

Pain Diagnostics and
Interventional Care

301 Ohio River Blvd
Sewickley PA, 15143
Phone number: 412-221-7640



Our Research Coordinator, Zef Leech, and Dr. Provenzano pictured at the 2022 ASRA Conference in Las Vegas, NV.

Mission Statement

To professionally and passionately provide evidence-based medical care for patients with various pain states and to advance the science of pain medicine through research and education.

Vision Statement

To be recognized and celebrated as the gold standard for pain medicine in the greater Pittsburgh region.



Pain Diagnostics
& Interventional Care

Cervical Facet Pain

Background

According to the Global Burden of Disease 2016 study, spine pain is the most common cause of disability for people between the ages of 25-64.

Cervical facet joints are responsible for the ability to bend, twist, and rotate the neck. When there is acute or chronic pain referring from the neck to the shoulder, head, and parascapular regions, the cervical facet joints maybe the culprit.

Cervical facet joints are proposed as the primary source of pain in 25-67% of patients with chronic neck pain. The C2-C3 and C5-C6 joints are the most common cervical facet joints clinically implicated in neck pain.

Interestingly however, C2-C3, C3-C4, and C4-C5 joints are the most likely to display findings of degeneration on diagnostic imaging such as X-ray, MRI, or CT.

Symptoms

The facet joints link vertebrae together. Cervical facet mediated pain can present as neck pain, headache, shoulder pain, and parascapular pain. The pain referral pattern is determined by the joint level that is affected. For example, the C2-C3 facet joint is innervated by the Third Occipital Nerve (TON). Injury to this region is quite common with whiplash

injuries during a motor vehicle, rollercoaster, or skiing accident. Symptoms related to the C2-C3 facet joint often include headache, occipital pain, and pain behind the ears. In comparison, C5-C6 facet joint mediated pain radiates into the lower neck, top of the scapula (shoulder blade), and shoulder.

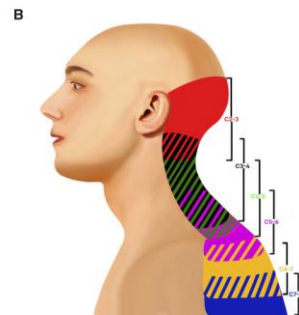
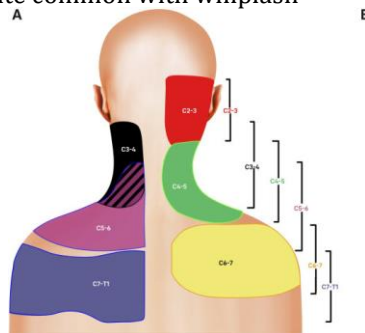
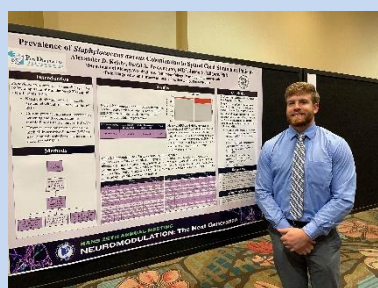


Fig. 2 Hurley et al., 2021



Summer research intern Alex Keith had his research on the prevalence of *S. aureus* colonization with spinal cord stimulation patients recently accepted for publication! The article will soon be published in *Neuromodulation: Technology at the Neural Interface*.

Contact us!

DavidProvenzanoMD.com

Phone: 412-221-7640

Fax: 412-490-9850

301 Ohio River Boulevard
Suite 203
Sewickley, PA
15143

Reference

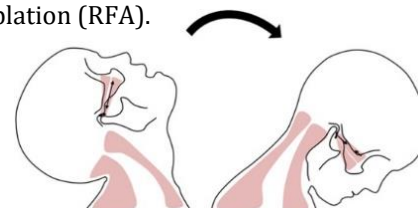
Hurley RW, Adams MCB, Brad M, Bhaskar A, Bhatia A, Chadwick A, Deer TR, Hah J, Hooten WM, Kissoon NR, Lee DW, McCormick Z, Moon JY, Narouze S, Provenzano DA, Schneider BJ, van Ferd M, Van Zundert J, Wallace MS, Wilson SM, Zhao Z, Cohen SP. Consensus practice guidelines on interventions for cervical spine (facet) joint pain from a multispecialty international working group. *Reg Anesth Pain Med.* 2022 Jan;47(1):3-59. Doi: 10.1136/rapm-2021-103031

Diagnosis

Accurate diagnosis of cervical facet mediated pain is conducted through an integrated approach. Identifying cervical facet joints as the likely pain generator is only the first step. Diagnosis of the specific joint(s) within the cervical spine is essential to determining the most effective treatment plan.

Diagnosis is approached using physical examination (i.e., range of motion testing and palpation), imaging, and diagnostic blocks. The reason for a multimodal approach is that individual findings through physical exam or x-ray may not be solely indicative of the involved facet joint. For example, degenerative changes

seen in radiological studies may not always be symptomatic and the presence of findings does not always correlate with clinical symptoms. Diagnostic blocks are used to accurately identify specific joints that are generating a patient's pain. Diagnostic blocks, known as medial branch blocks (MBB) are also a required step before a common interventional procedure known as radiofrequency ablation (RFA).



Treatment

Conservative management of cervical facet joint pain involves physical therapy, chiropractic care, and anti-inflammatories. These conservative options are the first line of treatment because they can assist the recovery process of minor aches and pains. Many people get better without the need for any further treatment options. Internationally agreed-upon guidelines published in 2021 indicates that pain decreases within 1-2 months of onset in most subjects. In a 12-month timeframe, it was found that 74% of patient had significant improvement of symptoms.

Apart from conservative treatment options, there are also interventional procedures such as prognostic medial

branch blocks (MBB) and radiofrequency ablation (RFA). MBBs are prognostic blocks which help the physician identify the specific facet joints that are generating pain. Two diagnostic block rounds may be conducted to lower the rate of false-positive responses. The pain relief from the MBB is usually transient because of the medication used. Once the joints are identified, RFA can be used to stop the nerve from sending pain signals. Pain relief from RFA usually lasts 6-18 months and can be repeated.

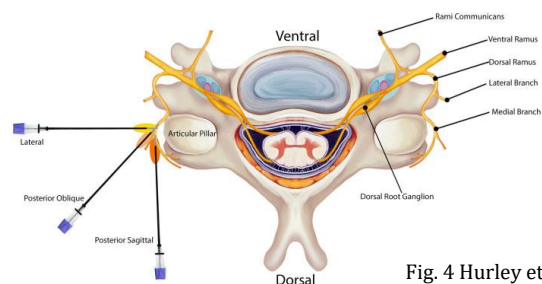


Fig. 4 Hurley et al., 2021

Interested in Clinical Research?

Pain Diagnostics and Interventional Care's Clinical Research Department is driven to further the science of Pain Medicine to bring our patients the most up to date and effective treatment options. If you are interested in learning more, give us a call or look at our research section on our website DavidProvenzanoMD.com.