Chronic Facet Pain

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Definition

Chronic lumbar facet pain is described as lower back pain for 12 or more weeks with pathologic changes of the lumbar facet joints [1]. The lumbar facet joints (zygapophyseal, z-joints, apophyseal) are true synovial joints, formed between the posterolateral articular processes of two adjacent vertebrae (Fig. 94.1). Each vertebra has four facet joints. These joints can hold 1–1.5 ml of fluid and consist of a synovial membrane, hyaline cartilage surfaces, and a fibrous capsule [3].

In the lumbar spine, the adjacent superior and inferior articular processes interlock, causing limitation in range of motion, namely, with excessive rotation and flexion, preventing damage to the joint from anterior shear forces [4]. Facet joints can become osteoarthritic with normal wear and tear, damaged from repetitive strain, dislocated, fractured, and rendered unstable as a result of trauma, all resulting in chronic lumbar facet pain [5].

Diagnosis

Patients present with nonspecific, achy, deep low back pain – typically over a localized unilateral or bilateral paravertebral area. Twisting, lateral bending, hyperextension, and applying torsional load are exacerbating factors. It is worse in the morning and improved with repetitive motion [6]. Interestingly, lumbar facet pain is not exacerbated by increased intra-abdominal pressure, and if the patient complains of worsening of pain with coughing, laughing, or a Valsalva maneuver, it is unlikely to be related to the facet joints.

Fluoroscopically guided medial branch nerve injections, also called medial branch blocks, can be diagnostic and therapeutic if the patient experiences pain relief. More definitive treatments can be used following successful medial branch block [7].

Differential Diagnosis for Chronic Mechanical Low Back Pain

- Lumbar spasm
- Lumbar strain
- Degenerative disc disease
- Spondylolisthesis
- Herniated disc
- Spinal stenosis
- Spondylolysis
- Piriformis syndrome
- Sacroiliac joint dysfunction/sacroiliitis

Physical Exam

- Overall, patients with pain related to chronic lumbar facet pathology typically have nonspecific findings on physical exam.
- On inspection, patients with chronic lumbar facet arthropathy may present with flattening of lumbar lordosis or loss of curvature of the lumbar spine.
- Palpation along the paravertebral areas and over the transverse processes may produce point tenderness.
- The examiner should assess range of motion with flexion, extension, lateral bending, and rotation of the lumbar

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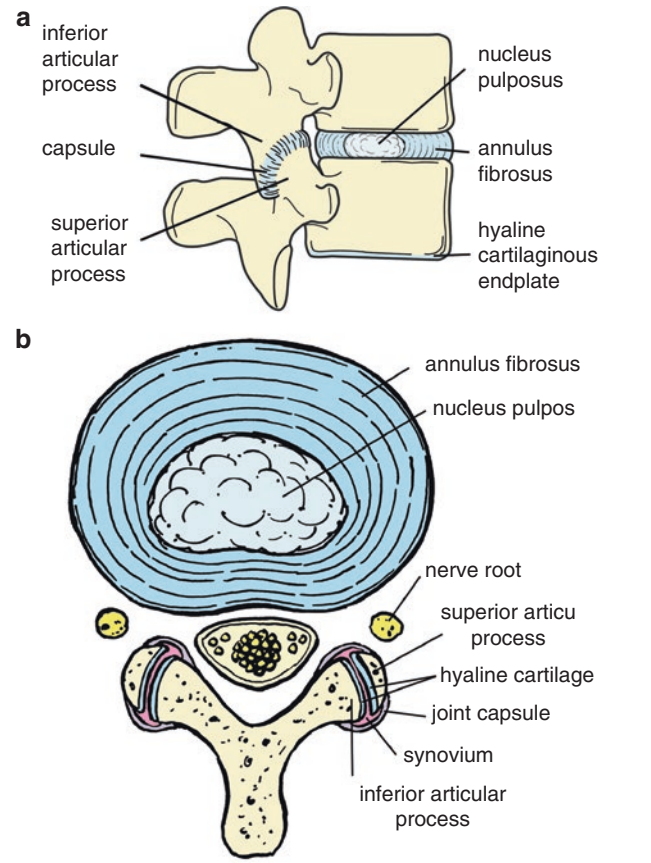

Fig. 94.1 Anatomy of the facet joint. (**a**) Lateral drawing showing the superior and inferior articular processes forming a facet joint. (**b**) Axial drawing showing the intervertebral disc in relation to the facet joint with associated cartilage and capsules. (**c**) Axial CT scan of a lumbar vertebral body with arrows pointing to the facet joints (With kind permission from Mathis [2])

spine. Pain may be elicited with hyperextension or rotation.

- Sensory exam, manual muscle strength testing, and muscle stretch reflexes are normal in cases of facet arthropathy. The straight leg raise test will be normal as well.
- Kemp's test can aid in the diagnosis of facet-mediated pain. In this test, the patient is asked to extend and rotate the spinal region of concern, and reproduction of pain indicates a positive test and the possibility of facet joint pathology [6].

Imaging

- Radiologic examination has limited benefit when attempting to diagnose facet-mediated pain [8].
- X-rays are the initial step in the workup of low back pain and are not generally recommended in the first month of symptoms, unless a fracture is suspected [9].
- Similar to X-rays, there is poor correlation between CT scan pathology in facet joints with true facet joint-mediated pain. There is a 40–85% prevalence rate of facet pathology on CT scans. This rate increases significantly with age and regardless of associated symptoms [8].
- An MRI is generally not indicated when evaluating low back pain that is non-radicular in nature.

Treatment

- First-line treatment for acute exacerbations of chronic low back pain includes short courses of nonopioid analgesic medications [10]. NSAIDs have been found to be effective for short-term symptom relief for these patients [11].
- Short-acting opioids should not be used routinely in patients with chronic low back pain. Short-term use for severe acute exacerbations and occasionally in those unresponsive to alternative medication can be justified.
- Long-acting opioids can be considered for those requiring opioid-level control for greater than 1–2 weeks [12]. Facilitation of participation in an active rehabilitation program may also justify long-term opioid use.
- Physical rehabilitation includes strengthening and conditioning maneuvers performed with a flexed trunk, as facet-mediated pain is typically worse with extension. Strengthening exercises focus on neutral postures and pelvic tilt in order to decrease facet joint compression [13].
- Acupuncture has not shown consistent benefit compared to sham acupuncture [14].

- Randomized clinical trials have found limited to no advantage of corticosteroid injections when compared to saline injections to the facet joints [15, 16].
- Although medial branch blocks appear to be useful for diagnostic purposes, there is controversy in regard to its use for treatment [7].
- Medial branch neurotomy through radiofrequency ablation destroys neural innervation of the facet joint, resulting in prolonged symptomatic relief, and is emerging as the standard therapy for this type of low back pain [7].

When to Refer and to Whom

- For an individualized therapy program tailored to the patient's specific flexibility and strength imbalances, refer to a physiatrist.
- Failure of conservative measures to improve patient's symptoms and for evaluation for interventional procedures, referral to pain medicine is appropriate.
- Any serious symptoms in association with lower back pain such as progressive neurologic deficits (bowel and bladder dysfunction, saddle anesthesia, and worsening weakness and numbness) should prompt immediate surgical referral.

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