

# **SYNOVIAL CYST**

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## ***What is a synovial cyst?***

A synovial cyst is a relatively uncommon cause of spinal stenosis in the spine. It is a benign (non-cancerous) condition and the symptoms and level of pain and discomfort can remain stable for many years. A synovial cyst is a fluid-filled sac that develops as a result of degeneration of the joints in the spine. Since it develops as a result of the aging process, it is rarely seen in an individual less than 45 years of age and is most commonly seen in a person over the age of 65. The cyst causes compression of the nerves in the spinal canal and this causes the patient to experience symptoms of spinal stenosis. Spinal stenosis is defined as narrowing of the space for the spinal nerves.

## ***What causes a synovial cyst to form?***

As mentioned, a synovial cyst develops as a result of degeneration of the facet joints in the spine. The facet joint in the spine is like any other joint in the body. It is composed of two opposing surfaces that are covered with cartilage. The cartilage is the smooth and slippery surface that allows a joint to move. A thick capsule covers the entire joint and within this is the synovium of the joint. The synovium is a thin film of tissue that generates fluid within the joint and helps to lubricate the joint. Excess collection of synovial fluid results in the formation of a fluid-filled cyst, called a synovial cyst. The cyst is more likely to occur wherever there is motion in the spine. Thus, it is more common in the lower three segments of the lumbar spine, or the lower part of your back.

## ***What kind of symptoms does a synovial cyst cause?***

Spinal stenosis caused by the cyst can cause low back pain, radiating pain and numbness into the buttock, thigh, or leg, and weakness of the muscles in these areas. Typically, the pain is less or nonexistent when the patient is sitting versus standing or walking. This is because in a seated position the spinal canal becomes larger and there is not as much pressure on the spinal nerves. When standing upright or walking, however, the canal becomes narrower and thus the patient may develop the above symptoms.

## ***How is the cyst diagnosed?***

A synovial cyst is best visualized on an MRI scan of the spine. It shows up as a bright signal on the T2 portion of the scan. It often has the same appearance as the cerebrospinal fluid that surrounds the nerves in your spinal canal.

Plain X-rays of the spine, including flexion/extension (bending) X-rays of the spine, are also performed to rule out any associated instability of the spine. It is very important to check for spinal instability as the involved joint often has an accompanying degenerative spondylolisthesis. A spondylolisthesis is defined as a slippage of one vertebrae over another and it indicates that the joint is unstable or incompetent.

## ***How are the symptoms from a synovial cyst treated?***

There are four main treatment options available:

- 1) Physical therapy and medications
- 2) Injections
- 3) Microdecompression
- 4) Decompression with Fusion

### ***Physical Therapy and Medications***

If the symptoms are mild then anti-inflammatory medications and narcotics may be all that is needed to treat the problem. The patient may also do activity modification since the symptoms are fewer in the sitting position. For example, the patient is instructed to ride a stationary bicycle instead of walking as a form of exercise. Finally, physical therapy is usually prescribed to strengthen the muscles that surround the involved joint.

### ***Injections***

There are two main types of injections: 1) Aspiration of the Cyst Cavity followed by injection of steroid into the involved facet joint or 2) Epidural Steroid injection into the spinal canal. Since the pressure caused by the cyst on the nerves is the main cause of the complaints, it is occasionally safe to aspirate or suck up the fluid from the cyst cavity. This is usually followed by injection of steroid into the facet joint to decrease the chance or recurrence of the cyst. This is a technically demanding procedure and is only feasible in a few cases of large cysts. The second injection is more commonly performed and is technically easier. The goal of an epidural injection is to surround the cyst cavity with a steroid to decrease the inflammation around the compressed nerves. It does not reduce the size of the cyst but there may be less pain due to the anti-inflammatory effect of the injection.

### ***Microdecompression***

Surgery is often required when a patient is afflicted with this problem. If there is no associated spondylolisthesis (slip) of the vertebrae then a microdecompression of the nerve root with excision of the cyst is performed. This is the same approach as the one used to remove a herniated disc in the lumbar spine. It is a minimally invasive surgery with a relatively quick recovery. However, since the joint pathology that caused the original cyst is still present, the cyst can recur and cause symptoms at a later date.

### ***Decompression with Fusion***

This is the recommended treatment for cysts associated with spinal instability (spondylolisthesis). A fusion of the spine is defined as a deliberate surgical union of two vertebrae to prevent motion at the facet joints. Bone graft, bone graft substitutes, and metallic hardware are often used to achieve a fusion. A successful fusion prevents motion of the joints. Without motion the cyst does not recur.

### ***How successful are these procedures?***

The injections are associated with a high rate of recurrence. They may, however, give significant temporary relief of symptoms. The microdecompression usually resolves all lower extremity complaints but is also associated with a recurrence rate. The recurrence of the cyst after a microdecompression alone is less than 20% in my practice. A decompression followed by a fusion is a permanent solution to the problem.