Failed Back Surgery Syndrome:

Pain That Persists after Surgery in a Subset of Patients

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Pain may be reduced but still present. Yet the situation is never hopeless. Thorough, timely care can help.

Failed Back Surgery Syndrome (or FBSS) refers to patients with persistent or new pain after spinal surgery for back or leg pain. The spine surgery may have involved removing bone (laminectomy or foraminotomy) or disc material (discectomy) or a fusion of the spinal segment or segments (instrumented or bony fusion, sometimes referred to as a PLIF or posterior lumbar interbody fusion or as an ALIF or anterior lumbar interbody fusion).

The pain condition does not have to be worse after surgery to attract the term FBSS, it can be reduced but still present and qualify for this term. The term does not imply that something has gone wrong with surgery or that it is somehow the surgeon's fault that pain has not completely gone or that pain gets worse over time. It merely refers to a subset of patients (as some do very well indeed with surgery) who have persistent pain symptoms after spine surgery.

Cause is a combination of factors

It is felt that there is probably more than one reason why this occurs and it is often a mix of persistent nerve pain, persistent tissue pain (often from the disc) and persistent muscle spasm all wrapped in one. One of the problems after surgery can be excessive inflammatory healing after the operation and the subsequent development of fibrotic tissue in the epidural space, often enveloping the most recently decompressed spinal nerve roots.

This typically occurs three months after surgery. Patients may report their symptoms getting worse some 3 – 6 months after surgery for example.

It is often an emotionally difficult time for a patient who has pinned high hopes on significant improvement to adapt to a different outcome and a low mood or anxiety can easily occur and make coping with the pain more difficult. If narcotic analgesics (opioids or opiate medications) are relied on too heavily they can make matters worse with their side effects, including tolerance to the drug and dependence on the drug becoming problematic.

One of the keys to treatment is to work closely in follow-up with your surgeon to exclude any specific complication such as infection, reherniation of the disc, or hematoma formation and to start planning some coping skills to get you through the early period of further treatment.

Often you will be referred to a pain specialist to look at the big picture of your pain and you and how the situation can best be helped if no clear benefit to further surgery exists (and this is often the case). Typically appropriate medication will be trialled to see if the response warrants continuing with the medication.

Sometimes injections or blocks or radiofrequency neurotomies (heating up tiny nerve endings) are used to help reduce

pain from 6 – 12 months to allow a window of opportunity to get the muscles of the spine physically fit again and the individual physically fit again. This can require some structured exercise to be undertaken despite some pain being experienced. It is important to remember that experiencing pain doesn't necessarily mean further tissue damage and in FBSS, this is mostly the case.

Device acts like a pacemaker that regulates pain transmission

If at the end of the day pain is persistent, disabling and hasn't responded to standard treatment for FBSS then a neuromodulation treatment option may be considered by the pain physician or surgeon. This is a device that consists of a lead or leads with small electrical contact points on the lead that when placed close to nerves (such as the spinal cord when placed in the epidural space, or peripheral nerves when placed under the skin) can stimulate them in a therapeutic fashion.

The treatment either produces a pleasant tingling, buzzing sensation that reduces the perception of the underlying pain or stimulates the nerves at a level that cannot be felt but still reduces the pain experience. A small implantable battery is connected to the lead and placed under the skin in a suitable location. The system operates much like a pacemaker for nerves but rather than regulating the heartbeat it regulates pain transmission.

There are a number of such products to choose from and your doctor would guide you as to the device most suitable for you.

One of the benefits of this treatment is that an external trial can be undertaken whereby just the lead is placed next to the relevant nerve or nerves and the battery can be worn on the belt for a trial of the treatment for 3 – 21 days to see what benefit an individual patient may derive from this therapy.

Obviously it is important to be as active as possible before and after this therapy is used to maximally return that individual to better health. The more pain management options you can master to use in conjunction with a spinal cord stimulator or peripheral nerve stimulator the better your results may be.

Making pain more bearable

It is important to realize that these treatments do not take all the pain away but they do make the pain much more bearable in the majority of patients. Many patients will be able to significantly reduce their medication and this allows a large reduction in medication side effects, which often allows patients to think more clearly.

Two landmark studies published several years ago show that spinal cord stimulation offers better long-term pain relief at lower annualised cost than either repeat spinal surgery or optimised non-surgical care. The authors noted that patients with FBSS had had multiple attempts at symptom control that was ineffective or that resulted in a burden of side effects.

Intrathecal therapy option

Some patients will be recommended to undergo intrathecal medication therapy, which is the other neuromodulation treatment option.

This involves placing a small hollow catheter into the fluid around the spinal cord and infusing medication from a small reservoir via an inbuilt computer that is placed in the fat of the abdominal wall.

Again this treatment can be trialled with their implant in place to see if the patient would benefit before deciding on this.

So you see far from it being the end of the road when surgery does not lead to desired outcomes there are other options that have been shown to help patients and reduce their pain.

A Comprehensive Approach

We know that the earlier these are used in the patient's journey with persistent pain the more impressive are the results.

Once patients have had severe unrelenting pain for more than 10 years even these therapies can fail to help.

This is why it is so important to get pain treated early and comprehensively and looking at the whole person's physical and psychological needs. Planning some little goals you want to achieve is one way to mark progress in what otherwise can seem a difficult situation. The situation is never hopeless.

Advances are occurring at a rapid pace in the field of neuromodulation and promise much more therapeutic options to come. Talk to you doctor and make sure that you have your pain plan for managing your persistent pain.

Please note: *This information should not be used as a substitute for medical treatment and advice. Always consult a medical professional about any health-related questions or concerns.*

Further reading

1. Chan, C-W and Peng, P. (2011), Failed Back Surgery Syndrome. Pain Medicine, 12: 577–606.

2. Kumar K et al. Spinal cord stimulation versus conventional medical management for neuropathic pain: a multicentre randomised controlled trial in patients with failed back surgery syndrome. Pain 2007;132:179–188.

3. North RB et al. Spinal cord stimulation versus re-operation in patients with failed back surgery syndrome: an international multicenter randomised controlled trial (EVIDENCE Study). Neuromodulation 2011;14:330–6.

4. North RB et al. Spinal cord stimulation versus repeated lumbosacral spine surgery for chronic pain: a randomised, controlled trial. Neurosurgery 2005;56:98–106.

5. Thomson S, Jacques L. Demographic characteristics of patients with severe neuropathic pain secondary to failed back surgery syndrome (PROCESS study). *Pain Practice* 2009;9:206-214