

Perceiving Parkinson's

Pain In Parkinson's (Day 59)

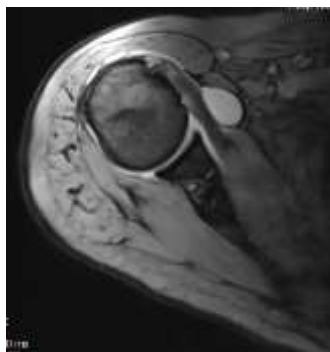
Pain is reported in **over 50%** of people with Parkinson's. This nonmotor symptom is produced by neuron loss in brainstem regions responsible for processing pain, resulting in misinterpreted pain signals, meaning that pain in Parkinson's is **usually from the Parkinson's**, and nothing else. There are five types of pain in Parkinson's - musculoskeletal, radicular-neuritic, dystonic, central, and akathitic.

Musculoskeletal Pain

Musculoskeletal pain in Parkinson's arises from a **muscle or joint** due to physical "wear and tear" from poor postures and awkward movements. It is stiff, aching, or cramping in nature. **Stiffness** can be the initial symptom of the Parkinson's, often in the form of a **frozen shoulder**, but stiffness may also arise in the neck, back, or hips. **Aches** in muscles and joints are especially common in Parkinson's, often in the limbs that display the initial motor symptoms. **Cramps** preferentially affect the muscles of the calves and toes, and tend to be worse at night. With prolonged immobility, **contractures** can even develop in the hands or feet, usually in the form of a clenched fist or curled toes.

To **manage** musculoskeletal pain, x-rays, ultrasounds, and MRI scans plus consults with rheumatology or orthopaedics may be needed. However, since musculoskeletal pain is usually from the Parkinson's, the best treatment approach is the following:

- (1) First, **optimize levodopa cover** - in other words, treat the Parkinson's.
- (2) For pain at night, especially night cramps, **magnesium before bedtime** and **optimizing levodopa cover at night** may be required.
- (3) Further measures include **exercise, physiotherapy, massage, and music therapy**; the observed benefit from relaxing and listening to music is small, but real.



In the Parkinson's frozen shoulder, the MRI may show scar tissue, but it may be normal (as above).

Radicular-Neuritic Pain

Radicular-neuritic pain in Parkinson's arises from a **nerve root or nerve**. In most people it is due to a **protruding disc** irritating a nerve root or nerve, but in Parkinson's there may be no protruding disc and the pain may simply be due to **inadequate dopamine**. The classic presentation of radicular-neuritic pain is **sciatica** - a sharp, lightning-like sensation that radiates down one leg.

To **manage** radicular-neuritic pain, an MRI scan of the spinal nerve roots and nerve conduction studies of the nerves in the arms or legs may be required:

- (1) If a **protruding disc is found**, it is best to employ **neuropathic pain medications** (amitriptyline, nortriptyline, gabapentin) plus **physiotherapy** with a mobility program; rarely, **surgery** is indicated.
- (2) If a **protruding disc is not found**, the pain is secondary to inadequate dopamine and it is best to **optimize levodopa cover** - in other words, treat the Parkinson's.



In Parkinson's with sciatica, the MRI may show a protruding disc (circled), but it may be normal.

Dystonic Pain

Dystonic pain in Parkinson's arises from severe, forceful, sustained twisting or posturing of a **muscle group or body part**. This is not the same as dyskinesia; **dystonia** consists of a sustained contraction and is often painful whereas levodopa-induced **dyskinesia** consists of writhing motions and is not painful. Dystonic pain presents as a sustained contraction or **spasm**. It may occur spontaneously, or it may be triggered by movement. Dystonic pain can affect any part of the body, but it preferentially affects the feet and toes, especially in the form of **toe curling**.

To **manage** dystonic pain, the first step is to determine whether it is worse in the "off" or "on" state:

- (1) In most people, dystonic pain in Parkinson's worsens during the **"off"** state, so the ideal strategy is to **optimize levodopa cover** - in other words, treat the Parkinson's. If this does not work, **exercise** and **botox** therapy may fix the pain.

(2) Rarely, dystonic pain in Parkinson's occurs during the "on" state, often when the levodopa dose is too high, so the ideal strategy is to **reduce the dopaminergic oral medications** and substitute them with a less potent alternative, particularly **amantadine**.

Central Pain

Central pain in Parkinson's is thought to originate within the pain structures of the **brain** itself. It is very rare. The presentation of central pain is usually **bizarre and difficult to describe**, although words such as stabbing, burning, or scalding have been used to describe it. This pain type often shows up in unusual locations, particularly the chest, abdomen, mouth, rectum, and genitalia.

Since central pain is usually worse in the "off" state, the first and best way to **manage** it is to **optimize levodopa cover** - in other words, treat the Parkinson's. If this fails, **neuropathic pain medications** (amitriptyline, nortriptyline, gabapentin) and **narcotics** (codeine, oxycodone) may be successful.

Akathitic Pain

Akathitic pain in Parkinson's arises in severe cases of **akathisia**, which is a feeling of inner restlessness; this pain type strongly overlaps with restless legs syndrome. Since it overlaps with restless legs syndrome, akathitic pain presents as an **extreme form of inner restlessness** associated with uncomfortable crawling, itching, or pulling sensations in the legs.

Fortunately, the **management** of akathitic pain is straightforward as it responds well to **optimizing levodopa cover**, especially at night.

To wrap up, pain in Parkinson's is often from the Parkinson's itself, and nothing else. Thus, the best way to manage pain in Parkinson's is to optimize levodopa cover - in other words, **just treat the Parkinson's**.

Matt (Neurologist, Waikato Hospital).

References

- (1) Fil et al. 2013. Pain in Parkinson disease: A review of the literature. *Parkinsonism and Related Disorders* 19, 285-294.
- (2) Skogar and Løkk. 2016. Pain management in patients with Parkinson's disease: challenges and solutions. *Journal of Multidisciplinary Healthcare* 9, 469-479.
- (3) Ahlskog. 2015. *The New Parkinson's Disease Treatment Book*. Oxford University Press.
- (4) Sveinbjornsdottir. 2016. The clinical symptoms of Parkinson's disease. *Journal of Neurochemistry* 139(Suppl. 1), 318-324.