

RSD PUZZLE #84

More On Dependency To Drugs

The greatest researchers and professors who are experts in surgical procedures and in the latest advances in mechanism of diseases know very little about dependency to drugs. As a matter of fact the higher quality the university or research center the more likely they are to prescribe morphine agonist narcotics and to try to get rid of the pain with surgical procedures doomed to fail. The best example is the doctors in cancer institutes who advocate the same pain medicines for cancer patients as they do for RSD patients. The cancer patient has a few months to live, and as a mercy act, should receive any of the strongest pain medicines or any surgical procedure that provides her a few months pain relief.

The RSD patient has quite a few decades of life ahead of her and should not be exposed to such gross treatments. The treatments are worse than the disease.

The pain specialists in the cancer centers who advocate drug dependent medications for RSD would agree the fact that there is nothing in common with acute pain, cancer pain, and Complex Regional Pain Syndrome (CRPS/RSD). Acute pain -examples- fracture of bone or acute heart attack- and cancer pain both have the acute recent tissue damage in common. The cancer pain is also a combination of acute damages and chronic scars of the cancer. Regardless, both acute and cancer pain require surgical treatments and strong narcotics. The chronic pain of RSD requires strong non-addicting narcotics such as Nubain, Talacen, Buprenex, Stadol, and Ultram. They are as strong if not stronger than the first group yet they don't suppress the endorphins, growth and sex hormones. Chronic pain RSD rarely requires surgery (examples Fracture of bone, torn meniscus in the knee). Otherwise conservative treatments will do much better without leaving scars behind. However, that does not prove that they are practicing good medicine when the surgical procedures fail or the pain medication becomes a new source of pain due to withdrawal. I inherit these problems on a daily basis and have to try to fix them. I rarely ever see a virgin RSD patient. I see the patients who have been to large centers whose treatments have failed which have made their RSD worse with spread and other complications.

We have rehashed the subject of safe versus unsafe narcotics ad-nauseum. Why would anybody with simple common sense opt to take an unsafe narcotic that causes physical dependence? Withdrawal Pain refers to the fact that when we did the research on dogs - and when Dr. Basbaum does research on rats or other animals- a perfectly normal animal treated with morphine starts self-mutilating (attempts to chew its perfectly normal leg) due to the fact that a few weeks intake of morphine has left the animal with no natural cerebral endorphins. This is the type of pain which happens in a perfectly normal animal only because

of treatment. Why do RSD patients fight for getting such medications just because the cancer centers or the standard medical community allow such treatment?

One other factor is "money talks and everything else walks". HMO's and other insurance companies fight to death not to allow the patients to use the more expensive and safer non-dependant type of narcotics. They give the patient a few choices of Methadone, Morphine, Lortab, or Percocet which are all cheaper than newer safer drugs.

I usually explain to my patients that saving money for HMO companies is no reason to use harmful drugs and to take harmful medicines.

It is the physician's duty to keep the patient out of harms way rather than pleasing the insurance company that pays his salary (in the case of HMO's) or insurance refund.

Please do not call Dr. Basbaum for treatment advice. He is a great researcher on the subject of pain and does exclusive animal research. That doesn't imply that any patient is an animal.

SELECTION OF ANALGESICS

Type of Pain	Surgery	Morphine Agonist	Morphine Antagonists	Agonist Antagonist Combination
Acute Pain	Yes	Yes	Yes	Never
Cancer Pain	Yes	Yes	Yes	Never
Chronic Pain (e.g., CRPS)	*Rare Exceptions	No	Yes	Never

* Examples of exceptions for surgery are Non-Union Fracture, Torn Meniscus or Ligament in the Knee, or similar conditions.

H. Hooshmand, M.D.

RSD PUZZLE #85
Death From Methadone

Any type of withdrawal phenomenon is apt to cause pain and alarm (panic). If we are not allowed to apply the term withdrawal or addiction for any kind of pain then there is no such thing as addiction.

What is truly unethical is the fact that a combination of methadone and morphine has the potential of causing respiratory arrest and death. In the past six months, three patients waiting to come to our clinic as new patients, died before they made it here. Their deaths were due to a combination of Methadone and Morphine. Just because Methadone has a long half life and causes subtle rebound and dependence does not make it a safe drug. The patient on Methadone should be very careful of any additional medication.

Medical societies represent unlimited varieties of opinions, I am a member of many chronic pain, medical, and neurological societies. Unfortunately, these opinions can not be used as scientific standard or yardstick.

It is cruel for doctors to enforce dependence by prescribing drug dependent type of analgesics on pain patients and then to call them drug seekers or drug addicts. Many of these drugs actually make the pain worse in-between doses. The blame goes to the doctor, not the patient.

I realize that there are a few of us rebelling against the recent surge of "liberal" pain prescriptions. However, we shall keep warning the patients of the dangers of such drugs. The body usually signals the symptoms of complications of dangerous medication combinations. If something does not seem right by all means call your doctor.

One excellent form of pain relief for many patients is the morphine pump. The pump provides small dosage of morphine in the spinal fluid without causing withdrawal or dependence. This is because the dosage is too small to completely halt the formation of endorphins. Patients on the pump can not be given large oral doses of Morphine; this can be a deadly combination.

H. Hooshmand, M.D.

RSD PUZZLE #86

Morphine Pump

In regard to Morphine pump, in our clinic we are following the largest series (that I know of) of the patients who have received Morphine pump treatment for RSD. The preliminary reports on 88 patients who have been followed for three years or longer are as follows:

1. The optimal dose of Morphine is anywhere from 4mg to 10mg per day. Below 4mg, the dosage is too weak. Over 14mg, the dosage is too strong and is accompanied by recurrence of pain rather than pain relief.

The number one cause of failure of Morphine pump has been addition of other drugs that mess up the function of the small doses of Morphine. These drugs consist of alcohol at any amount, and oral or skin patch intake of other Morphine agonists. For this reason, we have developed a routine practice of doing urine tests on the patients. If there is any other Morphine agonist medication in the urine, then we will not add Morphine to the pump any more. Such a patient is classified as a failure.

The success group which at the present time consists of approximately 80% of the patients treated by this method is characterized by the pain severity dropping by 40-50% (usually the pain reduction from 7-8 down to 2-4). In addition, improvement of the quality of life such as return to part-time or full-time work, and better interpersonal relationship as well as improvement of depression-if to begin with the patient is depressed. If the patient is not depressed, then the improvement is measured by improvement of agitation, irritability, insomnia, etceteras.

Incidentally, on the subject of depression, Doctor Mary Lynch from Toronto, Ontario, has shown that RSD patients are no different than the general population in regard to their psychological profile [1]. On the other hand, the forth criteria of making the diagnosis of RSD is the fact that the pain is so severe that it is incompatible with normal sleep, happy and relaxed mood, and perfectly euphoric attitude. So, using the criteria #4 does not imply any insult to RSD patients.

Other causes of failure of pump are: lack of proper plasticity, meaning that unfortunately the treatment with the pump is done in patients who have had RSD for more than 5 years. After 5 years, the body does not have the power of healing to adjust to the foreign body of the pump or the spinal stimulator so the patient's body rejects the pump. The other causes of failure are infection or excessive scar formation (in less than 2% of such patients) or total intolerance of any dosage of Morphine in the spinal fluid.

Morphine pump is the best form of treatment for advanced, severe RSD patients as long as the patient and the doctor understand that the dosage of Morphine can not be mixed with other forms of strong pain medications.

In our study of application of ACTH for chronic pain, we measured the dosage of endorphines in the spinal fluid [2]. The patient's who take large dose of Morphine agonist have no endorphine in the spinal fluid. The use of ACTH increased the dosage of endorphine. The dosage of endorphine in the spinal fluid of the Morphine pump patients is low, but the endorphine is still present. Once the patient takes any strong pain medications by mouth, then the endorphine disappears. A usual dose of Morphine by mouth is over 100mg a day whereas, less than 1/10 of it is applied per day in the pump.

The patients who have the best results from the pump are the patients who get relief from 4mg to 7mg per day of Morphine.

This is the report of our experience with patients followed more than 3 years. In the past 1 year, we have had another problem. After the patient has had the pump treatment, there have been a lot more generous oral prescriptions of pain medications given to the patients just because of persistence of pain. As the result, the pump is tried, it doesn't work, and it has to be discontinued. It is not the pump that failed, but the lack of understanding of how important it is to provide drip irrigation and extremely small doses of Morphine in the pump.

2. Regarding the question about Methadone and other drugs. Methadone should not be given with other strong Morphine agonists or antagonists. However, other medications can be given to the patient who is on Methadone such as NSAIDS calcium channel blockers, or antidepressants.

3. The reason the insurance providers are so adamantly against the pump is because of the point brought up on the fact that the patient is on the pump and also takes other pain medications. However, usually the patients who need the pump are work injury RSD patients. Usually by the time the patient needs the pump, the case is so-called settled, and the patient is disabled, so the patient is covered by Medicare. The Medicare does pay for the pump treatment.

What you need to remember is that there is no way you can get rid of the steel claws of the curse called RSD unless you are pain free. The pain free state can be achieved by the combination of antidepressants and proper pain medications, exercise and activity, proper diet, and proper nerve blocks-not the kind of nerve blocks that last only 1-2 days or 2-3 days.

Remember, it is not all in your head. It is all over your body. It starts from one extremity or one part of the body and if not properly treated, it spreads to the other parts of the body. Don't let anybody convince you to be treated exclusively by a psychiatrist or to "learn to live with your pain". Just remember you are not crazy. The pain of RSD is enough to drive anybody out of their mind but what I admire is the fact that RSD patients still keep their sanity.

H. Hooshmand, M.D.

Reference

1. Lynch ME: Psychological aspects of reflex sympathetic dystrophy: a review of the adult and pediatric literature. *Pain* 49:337-47 1992.
2. Hooshmand H: *Chronic Pain: Reflex Sympathetic Dystrophy: Prevention and Management*. CRC Press, Boca Raton FL. 1993.

RSD PUZZLE #87
RSD AND CEREBRAL PALSY

Occasionally, the patients with Cerebral Palsy (CP) are afflicted by neuropathic pain, and even by the full picture of RSD.

Cerebral Palsy is a nonspecific, generalized terminology referring to any injury before or after birth, to any child, resulting in permanent and chronic disturbance of the central nervous system (CNS) function.

The effect of pain on the CP is quite variable. Some patients show quite a high tolerance to pain, whereas others have a low threshold for pain. Usually, the mild cases of cerebral palsy are left undiagnosed. Usually such a child is categorized under a diagnosis such as hyperactivity, ADHD, Clumsiness, or "slow learner".

In rear cases of CP, the patient manifest central sympathetic nervous system dysfunction in the form of central pain and even disturbance of sympathetic dysfunction affecting the entire one side of the body.

Usually, in such cases the patients is referred for evaluation of severe headaches, or pain of an unknown cause. One of the earliest manifestations is attacks of severe pain waking the patient up during late night sleep. The patient acts very sensitive to light and noise, may show the manifestation of hypersensitivity of the skin to touch (allodynia), and tendency for flexion and withdrawal of the involved extremities.

Thermography is quite diagnostic, in that it usually shows partial virtual sympathectomy and paralysis of the sympathetic system involving one side of the body, manifested in the form of hyperthermia and heat loss due to the partial inability of the sympathetic system to preserve the body heat through vasoconstriction of the skin on the involved extremities.

Such children or the grownups that have been left undiagnosed, have an extremely low threshold for pain, their response to pain is quite emotional, and out of proportion to the pain stimulus.

This is not because the child is spoiled or simply exaggerates the pain. This is because of the fact that disturbance of the sympathetic system causes severe allodynia and hyperpathia resulting in sensitivity to touch, or even to breathe. The patient has a tendency to react paradoxically to muscle relaxants and tranquilizers such as Valium, Xanax, etc. Instead of a calming effect, such medications stimulate the patient, causing agitation and anxiety. This paradoxical phenomenon makes the treatment with sympathetic nerve blocks extremely difficult.

In addition, the sympathetic nerve blocks are not usually helpful because the patient already has a paralyzed sympathetic system, rather than a simply hyperactive sympathetic system. If the thermography shows increased temperature in the involved area, then there is no sense in proceeding with sympathetic nerve blocks, because the sympathetic nerves are already dysfunctional. This is one of the best examples of sympathetic dysfunction leading to RSD without the accompanying sympathetic hyperactivity.

Treatment of choice for this condition is a combination of treatment with effective analgesic antidepressants such as Desipramine, Trazodone, or Doxepin. The antidepressant treatment should be combined with treatment with a specific anticonvulsant. The most effective anticonvulsant for this condition is Tegretol. Tegretol, in non-generic brand name form, is the most effective pain reliever for causalgic pain. In addition, Cai and McCaslin (in European Journal of Pharmacology, 1992) [1] have reported that the combination of Desipramine and Tegretol is quite effective in blocking NMDA receptors and relieving the pain.

Obviously, as is the case with all neuropathic pains, and especially RSD, just prescribing medication is not enough. The change of life habits is also very important. The proper diet, which would avoid any use of chocolate, hot dogs, sausage, etc., and would encourage the four F's diet (fresh fruit, fresh vegetables, fish and fowl), as well as avoidance of extensive distressful exercise or extensive bed rest are essential in the treatment of this sad condition. As mentioned above, the condition is rare, and falls into the category of "Central Pain".

H. Hooshmand, M.D.

Reference

1. Cai Z, McCaslin PP: Amitriptyline, desipramine, cyproheptadine and carbamazepine, in concentrations used therapeutically, reduce kainate- and N-methyl-D- aspartate-induced intracellular Ca²⁺ levels in neuronal culture. Eur J Pharmacol 219:53-57 1992.

RSD PUZZLE #88

DETOXIFICATION FROM NARCOTICS

The question you had was in regard to the use of Buprenex. This medication is classified as a Class V substance which is not a controlled drug. Class I substances, are such drugs as LSD, PCP, Marijuana, etc. Class II substances, are Morphine, Methadone, and Lortab, etc. Class III substances, are drugs in the Darvon group of medication and Class IV substance is limited to mainly morphine habitus antagonist medications with the least tendency for tolerance and physical dependence. Obviously that does not exclude abuse by the individual patient.

The latest literature has shown that Buprenex is quite effective in helping to detoxify the patient from strong Class II opiates. The Harvard Group, in April, reported successful application of Buprenex in detoxifying patients from Heroine, Cocaine, Morphine and Methadone.

Johnson et al [1] have successfully used Buprenex in detoxifying patients from opiate dependence. Ling et al [2] have successfully used Buprenex to detoxify patients from Methadone dependence. Through Internet Communications, we have traced four cases of sudden death from methadone use in RSD patients in the past six months. These sudden deaths have occurred with no previous warning. These are not simply due to respiratory arrest during sleep. Every one of the four victims dies while sitting up, eating, reading or watching TV. We are very concerned about excessive use of Methadone in a liberal fashion in the treatment of RSD. We are also very concerned about the excessive and indiscriminate use of Neurontin in the same patients.

Buprenex works similar to Stadol, but does not cause the problem of the psychological dependence the patient develop to Stadol. It also does not cause the side effects of excessive drowsiness and disturbance of psychological function caused by Stadol.

Our policy is to detoxify the patient with the help of Buprenex, and then gradually and simultaneously replace it with Naloxone reversible type of antidepressants (such as Desipramine or Trazodone).

H. Hooshmand, M.D.

References

1. Johnson RE, Jaffe JH, Fudala PJ: A controlled trial of buprenorphine treatment for opioid dependence. *JAMA* 267:2750-5 1992.
2. Ling E, Wesson DR, Charuvastra C, et al: A controlled trial comparing buprenorphine and methadone, maintenance in opioid dependence. *Arch Gen Psychiatry* 53:401-407 1996.

RSD PUZZLE #89

DOES DIABETES CONTRIBUTE TO RSD?

Diabetes causes three different types of peripheral nerve dysfunction. One is called mononeuropathy, meaning only a single peripheral nerve is involved. The commonest form of it is femoral neuropathy.

The second is called polyneuropathy meaning multiple nerves are involved in a symmetrical fashion causing numbness, pain, and weakness in the hands, feet, or both. The third is called mononeuropathy multi-plex, meaning single nerves in different parts of the body are involved secondary to diabetes. For example, the sensory or motor nerves to the right foot are damaged along with a single nerve in the left hand such as ulnar or median nerve.

The mononeuropathy and mononeuropathy multi-plex are usually caused by disturbance of circulation of the blood vessels that provide oxygen and nutrition to the peripheral nerves. The polyneuropathy is usually caused by nutritional disturbance such as excessive alcohol intake, or long standing deprivation of the nerve from sugar.

None of the above mentioned neuropathies in and of themselves can be the cause of RSD. As a matter of fact, even though typical painful nerve damage in the diabetic person is quite common, the incidence of RSD among the diabetics is no higher than in the general population.

On the other hand, a minor trauma, which is usually the cause of RSD, is more likely to cause RSD in an extremity which is already afflicted by the diabetic neuropathy.

The conclusion is that a diabetic is as likely to develop RSD as any other individual. No more, no less. To blame a typical clinical picture of RSD on the finding of diabetic neuropathy on nerve conduction time studies is nothing but a cop-out. On the other hand, to blame diabetes as the cause of RSD is also misrepresentation.

H. Hooshmand, M.D.

RSD PUZZLE #90

RSD AND TREATMENT OF TROPHIC ULCERS

To Whom It May Concern:

At the request of the patients, I am writing a protocol of treatment. The patient has developed trophic ulcers over their extremities. RSD has been diagnosed by the patient's physicians.

Trophic ulcers are not unusual in RSD, being a sympathetic nervous system dysfunction, it manifests itself as follows:

1. Hyperpathic and allodynic pain (pain accompanied by change in vital signs, sweating and pain that becomes worse with simple touch or a breeze).
2. The response to the pain is in the form of motor response the spinal cord resulting in constriction of blood vessels, cold extremities, muscle spasm, tremor and flexion deformity.
3. Disturbance of the immune system. The sympathetic system regulates the immune system. The sympathetic system is responsible for control of body temperature, control of vital signs and control of the immune system. Any kind of stress that stimulates the sympathetic system also stimulates the immune system.

This disturbance of the immune system manifests in inflammation, spontaneous bruising and black and blue spots over the skin, neurodermatitis, edema and swelling that mimic conditions such as carpal tunnel and tarsal tunnel syndrome. In addition, the immune system disturbance in more severe cases not only cause neurodermatitis, but also causes trophic ulcers. Trophic ulcers usually develop after treatment with cast immobilization, wheelchair immobilization, surgical treatment or application of ice. At, times, the trophic ulcer and immune system disturbance are caused by incomplete pain management.

Once trophic ulcers develop, the following should be the protocol of treatment:

1. Treatment with IV Mannitol 100 grams in 1000 cc D5W.
2. Treatment with Decadron Dose-Pack for one week.

3. After one week, the Decadron Dose Pack should be replaced with IM ACTH, which does not cause suppression of adrenal cortical function and instead stimulates the adrenal gland to secrete its own cortical steroids. The ACTH should be given 40 units IM twice a week, along with the patient taking some form of antacid, such as Zantac or Cimetidine on a daily basis ACTH will be continued in 12-20 weeks.

4. Epsom salt and warm water bath. The magnesium sulfate works as a hyperostotic agent. It reduces swelling and inflammation. In addition, magnesium sulfate increases the level of serum magnesium and acts as a calcium channel blocker, helping the healing of the cells in correcting the inflammation.

5. Most importantly, the pain should become under control. In the regard, addicting narcotics are contraindicated. They can cause withdrawal (rebound) pain, which is as harmful as the original pain cause by the disease.

I am enclosing a list of controlled and non-controlled drugs. As is noted, Class V, which is totally not controlled, non-addicting and contains medications such as aspirin, Tylenol, etc., and also includes Buprenex. Buprenex has been used for years to help in detoxification of Heroine, Methadone, Morphine, and Cocaine addicts. Buprenex has no tendency for drug dependence and no tendency for withdrawal pain or tolerance.

Whereas the neuropathic pain usually does not respond properly to treatment with endorphins, it responds quite nicely to treatment with Buprenex, which is a morphine antagonist.

If the patient cannot take Buprenex, then Stadol NS or Nubain would be the other, less preferred, morphine antagonist.

6. Even more important than analgesics for control of pain, is the use of analgesic type anti-depressants. Ideally, Desipramine 25 mg bid and 50 mg qhs can be used. Anafranil and Tofranil should not be used because they cause obesity, fatigue and drop of blood pressure and pulse.

Another very effective analgesic/ antidepressant is Trazodone at the dosage of 50 to 300 mg daily, which does have the above mentioned side effects of tricyclic anti-depressants. The dose should start at 50 mg at bedtime and every night an extra 50 mg should be added, until the pain is so well under control that the patient can sleep eight hours a night.

7. The area of ulcers should be treated not only with epsom salt and warm water bath, but also with Maalox liquid alternated Zonalon (Sinequan) cream and alternated with corticosporin lotion.

8. None of the above treatments will work unless the patient stays very active and exercises as much as possible. The reason being the lack of exercise causes stimulation of the chemoreceptors in the extremities and it aggravates the pain and inflammation.

9. Any use of ice or surgical procedures should be absolutely avoided.

H. Hooshmand, M.D.

RSD PUZZLE #91

RSD, Opioids and Sex

You have asked if sex is good for RSD or not. Sex is very beneficial for RSD. RSD is a disturbance of the sympathetic system, the immune system, and the hormonal system of the brain. The sympathetic system regulates the immune system. The tools in this regulation consist of the white blood cells and their protective function, hormones such as ACTH, sex hormones, growth hormones and endorphins, as well as monoamine such as norepinephrine, serotonin, and acetylcholine.

Exercise, sex, rest and relaxation improve the function of the above mentioned immune system.

On the other hand, stress of any form, be it emotional or physical, traumatic or due to infection or toxins such as alcohol or narcotics, disrupt the function of the immune system.

In RSD natural and pleasant sex raises the threshold of pain because it also elevates sex hormones, endorphins and growth hormone. On the other hand, high doses of pain medication, especially the opioid agonist type of medication flood the hormonal system of the brain. Physical trauma such as unnecessary surgical procedures also causes the same adverse effect.

Among other benefits of a proper, natural sexual relationship is the excellent natural REM sleep that ensues the sexual activity. The REM is essential for regeneration of the monoamine such as serotonin, which is an excellent anti-depressant, and Dopamine, which is an important monoamine in protection against stress.

Large doses of opioid agonist pain medications causes lack of desire for sex, as does an overdose with serotonin. Such an overdose of Serotonin at the cerebral level is a byproduct of SSRI anti-depressants such as Prozac, Paxil or Zoloft. This is the reason for lack of libido in over 1/5 the patients who take SSRI anti-depressants, such overdose can be corrected by periodic "drug holiday" such as stopping the SSRI intake on Friday, Saturday and Sunday and restarting it on Monday. Lack of libido is not just a lack of luxurious desire, but also the sign that other hormonal system and monoamine system are dysfunctional as well.

In the late stages of RSD (stages III and IV), especially after surgical procedures or after insertion of infusion pump or spinal stimulator, there is such as suppression of sex hormones in the brain and spinal cord that two phenomena are noted. One is tenacious lack of libido, erection, and any other form of desire for sex. Another is the problem of severe fatigue and depression. Both of these problems can be corrected in men by testosterone replacement and in women by estrogen replacement. As a matter of fact, the infusion pump patient almost invariably requires such hormonal replacement. Without the hormonal

replacement, the depression and fatigue aggravate the chronic pain and result in failure of beneficial pain relief.

H. Hooshmand, M.D.

RSD Puzzle #92

Is Methadone Treatment Safe?

Historically, in the beginning of the century, the chronic pain was treated by Freudian type of psychiatrists. The psychiatrist would convince the patient that, according to the teachings of Freud, the patient had a sick personality, the pain was imaginary and it was all in his head. Even as lately as the 1960's and 70's there were all types of Freudian archaic theories such as "pain personality", "multiple sclerosis personality", or "Munchausen Syndrome". The psychiatrist believed that the patient was a big liar just as Baron Munchausen of the 16th century. It sounded more scientific when the psychiatrist was projecting and accusing the patient of lying.

In the 1950's the new method of replacement of Methadone for heroine addicts was developed.

It was quite impressive because Methadone had a long half life, and even though the brain becomes dependent on it, the patient does not realize the dependence because the withdrawal effect is very mild. In addition, it was quite effective because frequently the heroine addict would take the Methadone, plus heroine, and would die of respiratory arrest. The cause of death was then declared as heroine overdose. This was a convenient way of quietly getting rid of the heroine addicts. Then, there was the resurgence of Methadone treatment in the late 1980's and early 1990's because of the doctors' lack of understanding of the dangers of this insidious, strong respiratory depressant opioid agonist. The patients taking Methadone have problems with shortness of breath, suddenly falling asleep, having apneic attacks, and death. These attacks are diagnosed as "narcolepsy", and the physician does not recognize the link between the respiratory depression and the Methadone.

Unfortunately, the general trend nowadays is to load the patient with every kind of strong pain medication, as if the patient has cancer. Morphine agonist narcotics have very little effect on neuropathic pain such as RSD, but they dope the patient so that the patient does not complain anymore. This is the reason for HMO's providing all of the cheap narcotics that the patient needs, but fighting any curative treatment which may cost more money. The agonist opioids are cheap and shut the patient up. The patient does not have any energy to get up and go to the ER, so it saves money for HMO's. More and more doctors are selling their souls to HMO's. If such an HMO doctor prescribes an effective and expensive drug, his salary drops through the process of "capitation contract" they have with HMO's. So, he has to resort to Methadone, which is cheap, but lethal. As a patient, you are better off with no insurance than an HMO.

H. Hooshmand, M.D.

RSD Puzzle #93

Will A Rhizotomy Help My RSD?

There are three kinds of pain.

The first is the acute pain, which may require narcotics or surgery to correct the source of the problem.

The second is cancer pain, which is destructive and shortens the life expectancy, should be treated with any form of medication or operations that provide temporary relief for the patient to make the short life less painful and less miserable.

Third is complex chronic pain, which is completely different from the other two. The complex chronic pain should not be treated as an acute pain, or as a cancer pain. The cancer pain is combination of acute, subacute and chronic pain. The true chronic pain has had a pathology that has been partially healed, but is causing continuous pain. There is nothing in common among the above three types of pain in regard to treatment.

This mixing of the cancer pain and chronic pain entities was the beginning of the anesthesiologists reinventing the wheel. They started doing surgical procedures that were tried by neurosurgeons in the 1950's and 60's and were found to be of no use for chronic pain. These consisted of rhizotomies (cutting the nerve roots), neurotomies and chordotomies (dissecting the pain tracts in the spinal cord), tractotomies (cutting the tract of the pain fibers in the medulla and spinal cord), thalamotomies, singulotomies, frontal lobotomy, and insertion of deep brain stimulators, followed later on by insertion of spinal canal stimulators.

The above surgical procedures are quite reasonable and kosher for cancer patients because they are palliative in nature. They do not cure anybody, but they get rid of the intractable, pain of the poor cancer patient who has only a few months to live. If the patient lives longer than a few months, it is still ok to go ahead and cut more tracts and more nerves. Such treatments in cancer patients are humane and justifiable.

However, an RSD patient has a life expectancy of anywhere from three to five decades. It would be cruel to do such operations, the benefits of which last only a few months up to a maximum of a year-year and a half, and to expect the patient to shut-up and not complain after the benefit is over. RSD is usually caused by a minor injury, but its pain is more severe than even cancer pain. Invasive operations, as outlined above, only add new sources of pain in the RSD patient.

The reason rhizotomy does not work for RSD is because the patient lives longer than nine months and has to put up with a new source of pain from in the form of this surgical resection of the sensory nerve root. An anatomical reason the rhizotomy does not work is because a sensation does not limit itself to one sensory nerve root as it enters the spinal cord. It usually spreads up to three or four sensory nerve roots, than an area larger than 1 1/2" in the spinal cord becomes defective and causes a phenomenon called deafferentation, which becomes a new source of pain because of the fact that the deprivation of the nerves in the spinal cord from the input of sensation from periphery causes gradual death of the nerve cells in the spinal cord, opening the gate and causing severe pain, even in the normal areas of the body where the sensory nerve roots have been dissected.

H. Hooshmand, M.D.

RSD Puzzle #94

Information on Catapres or Clonidine Patches

Regarding the question about Catapres patch. The generic name for it is Clonidine. It is a very effective alpha II sympathetic blocker. The patch SHOULD NOT be applied over the area of nerve damage, e.g., on the hand, foot or knee. It should be applied to the referred pain distribution in the lumbar or cervical spine region on the same side. The area of application of the patch is identified by pressure on the muscle immediately to the side of the midline on the side where the pain and nerve damage is present. This pressure is applied up and down the cervical or lumbar spine until the tender spot is identified. The patch is applied there and is changed once a week. Every time the patient takes a shower or a bath the patch is temporarily removed, laying face up on a napkin. After the skin is dried the patch is reapplied. This acts as a continuous nerve block and provides very good pain relief. It certainly is better than the standard sympathetic ganglion nerve block done with local anesthetic which lasts no more than a few hours to one to two days.

The reasons doctors are reluctant to apply this treatment, are because of the fact that when the patch is applied to the area of nerve damage it causes more damage to the sympathetic system, more pain, and reddish discoloration of the skin. The second reason is as, an alpha blocker, Clonidine drops the blood pressure and if the patient already has low blood pressure they cannot tolerate it.

The same principal applies to all other nerve blocks in RSD. The area of the nerve damage over hand, foot, arm, or leg, should not be stuck with a needle for nerve block injection or a Clonidine patch because both methods aggravate and expand the area of nerve damage where the nerve and the skin are already extremely tender and irritated.

Both methods should be applied on the path of sensory nerve fibers just before the nerves into the spinal cord- over the cervical spine region or lumbar spine region.

Applying nerve blocks and patch on the area of lesion to stop the pathologic irritation of the nerve is the same as bombing a hospital to kill the occupying enemy. The bomb will kill the enemy and the patients simultaneously.

H. Hooshmand, M.D.

RSD PUZZLE #95
"NEURONTIN"

QUESTION:

"Is there or is there not a limit to the amount of Neurontin that one can take? I am now taking 5200 mg of this stuff daily and the Work Comp doctor is telling me that there is no limit as long as I am not having side effects. To me, this sounds a little off base. Dr. Hooshmand, if you see this, perhaps you could give your opinion also?"

ANSWER: Neurontin is an anticonvulsant that is very similar to valproic acid. Anticonvulsants prevent burning type of neuropathic pain such as seen in diabetes, shingles, and Reflex Sympathetic Dystrophy (RSD). Different types of pain require different anticonvulsants:

1. For stabbing or electric shock types of pain, the treatment of choice is Tegretol or Trileptal.
2. For burning pain, the treatment of choice is Neurontin. The burning pain comprises in only 25-30% of neuropathic pain.

Indiscriminate prescription for any kind of pain is apt to fail, as well as causing serious side effects of obesity, vertigo, and dysphoria (neurotic and depress attitude).

More serious complications are in the form of intolerance to Neurontin leading to patients having no other choice but discontinuing the medication (this happens in 7-8% of the cases being treated with Neurontin (7% is reported in the PDR, and 8.2% in our patients).

3. The third group of pain patients suffers from deep pain in extremities. In this group the treatment of choice is alternating rest and activity. Such patients can be helped with Klonopin® (Brand name Clonazepam).

Neurontin is the most over used medicine in RSD. The dosage of Neurontin in children and the elderly is as low as 300-600 mg per day. In adults it is 1800-2600 mg per day, with a maximum of 3600 mg per day, anything above that dosage causes drowsiness, fatigue, inactivity, irritability, and depression. "The more is not the merrier."

With many thanks,

H. Hooshmand, M.D.

RSD PUZZLE #96

RSD AND THORACIC OUTLET SYNDROME (TOS)

What is the relationship between RSD and Thoracic Outlet Syndrome (TOS)?

The Thoracic Outlet Syndrome refers to any symptom or sign related to impingement (encroachment) of the nerves of the brachial plexus and the subclavian-brachial artery exiting the thoracic outlet triangle. This triangle is on the lower lateral aspect of the neck, immediately above the clavicle (collar bone). This is a triangle made of SCM and scalen muscles, which make the anterior aspects of the triangle, and the clavicle, which is the base of the triangle.

This syndrome is non-specific (it is not caused by any specific disease). It is one of the most over diagnosed and improperly diagnosed syndromes. In its true sense, the artery exiting this triangle, which provides the circulation for the upper extremity, is impinged, causing poor circulation and weakness of the pulse in the upper extremity. In rare circumstances (very rare circumstances), a congenital extra rudimentary rib causing narrowing of the triangle and contributes to the development of the TOS.

Among the RSD patients, this syndrome is not uncommon. The TOS in RSD patients invariably is due to inflammation, a complication of RSD. RSD manifests itself by four principles:

1. Sensory nerve dysfunction with burning and /or stabbing pain.
2. Motor nerve response in the form of muscle spasm and constriction of blood vessels.
3. Inflammation in the form of skin rash, dystrophic changes, or edema.
4. Stimulation of the limbic system (temporal frontal lobe) resulting in insomnia, agitation and depression.

The inflammation in RSD is the number one cause of impingement (entrapment) of the median nerve (Carpal Tunnel Syndrome), the ulnar nerve, Tarsal Tunnel Syndrome at the ankle and Thoracic Outlet Syndrome (TOS) at the thoracic outlet region.

Treatment consists of physical therapy, exercise, and nerve blocks. In more severe cases, instead of surgery, the condition can be relieved and corrected by the use of I.V. Mannitol, which selectively reduces the intracellular swelling of the nerves and corrects the edema.

The conventional surgery for TOS in RSD patients is risky due to the fact that the trauma of surgery contributes to the inflammatory response of the involved area. This results in further aggravation of the edema and spread of the RSD to adjacent areas. If at all possible, an RSD patient should not be exposed to any kind of major trauma of surgical procedures.

Finally, edema and subsequent TOS are relatively common complications of late stages of RSD. By then, the chronic and partially treated RSD loses its classical clinical picture and becomes hard to diagnose. As a result, the patient is told that they do not suffer from RSD, but from TOS. This is a serious mistake because in the chronic stages of RSD the plasticity and power of healing of the part of the body that has become defective. Denying the diagnosis of the disease, and performing an unnecessary operation, will only seriously aggravate the severity of the RSD and will cause irreversible damages.

H. Hooshmand, M.D.

RSD Puzzle # 97
RSD of the Mouth

Many thanks for your letter of 7/16/97. The type of nerve injury and problem that you have in your mouth has many different names. These include causalgia, phantom pain, neuropathic neuralgia of the mouth, and atypical RSD.

Regardless of what name is given to this condition, there is one characteristic. In this condition, the sympathetic nerves that provide sensation of pain and provide control of circulation to the soft tissues of the face and mouth are damaged. As a result, the patient develops stabbing, burning, or electric shock type of pain with a tendency for recurring frequently.

The best treatments for this condition are anticonvulsants such as Neurontin or, more effectively, Tegretol, also antidepressants such as Desipramine, Trazodone or Prozac. Desipramine and Trazodone are more effective than Prozac.

The worse thing that can happen in this condition is root canal exploration. Please make sure that at no time does an oral surgeon proceed with a root canal surgery on you. The root canal surgery damages and aggravates the neuropathic pain.

We do see this condition quite often. Any form of surgery aggravates this condition, as well as ice cold drinks being harmful for this condition. One simple treatment that provides good relief for pain is washing the mouth and gargling with a small amount of Milk of Magnesia followed by brushing the teeth with baking soda.

Certain foods definitely aggravate this condition, these include: hot dogs, cold cuts, liver, kielbasa, sausage, the 5 "C's" (candy, chocolate, cocktails, cookies, and cake). The foods that help this condition are low fat dairy products, and the 4 "F's" (fresh fruit, fresh vegetables, fresh fish, and fresh fowl). Fowl refers to chicken, veal, lean ham and turkey.

H. Hooshmand, M.D.

RSD Puzzle #98

Weight Problems

In RSD there are two types of weight problems, weight gain and weight loss.

The common condition is weight gain. This weight gain is usually secondary to treatment with Elavil (Amitriptyline) and complicated by the fact that patients who take strong pain medications and Elavil have a tendency to become inactive. Inactivity is the worst aggravator of RSD. If you have gained weight and are taking Elavil you may need to switch to a non trycyclic antidepressant such as Trazodone, Prozac or Zoloft

The second weight problem is weight loss to the point of anorexia. This is usually seen in late stages of RSD and is more difficult to treat. It requires combination of treatment with Desipramine, and more effective pain medicines such as Buprenex or Stadol. If it is persistent then ACTH treatment may help. The anorexia is a serious problem and should not be taken lightly.

H. Hooshmand, M.D.

RSD PUZZLE #99

Shoulder-Hand Syndrome

Your condition of limitation of shoulder motion is typical of Shoulder-Hand Syndrome. The rib resection is not the answer. Nerve conduction test is of no use. You need a combination of trigger point injections for multiple areas of bursitis and trigger points irritation, plus physical therapy to mobilize the shoulder.

The nerve conduction studies are usually normal in this condition due to the fact that the involved nerves which are causing the pain of Shoulder-Hand Syndrome are sympathetic nerves in the wall of the blood vessels and cannot be studied by EMG or nerve conduction tests.

Unfortunately, the EMG/NCV studies have been used practically routinely in RSD patients as an excuse to operate on Carpal Tunnel Syndrome or Thoracic Outlet due to edema of RSD. Surgery results in disastrous complications and the spread of RSD.

The diagnosis of RSD with EMG/NCV studies is the same as diagnosing viral diseases with a regular microscope. Viruses can only be seen on an electron microscope. The small C-fibers responsible for RSD pain cannot be detected or studied by nerve conduction tests.

H. Hooshmand, M.D.

RSD PUZZLE #100
RSD AND DIABETIC NEUROPATHY

RSD and Diabetic Neuropathy have a few things in common and are different in other aspects.

1. The pain of RSD and the pain of Diabetic Neuropathy are both "neuropathic pain". This means vascular involvement and small C fiber thermal receptor sensory nerve fibers dysfunction in both diseases.
2. Both Diabetic Neuropathy and RSD are aggravated by stress. The reason being is that the neuropathic pain sensory nerve fibers do not terminate in the neural cortex parietal lobe, but they terminate in the limbic system (temporal frontal lobe). The limbic system modulates stress and gets some of its signals related to stress from sympathetic nerve stimulation.
3. RSD aggravates Diabetic Neuropathy, and Diabetic Neuropathy aggravates RSD.

The following are the major differences between the two diseases:

1. The neuropathic pain of Diabetic Neuropathy is the sole manifestation of this painful Neuropathy. The painful Neuropathy is accompanied by not only burning pain, but also stabbing and electric shock type of pain because in both diseases (Diabetic Neuropathy and RSD) neuropathic pain causes damage and electric short in the nerve fibers. This is the reason anticonvulsants (especially Tegretol) are so effective in both diseases. Obviously, Tegretol has to be non-generic. Carbamazepine, which is the generic name of Tegretol, does not do any good for either condition. Neurontin is also not as effective as the true, brand-name Tegretol. The neuropathic pain also causes temperature changes in the extremities in both diseases.
2. However, the RSD requires three other conditions to meet the minimum requirement of diagnosis of RSD. In other words, simple neuropathic pain is not enough for the diagnosis of RSD.
3. The other three conditions, other than the neuropathic pain, are:
 - A. Reflex constriction of the muscles in the extremities in the form of flexor spasm, dystonia, tremor, or weakness of the extremities due to muscle spasm (Orbeli phenomenon).
 - B. Inflammation in the form of edema, swelling of the extremities, skin rash in the referred pain area away from the nerve damage, and neurodermatitis in the referred pain areas away from the nerve damage.

In addition, in RSD the inflammation can cause trophic changes of the skin and hair, as well as inflammation of pain in the synovia and bursa of the joints. Such changes are usually not seen in simple Diabetic Neuropathy. So, if there are the above mentioned manifestations of inflammation, then we are not dealing with simple Diabetic Neuropathy, but the complication of RSD.

C. The disturbance of the limbic system in RSD is more persistent and more resistant to treatment with anti-depressants.

The above three criteria (A, B, and C), added to the neuropathic pain, form the four minimal principles of the diagnosis of RSD. Bone scan cannot be used as a diagnostic tool for either of the two diseases, because in RSD bone scan is abnormal in only half of the cases and bone scan is usually normal in Diabetic Neuropathy. Thermography cannot be used to differentiate between the two conditions because Thermography is abnormal in any type of neuropathic pain be it RSD, Diabetic Neuropathy, Shingles, or traumatic vascular injury without RSD.

In regard to treatment, the treatment is the same in both conditions. The best, most effective treatment consists of the anticonvulsants mentioned above, along with proper anti-depressants such as Desipramine and Trazodone, but not Elavil. Elavil causes fatigue and weight gain, which is not good for either of the conditions.

Finally, if you suffer from both Diabetic Neuropathy and RSD, or if you suffer only from Diabetic Neuropathy, it is imperative that you do not take heavy doses of insulin because hypoglycemia due to large doses of insulin damages the nerves in the brain and in the extremities. It is best to be conservative in regard to the doses of insulin.

More important than insulin is the "Four F" diet, this is very beneficial for both diseases. This consists of fresh fruit, fresh vegetables, fresh fish, and fresh fowl; a minimum of four meals a day and a snack at bedtime consisting of a low fat dairy product combined with a small amount of bread and a fruit, avoidance of the "Five C's": candy, cookies, cake, chocolate, and cocktails. The "Five C's", especially chocolate, aggravate both conditions. Avoidance of processed visceral type of meat such as liver, kielbasa, sausage, and hot dogs is very helpful.

H. Hooshmand, M.D.

RSD PUZZLE #101
SURGICAL RESECTION AND RSD"

Question:

Dear Dr, Hooshmand,

I had a nerve resection in March 1997; my foot pain is worse, horrendous. Will it ever calm down?

Betty

Answer:

Dear Betty,

As early as the 1950's and 1960's the medical researchers extensively covered the subject of surgical resection and cutting of the nerves for relief of pain. The medical researchers proved that these surgical treatments almost always aggravate the pain and suffering. They result in the formation of neuromas, which are a bundle of twisted nerves at the edge of the area where the nerve has been cut. The neuroma is due to growth of the cut nerve into the scar of surgery. This forms the bundle of abnormally grown nerves, which becomes extremely sensitive. The end result is practically always the patient becoming much worse. In the case of RSD type of pain, it is one of the commonest causes of CRPS (Complex Regional Pain Syndrome / RSD) to spread to other regions of the body. This spread commonly is manifested as it spreads from the arm, to the neck, to the occipital region of the head, causing severe occipital neuralgia, or vice versa. In other cases, the spread causes the CRPS to expand from the leg to the arm on the same side or the opposite side.

Over the past 5-10 years, there is a new generation of pain managers, who have not had any neurosurgical training, have resurrected these operations with obvious disastrous results.

These operations consist of the nerve resection that they did in your case, called neurectomy. These operations are frequently done by podiatrists for removal of a "Neuroma," which is usually an imaginary diagnosis because the biopsy sample of the surgical removal, instead of showing Neuroma, usually shows nothing but the inflammation of RSD. Other forms are neurotomy, rhizotomy, phenol and alcohol block, and radio frequency surgery.

The only form of these operations that provide temporary relief, and only temporary relief, is rhizotomy in the patients that have brachial plexus injury and pain. Even that operation will not have any long standing beneficial effect.

Please make sure that your doctor does not try to keep cutting upward on the rest of the trunk of the same nerve. The results are going to be absolutely disastrous.

H. Hooshmand, M.D.

RSD PUZZLE #102

Ice Versus Heat

In our study of ice versus heat tolerance, 87% of the patients could not tolerate cold, and 13% could not tolerate heat.

The infrared thermal imaging showed that the ones who could not tolerate heat (13 %) had advanced stages of sympathetic nerve paralysis rather than nerve irritation (death of the sympathetic nerve fibers rather than hyperactive nerve fibers). The area of permanent sympathetic nerve damage in late stage acted like a leaky radiator, causing leakage of heat through the skin which resulted in warm extremity and secondary intolerance to external heat. Meaning that due to permanent damage to the sympathetic nerve fibers (after repeated ganglion nerve blocks or sympathectomy) the sympathetic nerves could not contain and preserve the heat originating from the deep structures of muscle, bone, etc... This minority of 13% of the patients did not have the hyperactive cold vasoconstriction of the skin seen in earlier stages of RSD. These heat intolerant patients would be classified as erythromelalgia, rather than the 87% RSD patients who have hyperactive sympathetic function with cold extremity and intolerance of cold exposure.

On the other hand repetitive application of ice freezes and coagulates the myelin (fatty tissue insulating large nerve fibers) exactly like ice freezes and solidifies melted butter. As the ice freezes the large nerve fibers, causing freeze damage to the myelinated nerves, the patient develops sensory loss and pain due to permanent damage to the large sensory nerve fibers. This aggravates the RSD by adding sensory nerve pain of non-sympathetic origin to the initial thermal sensory pain of sympathetic origin.

As a result, Ice provides total anesthesia and relief of pain for several minute the same way as the hand becomes numb being exposed to snowballs in the winter. However, a few hours after the cessation of ice exposure, the pain recurs with vengeance due to reactive enlargement of blood vessels after the constriction of blood vessels due to exposure to ice.

This phenomenon causes excellent relief of pain with ice treatment followed by not only aggravation of pain, but damage to the nerve fibers adding sympathetic independent pain (SIP) to the original sympathetic mediated pain (SMP).

The end result is aggravation of the RSD and SIP resulting in failure of nerve blocks and then the patient is told, "You do not have RSD anymore because the nerve block did not help you and the Phentolamine test proved that you do not have SMP or RSD."

In most RSD patients ice makes the condition worse and can cause denial of diagnosis and treatment for the patient.

One last comment: this study was on advanced cases of RSD. In early stages of RSD, without exposure to ice, there is far lower percentage of RSD patients who from the beginning suffer from permanent damage to large areas of sympathetic nerve fibers with intolerance of heat and secondary erythromelalgia.

It becomes obvious that heat-cold challenge physical therapy is nonsensical because its end result is one temperature extreme neutralizing the other and ice challenge further damaging nerve fibers.

Please stay away from any ice exposure, even if you can not tolerate heat.

H. Hooshmand, M.D.

RSD PUZZLE #103

"Good Days and Bad Days"

Neurovascular Instability of RSD

1. Reflex Sympathetic Dystrophy (CRPS) is due to dysfunction of sympathetic nervous system. The sympathetic nerves function in a dynamic fashion- at times being hyperactive and at other times being hypoactive. This is in regard to control of circulation and control of the immune system. From day to day the sympathetic control of circulation may fluctuate. This is usually in the form of neurovascular instability, meaning one day the hand or foot is bluish red, and the next day it is so white it looks like it is dead. The immune system control may undergo up-regulation or down regulation: one day the patient is feverish, and the next day the patient is "ice cold".

2. Another factor causing "good and bad days" is the fact that stress of RSD causes demand for the protective benefit of estrogens. The stress of RSD, as well as periodic fluctuations of opioids, causes hot flashes and severe fatigue in women of 20-80 years of age. This demand for estrogen to improve the function of immune system is easily corrected by estrogen therapy.

3. The third factor, partial arrest of sex and growth hormones formation due to large doses of narcotics, also cause fluctuation in daily course of RSD. Switching from opioids agonists (e.g. duragesic) to antagonists (e.g. buprenex) corrects this condition.

H. Hooshmand, M.D.

RSD PUZZLE # 104

Alcohol Blocks And Chemical Sympathectomy

Alcohol blocks which are chemical blocks in the form of phenol, alcohol, etc., are the most dangerous and destructive forms of nerve blocks. They are also called "lytic" blocks which better describe them. The term "lytic" refers to "lysis" which refers to a meltdown of every soft tissue in the target area of the block including nerves, connective tissue, etc. This destruction is not limited to the area of injection-because nothing keeps the alcohol to destroy only "bad nerves", but it also destroys the adjacent perfectly normal nerves. Incidentally, intervention or destructive lytic nerve blocks or sympathectomy are done on no "bad nerve". There is no such thing as "bad nerve". The nerve is nothing but the conveyer of the impulse. In RSD (CRPS), the disease originates from microscopic sensory nerves in the wall of the small blood vessels. The large trunk of the nerve fibers that are the target of nerve blocks or sympathectomy, are just the messengers. Destroying the messenger is not going to solve the problem, but it is going to add a new source of pain. Alcohol causes extensive scar formation of the soft tissues including the nerves and such scar formation becomes a new source of severe pain far worse than the original pathology. Alcohol blocks, sympathectomy, or neurectomy (cutting nerve fibers) only adds assault to the injury. Such destructive procedures relieve the pain for a few weeks to a maximum two months, only for the pain to return with more intensity and in a larger area of the body.

Any destruction of nerve fibers should be definitely avoided. These procedures are all doomed to fail and are dangerous.

On the other hand, performing epidural nerve blocks or paravertebral nerve blocks which flood the nerves in the muscle or in epidural space with a combination of local anesthetic and a small amount of anti-inflammatory medication (such as Depo- Medrol ®, Kenalog, or Celestone) do not destroy the nerves. They simply block the input of painful chemical such as substance P from the extremity into the spinal cord. They don't anatomically destroy any of the nerve fibers and they provide excellent relief lasting anywhere from 2-3 months. In the meantime, during those 2-3 months proper physical therapy and massage and other measures should preclude the necessity of repeating such nerve blocks in at least 80% of the patients.

Not only the surgical procedures, chemical sympathectomy and neurectomy should be avoided, but also application of ice on the extremity by the virtue of destroying the myelin covering of the nerve (the protective sheaths of the nerve) should be definitely avoided.

All the above statements refer to benign, complex, chronic pain. Obviously, if the patient suffers from cancer and has a few months to live, any of these blocks will give the patient a few months of relief and are palliative. In cancer patients any surgical procedure that gives a temporary relief to the patient is justifiable, humane, and should be done. CRPS (RSD) patients do not suffer from cancer. They are quite young. They have 4-5 decades of live ahead of them, and should not be exposed to such destructive procedures which cause more pain than the original disease.

H. Hooshmand, M.D.