relief was achieved within 3 weeks. TM was then referred for physical therapy for myofascial release and the dentist performed two trigger point injections in the masseter muscle. Within 6 months the pain was 90% alleviated with occasional exacerbations, a determination was made that TM achieved a medical endpoint, and the TMD appliance was used as at night only. Although there was 90% pain relief, TM was satisfied with treatment and had no trouble adjusting to minor intermittent pain.

(http://www.tmj-dentist-boston.com/tmj/tmd_casestudy.html)

Case No 2

TJ is a 33-year-old white female hit in left posterior jaw by a baseball while watching her son pitching in a little league baseball game. Within 24 hours, she experienced an increasing headache with pounding pain from the back of the neck to behind the eyes. She felt intense jaw pain, jaw pain, difficulty opening the jaw as well as nausea and vomiting. She was taken to a local emergency room where a neurological exam was performed along with neck X-rays, and an MRI of the brain. The preliminary diagnosis by the emergency room physician was migraine and whiplash and possibly TMD. She was discharged wearing a neck collar and a prescription for naprosyn and advice to see her primary care physician and her dentist.

Because of the severity of the jaw pain TJ consulted first with her dentist who then referred her to an oral surgeon. Her chief complaint when presenting to the surgeon was severe jaw pain, headache, neckache and limited ability to open the jaw. Because of a clinical impression of a left disc displacement, the surgeon ordered an arthrotomogram that confirmed the disc displacement. The surgeon then ordered an appliance, physical therapy, and gave her a prescription for Valium. However, these treatments made her worse.

Because after 4 months of conservative treatment TJ was becoming impatient and irritable a new repositioning appliance was made, but this too made her worse. Then, once again, in response to TJ's desperation an arthroscopy which caused a major intensification of pain. At this point TJ's spouse called the surgeon to say that TJ was becoming less able to care for their children and was very depressed so as a last resort open joint surgery was performed.

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### Quality of life

**Extrinsic factors**
- Environment
- Society...

**Intrinsic factors**
- Personality
- Behavior...

**Oral Health-related QoL**

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**Conceptual model**

- Disease
- Impairment/degenerative joint disease
- Discomfort/Pain
- Functional Limitation
- Disability
- Handicap

*Locke, 1988 – adaptation of WHO model of impairment, disability, and handicap*

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**Health-related Quality of Life**

It is defined as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.

It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationships to salient features of their environment." (WHOQOL 1993)

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**Examining the Chronic Pain Patient**

Diagnosis and classification of the patient in two dimensions

1. Physical findings
2. Psychosocial findings (assessment of TMD-pain and related parafunctional behaviors, psychological distress and psychosocial dysfunction)
Dimensions of TMD assessment – interplay between structure and pain

Axis I: Clinical TMD Conditions (physical diagnoses)
- Pain site
- Mandibular range of motion and associated pain
- TMJ sounds during all jaw excursions
- TMJ imaging as required

Clinical findings from this examination yield algorithm diagnoses of the most common forms of TMD, including multiple diagnoses, which are allowed.

Example: Temporomandibular Disorders

Research Diagnostic Criteria for Temporomandibular Disorders

The RDC/TMD clinical examination involves clinical assessment of the following TMD signs and symptoms:
- Pain site
- Mandibular range of motion and associated pain
- TMJ sounds during all jaw excursions
- TMJ imaging as required

Clinical findings from this examination yield algorithm diagnoses of the most common forms of TMD, including multiple diagnoses, which are allowed.

Current TMD classification using Research Diagnostic Criteria for Temporomandibular Disorders (Dworkin and LeResche, 1992)

Axis I: Clinical TMD Conditions (physical diagnoses)
- Structural diagnoses
  - Disc displacement
- Pain diagnoses
  - Osteoarthritis
  - Muscle pain
  - Joint pain

Axis II: Pain-Related Disability and Psychological Status
- Depression
- Somatization
- Jaw disability
- Graded Chronic Pain

http://symptomresearch.nih.gov/chapter_22/sec7/csd/7pg4.htm

Axis I assessment

Pan

Axis I assessment
Example: Temporomandibular Disorders

The RDC/TMD system groups the most common forms of TMD into three diagnostic categories and allows multiple diagnoses to be made for a given patient. The RDC/TMD diagnostic groups are:

**Group I. Muscle Disorders**
- Myofascial pain
- Myofascial pain with limited opening

**Group II. Disc Displacements**
- Disc Displacement with reduction
- Disc Displacement without reduction, with limited opening
- Disc Displacement without reduction, without limited opening

**Group III. Arthralgia, Arthritis, Arthrosis**
- Arthralgia
- Osteoarthritis of the TMJ
- Osteoarthritis of the TMJ

Orofacial Pain classification:
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Current TMD classification using Research Diagnostic Criteria for Temporomandibular Disorders (Dworkin and LeResche, 1992)

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RDC/TMD Axis II Assessment (Psychosocial Assessment)
- Demographics
- Self-reported pain characteristics
- Parafunctional jaw behaviors (i.e., maladaptive use of jaw muscles such as clenching or grinding the teeth)
- Psychological status, including depression and somatization
- Psychosocial functioning reflecting the severity and impact of TMD on interference with usual functioning at home, work, or school and incorporating disability days (loss of work days) due to TMD pain, assessed through the Graded Chronic Pain Scale.

Graded Chronic Pain Status

7. How would you rate your daily pain on a 0 to 10 scale at the present time, that is right now, where 0 is "no pain" and 10 is "pain as bad as could be"?
   - None: 0
   - 1-3: 1-3
   - 4-6: 4-6
   - 7-9: 7-9
   - 10: 10

8. Are you able to do normal activities (i.e., work, hobbies, social activities)?
   - Yes: 1
   - No: 0

9. Are you able to carry on normal activities (i.e., work, hobbies, social activities)?
   - Yes: 1
   - No: 0

10. Are you able to work full or part-time at your present job or school, or at home, or are you retired?
    - Yes: 1
    - No: 0

11. Are you able to carry on normal activities (i.e., work, hobbies, social activities)?
    - Yes: 1
    - No: 0

12. Are you able to carry on normal activities (i.e., work, hobbies, social activities)?
    - Yes: 1
    - No: 0

Jaw disability

19. What activities do you have with jaw problems present or nonexistent?
   - a. Brushing
      - No: 0
      - Yes: 1
   - b. Eating hard foods
      - No: 0
      - Yes: 1
   - c. Eating soft foods
      - No: 0
      - Yes: 1
   - d. Smiling
      - No: 0
      - Yes: 1

Assessment of depression

20. For the past month, how much have you been bothered by...
   - a. Feeling down
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - b. Difficulty doing things
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - c. Appetite or weight change
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - d. Difficulty sleeping
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - e. Feelings of hopelessness
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - f. Feelings of guilt
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - g. Difficulty concentrating
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
   - h. Feelings of worthlessness
      - None: 0
      - 1-3: 1
      - 4-6: 2
      - 7-9: 3
      - 10: 4
Treatment of Common Chronic Pain Disorders

- Medication
- Physical therapy + splint treatment (for TMD)
- Psychosocial intervention & behavioral therapy
Systematic review: Stabilization splints


Aim: Whether the evidence is sufficient to judge occlusal appliances as being efficacious for the management of localized masticatory myalgia, arthralgia or both.

Methods: 4 placebo-controlled studies, several randomized wait-list controlled studies and several random-assignment treatment-comparison studies.

Conclusion: Considering all of the available data (pro and con), the authors conclude that the use of occlusal appliances in managing localized masticatory myalgia, arthralgia or both is sufficiently supported by evidence in the literature.

Review: Physical therapy


Some forms of physical therapy are used relatively frequently in the treatment of chronic musculoskeletal pain conditions, including the temporomandibular disorders. We found evidence that most patients being treated for most chronic musculoskeletal pain seem to do better with most forms of therapy. However, ...there is little evidence that these methods of management cause long-lasting reductions in signs and symptoms ...although evidence is beginning to accumulate that exercise programs designed to improve physical fitness have beneficial effects on chronic pain and disability of the musculoskeletal system.

Systematic review: Pharmacologic interventions


AIMS: SR to assess the pain-relieving effect and safety of pharmacologic interventions in the treatment of chronic TMD, including rheumatoid arthritis (RA), as well as atypical facial pain (AFP), and BMS.

METHODS: RCTs

RESULTS: 11 studies: amitriptyline was effective in 1 study and benzodiazepine in 2 studies; the effect in 1 of the benzodiazepine studies was improved when ibuprofen was also given. One study showed that intra-articular injection with glucocorticoid relieved the pain of RA of the TMJ. In 1 study, a combination of paracetamol, codeine, and doxylamine was effective in reducing TMD pain. No effective pharmacologic treatment was found for BMS. Only minor adverse effects were reported in the studies.

CONCLUSION: The common use of analgesics in TMD, AFP, and BMS is not supported by scientific evidence.

Psychological and behavioral interventions


Take home message for pain assessment

Axis I: Clinical Conditions (physical diagnoses)

Axis II: Pain-Related Disability and Psychological Status