

ANKIT Thank you, Dr. Fury, for holding such a great seminar. So we've heard earlier on today about different spinal
MAHESHWARI: pathologies. Of course, back pain is a very common cause for the office visit in the primary care setting. We see in our practice in pain management amongst several other chronic pain conditions, back pain and spine pain, general is the commonest including neck and lower back.

All right, so briefly in the next 10 minutes I'd like to cover basics of the type of pain to get an understanding of how to approach the patient with pain. And then what treatments we offer in the pain medicine department, interventional treatments that you can consider for your patients. Pain of course, is acute after an acute injury, such as someone presenting with this nuance of sciatica or a herniated disk.

Chronic pain typically defined as pain that outlasts the typical duration of healing after surgery, for example. In degenerative conditions, pain that is usually more than three months is considered chronic. And then there could be acute and chronic pain people who are living with chronic pain, but then get acute exacerbations, such as pancreatitis, for example. Or an episode of sciatica in someone who has chronic low back pain.

Mechanistically, pain could be neuropathic, primarily mediated by an affliction of the nerves by direct trauma or injury to the nerves or dysfunction of the nerves. It could be nociceptive, such as inflammatory pain, a pain related to osteoarthritis, where it is being mediated by these pain generators that are present in the body's tissues. And then they could be mixed pain, a combination of both, which a majority of chronic pain conditions are.

Approach to a patient with pain, it really depends on the kind of setting, whether the pain is acute, chronic. Pain is a very multi-dimensional experience, too, and all of this should be taken into account when we're approaching a patient with acute or chronic pain. A detailed history, a history about their functional status, the intensity of their symptoms, as well as an evaluation of their psychosocial condition is very important when we're dealing with a patient with pain, especially chronic pain.

A clear assessment of what all modalities of treatment they've tried, simple analgesics to as much as opioid type medications, interventional treatments. What rehabilitation based treatments they have tried in the past, and what type of outcomes have they experienced with these is important. And finally diagnostic studies including imaging studies of the affected area, what is available to you and what you might want to see in terms of evaluating a patient with pain more holistically.

Acute post-surgical pain, the treatment should be based on the type of surgery, the expected pain after surgery and duration of usual healing. Typically best determined by the surgical specialists, and if they after a period of reasonable tissue healing send a patient to us in pain medicine or back to primary care, it's usually to consider alternatives and helping the patient manage their condition more effectively instead of just relying on medications. Acute and chronic pain, when we're dealing with such a patient, we have to assess risk factors. What in their psychosocial history is making them more susceptible to getting a bad pain experience, and not just the true or the anatomical problem?

When we're dealing with chronic pain, it's reasonable to seek expert consultation when needed. Non-pharmacological and non-opioid medications are really the first line treatment that you should consider. And consider pain management or expert referral prior to starting patients on opioids to seek alternatives before considering chronic opioid therapy. Patients on chronic opioids and comorbid substance abuse disorders, as well as addiction, require special attention when we're considering their management. Because not only they may not be very good candidates for continued opioids or other high risk medications, but their pain may not improve with simply targeting a particular anatomical target. We really have to approach these patients with a multidisciplinary approach.

Who and when to refer to pain medicine? Well, any patient can be referred to us as part of a multidisciplinary referral. Whatever we do really works best in those patients who are self-motivated, self-involved, also are doing their part in terms of lifestyle modification. And we're really a part of the treatment, including rehabilitation based treatment, as well as psychological treatments when necessary. Patients should be sent to us or another expert when there is no improvement with conservative measures and no other definitive treatment options are available.

Certainly if you're considering initiating opioid therapy, it's quite reasonable to seek alternatives by sending them to an expert to get treatment options in a patient who would willingly want to come off medications or where the clinical situation requires cessation of opioid therapy. And typically in situations such as very advanced rheumatologic illnesses, very advanced neurologic illnesses, where the patients have been through a gamut of other treatments in the past, it may not be required to generally just send to pain management to take over a stable patient where there is no other concern of misuse and so on.

Treatments for chronic pain include a mixed array of different specialties, surgery, rehabilitation, physical and occupational therapy, some interventional treatments that we do that I'll cover. Medications, both systemic and local, psychological treatments, cognitive behavioral therapy, engaging the patient in coping skills, pacing themselves, and that can be quite helpful with chronic pain. As well as some complementary and integrative medicine based techniques, acupuncture, relaxation techniques, guided imagery, and typically patients do well with a multidisciplinary approach, the patients who are dealing with chronic pain.

Just to go over some specific indications where we have procedures that could help the patient and could be used as part of a multidisciplinary program. None of the procedures that we do, except for a few that I'll talk about later, really provide sustained long term improvement. None of the procedures that we do really reverse the degenerative processes, but they can be good adjuncts for moderate to severe pain when the patient is also self-engaged and doing their part in terms of rehabilitation, physical strengthening exercises and lifestyle modification.

We talked about this discogenic back pain earlier today. Another source of axial back pain, especially in the relatively younger individuals, could be the facet joints or spondylosis. And we can do a diagnostic nerve block of the nerves to these facet joints, and if the patient gets very good pain relief after it, that points to these as being involved in their low back pain. This can then be followed by radio-frequency ablation of these medial branch nerves, which can provide a reasonable intermediate duration of pain relief. Nerves can regrow. So their pain may come back or it may not come back to the same intensity as before, especially if they're engaged in rehabilitation based treatments, as well.

Lumbar epidural steroid injections are a good adjunct to consider for someone with leg pain, as we talked about earlier today. Sciatica, pinched nerve related pain shooting all the way into the legs can respond to this. And so can sometimes pain related to lumbar spinal stenosis. But axial back pain from spinal stenosis may not necessarily, these injections may not necessarily work well for, but sciatica type symptoms respond fairly well in most situations to these injections. There are different approaches of doing this where we can more selectively go at a particular effective level.

Cervical spondylosis causing axial neck pain and cervicogenic headaches sometimes, so other than the disk structures, the facet joint could sometimes be a pain generator in spondylotic patients, as well as after whiplash mechanisms. Similar to the lumbar radio frequency medial branch blocks, these can be targeted at the affected level. After doing a diagnostic block, if patients report significant improvement in their symptoms, this, too, could be followed with radio-frequency ablation treatments, and with fairly good success for focal areas, especially of neck pain.

Epidural steroid injections can be employed both for cervical spinal stenosis when there are no major neurologic deficits that warrant surgical treatment, as well as cervical radiculopathy, and oftentimes could be considered as part of physical therapy. Or if a patient really is not responding to a trial of medications and physical therapy and exercises, these could be good adjuncts to consider prior to entertaining a surgical option if there is no major neurologic deficit or the patient is not myelopathic.

There are several peripheral nerve targets, too. Really, if a patient has focal pain, there is a fair likelihood that there is a procedure or a particular nerve target that we can direct a treatment at. For more diffused pain conditions such as fibromyalgia, advanced rheumatologic conditions, so on, it's hard to treat with these interventional treatments. And more rehab based modalities have been shown to be the most effective.

Post-hernia related groin pain, occipital neuralgias causing posterior headaches, intercostal neuralgias from shingles, postherpetic neuralgia, as well as post-thoracotomy pain syndrome are all targets that are amenable to these peripheral nerve blocks, which can then be followed with various types of ablation techniques. This is a picture of the intercostal nerve cryoablation, which can provide significant duration of pain relief for patients with postherpetic neuralgia or post-thoracotomy syndrome. For several visceral or abdominal conditions, not too applicable for this particular forum, but there are certain procedures that we can do to target these conditions, too.

Lastly, intrathecal drug delivery is a very good evidence-based treatment that can provide sustained and long term improvement for high impact pain which is constantly interfering with a patient's life. These treatments are usually not considered if they are functioning reasonably well with conservative treatments. But if they have intractable pain that is limiting their quality of life, intrathecal drug delivery could be employed for conditions such as multiple compression fractures in the spine, failed back surgery syndrome, which usually it's fail back-- the patient got good outcomes for the reason the surgery was probably done in that their sciatica is better, but they continue to have back pain if they've had a big fusion operation, as we learned earlier.

And this could be a very good treatment for axial back pain in that type of a situation, as well as cancer related pains. These are MRI-compatible devices. They require a catheter to be placed in the intrathecal space, and a pump that's usually put subcutaneously in the abdominal area, which is filled with usually a very low dose opioid medication along with local anesthetic.

Lastly, spinal cord stimulation has really evolved over the last several decades. But in the last five or six years, there is very good level one evidence for the use of spinal cord stimulation for intractable back pain after surgery, or if patients are not great surgical candidates. Also for several neuropathic pain conditions such as peripheral neuropathy or intractable nerve impingement or complex regional pain syndrome, where electrodes can be placed in the epidural space, and they act at the level of the dorsal column by creating an electric field. Which basically either creates a paresthesia and overrides the pain pathways, or there are higher frequencies now available that just block transmission of pain signals at the dorsal column.

There are several other procedures. As you know joints, tendons, these focal areas of pain can also be targeted, as well as peripheral nerves through stimulation based techniques. For intractable knee pain after total knee arthroplasty, or if patients are not good surgical candidate, genicular nerve block is a procedure similar to those facet blocks that we do there. If the patient gets great pain relief, we can follow it up with radio-frequency ablation treatment with pain relief lasting three to six months after the procedure.

In the end, interventional treatments and chronic pain management is really multi-modal, especially a multidisciplinary specialty. Interventional treatments work best in patients who are engaged in a multidisciplinary treatment program. And we typically promote a lot of self-management, as well as rehab based modalities for chronic back, as well as other pain conditions.