

Anatomy: Facet Joint Disease

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One of the most ignored joints in the body, the facet joint, plays a key role in allowing for smooth spine motion. Each spine vertebra communicates with each other with four small arm-like extensions or articulating processes (Figure 1); two pointing up (superior process) and two down (inferior process).

The inferior process of the vertebra communicates with the superior process of the vertebra below and the superior process communicates with the vertebra above.

The joint the two articulating processes form is called a facet joint. Together with a disc that sits between the bodies of the two vertebra they form a three joint complex (vertebral body-disc-vertebral body joint and two facet joints). The inner surface of the facet joint serves as an outer wall of an opening or a foramen for a spinal nerve, through which it exits. The disc and the junction of the two vertebral bodies serve as an inner wall of this foramen. The facet joint is surrounded by a joint capsule just like any other joint. The capsule is lined with lining that produces a lubricating fluid, synovium.

The capsule is provided sensation by two nerve branches.

Problems seen with facet joints:

1. Misalignment:

Facets joints are a common source of pain. They can be painful when they are misaligned or damaged. They play a key role in preventing excessive motion between two vertebra.

Misalignment can occur as a compensation for a lack of or too much motion elsewhere. This joint malfunction does not occur on a visually apparent level.

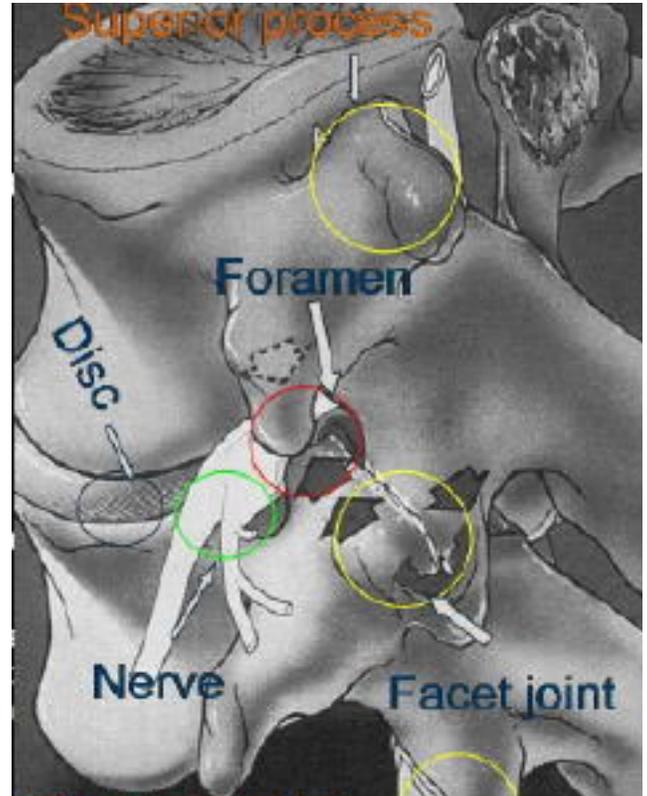
In other words, it is not a dislocation that can be palpated as an increased space between two bones, and it is not evident on x-rays. The defect occurs within an intact joint capsule with one end sitting slightly off the motion axis of the other.

Repeated over rotation into one side can “jam” the joint and prevent it from allowing motion to the opposite side. Sudden motion such as a bend or a twist can also create a misalignment and a subsequent restriction.

2. Spinal Stenosis

Often the spine is exposed to excessive stress either due to hard labor or by a limiting condition elsewhere in the body. As a response to repeated loads the facet joint thickens and become larger and more irregular in size.

This response is likely a compensatory strategy where the thickening is an attempt to stabilize the joint. The unfortunate consequence of this compensation is that the nerve opening or the foramen becomes smaller and may eventually impinge on the exiting nerve (Figure 1). This condition is called Spinal Stenosis.



Anatomy: Facet Joint Disease (continued)

3. Direct Trauma

In its attempt to control spine motion, the facet joint can frequently be injured in a traumatic event such as a fall or a motor vehicle accident. Studies show that the damage to the joint can exist without evidence of injury on X-rays, MRIs, or CAT scans.

Symptoms:

The pain is usually central in the spine. A twisting spine motion in certain directions often reproduces the pain. In the lower back the facet is stressed upon rising from a bent over position, twisting, and bending backwards. The pain is felt as a sharp, catching sensation centrally with a dull ache often radiating down. This referred pain can be felt some distance away from the misaligned or injured facet joint and can fool an unwary practitioner. Specific patterns of pain referral have been mapped out for neck and low back facets.

Treatment:

Can include: 1.Manipulation 2.Functional spine rehabilitation 3.Traction 4.X-ray guided steroid injections 5.Temporary destruction of nerves that provide sensation to the facet joint and

1. Manipulation can be performed by a chiropractor, osteopathic physician or any medical practitioner trained in manual medicine.

2. Once the facet joint has been realigned, it is crucial to initiate a functional rehabilitation program that would train the muscles to maintain its alignment.

Factors that contributed to the misalignment, such as a restricted joint or either a weak or tight group of muscles above or below the injured facet, also have to be corrected in order to avoid recurrence.

3. Traction is often helpful in spinal stenosis of the cervical spine and can be applied by an experienced physical therapist.

4. Injections are best done by a trained physician who utilizes X-ray guidance to locate the joint in question and confirms position of the needle with a special dye visible on X-ray before injecting a steroid solution.

5. Destruction of the nerves to the joint can be performed by physicians trained in this technique and can relieve pain for up to six months.

Risk factors:

For non-traumatic facet injury the risk factors include poor flexibility and poor strength of supporting low back and pelvic musculature. Both of these factors can lead to misalignment and in the long term deformity.

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