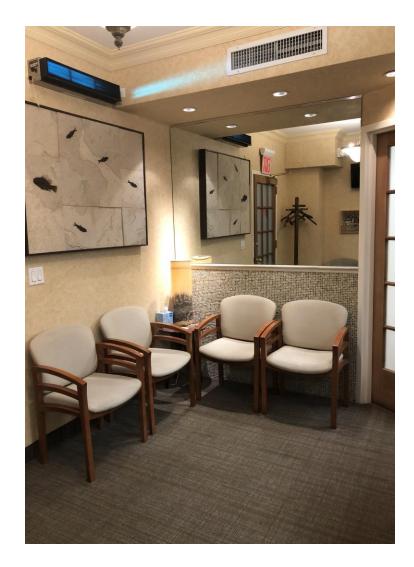
# CRPS AND DENTAL CARE; NON-PHARMACOLOGIC AND PHARMACOLOGIC TECHNIQUES

Louis Siegelman, DDS, Diplomate of the American Dental Board of Anesthesiology

July 2020



#### THE SAFE DENTAL ENVIRONMENT

- Living life in pain and seeking relief, seeking health, and seeking health care providers that are sensitive and responsive to the needs of CRPS patients.
- Finding a home
- Trust
- Covid 19 safe





# CAN CRPS SPREAD TO THE FACE AFTER DENTAL CARE?

- Study to determine patterns of spread of CRPS and the factors that are associated with spread. Results show that CRPS usually affects one limb but in some cases it spreads to another limb, most often in a contralateral (53%) or ipsilateral (32%) pattern and usually without secondary trauma.
- Feb 18, 2011https://www.ncbi.nlm.nih.gov>pmc
- Spreading of complex regional pain syndrome: not a random process NCBI
- CRPS can spread



#### THERE IS A RISK OF PATIENTS DEVELOPING SECONDARY CRPS WITH OR WITHOUT AN INCITING EVENT

 Ellen S. Satteson et al, "The risk of pain syndrome affecting a previously non-painful limb following trauma or surgery in patients with a history of complex regional pain syndrome," *Scandinavian Journal of Pain*: Vol. 14 (January 2017): 84-88 <u>http://www.scandinavianjournalpain.com/article/S1877-8860(16)30118-5/fulltext</u>



#### **VITAMIN C AND PREVENTING CRPS NATIONALPAINREPORT.COM** POSTED ON OCTOBER 14, 2017 BY JENNY PICCIOTTO

- Vitamin C is a simple, inexpensive preventative measure. Reduces the risk of developing CRPS. May decrease pain in established CRPS. "Vitamin C is currently established as the most efficacious preventative therapy for the development of CRPS."
- "Vitamin C appears effective in preventing post-operative CRPS I," and recommends taking 500 mg for 50 days after surgery.
- Anitra C. Carr and Cate McCall, "The role of vitamin C in the treatment of pain: new insights," *Journal of Translational Medicine*, (2017 Apr 14): 15(1):77 <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5391567/#\_ffn\_sectitle</u>
- Jean Luc Besse et al, "Effect of Vitamin C on prevention of complex regional pain syndrome Type 1 in foot and ankle surgery," *Foot and Ankle Surgery* Vol. 15(4), (Dec 2009): 179-182 <u>http://rsds.org/wp-</u> <u>content/uploads/2015/02/Besse FootAnkSurg 2009.pdf</u>



### CRPS, DENTAL CARE, COVID-19

- CRPS also affects the immune system. High levels of inflammatory chemicals (cytokines) have been found in the tissues of people with CRPS. These contribute to the redness, swelling, and warmth reported by many patients. CRPS is more common in individuals with other inflammatory and autoimmune conditions such as asthma. Mar 13, 2020
- https://www.ninds.nih.gov > Disorders
- <u>Complex Regional Pain Syndrome Fact Sheet | National Institute of Neurological Disorders</u> and Stroke



#### POST COVID SYNDROME

- FPN: Upon contracting COVID-19, some patients have experienced an increase in their PN-related symptoms. Is there any evidence to suggest why symptoms would heighten?
- Dr. Höke: This is not unexpected. Many PN patients report similar "flare-ups" of their symptoms with influenza or other types of viral infections. This is likely to be due to heightened sensitivity of the sensory nerve fibers rather than an indication that there is actual, ongoing new damage to the nerve cells. However, we still do not know if the COVID-19 virus can infect the nerve cells or not. Our assessment of this may change in the future.
- https://www.foundationforpn.org/2020/05/06/ask-the-expert-peripheralneuropathy-and-covid-19-copy/



#### HELPING YOUR DENTIST UNDERSTAND YOUR HEALTH HISTORY



- Detailed written narrative with current medications, allergies, idiosyncratic reactions
- Origin of CRPS
- Dates of surgeries, and health care providers
- What do you want your doctor to know about you?



#### RSDS.ORG DENTAL GUIDELINES FOR CRPS/RSD PATIENTS; HANDLE WITH CARE

 Complex Regional Pain Syndrome (CRPS), previously known as Reflex Sympathetic Dystrophy (RSD), is a
"neuro-inflammatory" condition causing the nervous and immune systems to malfunction, sending constant pain
signals to the brain. CRPS is characterized by severe burning pain, pathological changes in bone and skin, excessive
sweating, tissue swelling, and extreme sensitivity to touch. The McGill Pain Scale rated CRPS higher than childbirth, amputation, and cancer pain. Those with CRPS are extraordinarily sensitive to certain stimuli, such as touch, movement, vibrations, noise, light, and needle sticks. Tips for Patients 🗆 Carry a copy of the RSDSA Hospital, Emergency, Dental Guidelines, along with the "I HAVE CRPS" card, to validate and educate practitioners. 🗆 Hand the following to your dentist: o A computer printout of your detailed medical history sinceyour 1st episode of CRPS, including the precipitating event. o Your treatments for CRPS and treating physicians. List of any allergies-List of current medications prescribed, OTC, specialty compounded medications (dosage & frequency). o List of any AIMD (active implantable medical devices) SCS (spinal cord simulators), pain pumps, cardiac pacemakers, defibrillator, stents, and monitoring devices. o List of any implants: breast, cochlear (ear), intra-ocular lens(eye), heart valves, contraceptive, prosthesis, etc. o List of any organ transplants. Research practicesspecializing in treating patients with chronic pain conditions (American Dental Association) and willing to learn about CPRS. http://rsds.org/crps-and-dentistry/ Be patient while educating your dental team: dentist, dentist anesthesiologist, periodontist, orthodontist, dental assistants/hygienist, lab technicians, etc. To prevent losing YOUR teeth and maintain YOUR overall health, begin with a comprehensive dental evaluation to develop a treatment plan to suit YOUR needs as a CRPS patient. Share any dental and oral health issues including: o Allergic reactions or sensitivities to dental products oringredients o Burning mouth, dry mouth, erosion, dental decay, chronicmouth inflammation/irritation, orthodontics, muscle issues of the head, neck and jaw, the tongue, or salivary glands changes. Develop YOUR daily oral hygiene plan with practitioner including: o Type of toothbrush i.e. soft bristleo Use of mouthwash and or moisturizing sprayo Use of flosso Adopt a Health dental diet and take vitamins (approved by your doctor)99 Cherry Street Milford, CT 06460 Toll-free:877.662.7737 info@rsds.org http://rsds.orgTips for Medical Professional: 2 Online Accredited Courses on CRPs



#### LISTENING TO THE PATIENT UNDERSTANDING THEIR NEEDS



- Patients use different language to express their needs
- Language could reflect pain anxiety or sensory issues, and can identify what pharmacological would be most appropriate
  - Sensory issues can be overwhelming in the dental environment and heighten perception of pain
- Knowing the patients concerns and identifying the needed dental work determines the plan of care



#### NUTRITION; PEOPLE DO THINGS THAT THEY FEEL ARE HEALTHFUL BUT MAY NEGATIVELY IMPACT THEIR DENTAL HEALTH

- Beverages; acid beverages such as fruit juices, or sparkling beverages like soda (even seltzer) can promote tooth decay, or dramatically increase the sensitivity of teeth.
- Habits; frequency of eating or sipping fluids can effect pattern of tooth decay.
- Sugar from candy, coffee, tea increase sensitivity and promotes tooth decay.





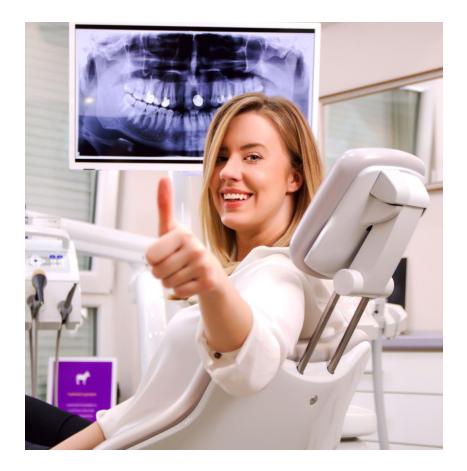
#### SALIVA

- A mineral bath for teeth
- Recharges teeth with lost minerals
- Lack of saliva can dramatically effect tooth decay
- Lack of saliva can be caused by pain, depression, anxiety and the medications to treat these things, as well as meds for hypertension
- Opiates, Vyvanse (amphetamines) are particularly damaging to teeth



#### PREVENTION

- Home care
- Professional services
- Frequency of recalls
- Flouride toothpaste
- Remineralizers





#### **AVOID OVER TREATMENT**

- Emphasize preventative care
- Maximize home care
- Seek minimally invasive or non-invasive care
- Optimize pain, and anxiety control

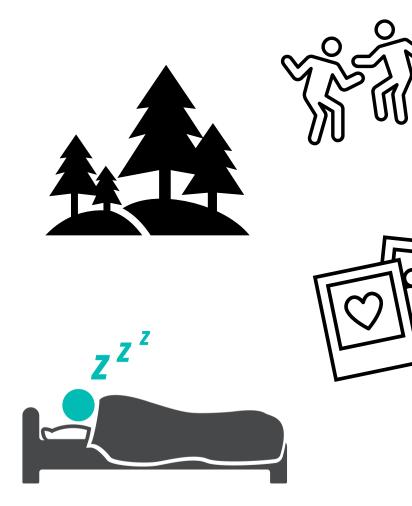


#### HOME CARE

- Flossing
- Water Pik
- Manual dexterity
- Suction devices
- Brush but don't rinse the goodies in the toothpaste away
- Should use a flouride containing toothpaste







#### NATUROPATHIC HEALING

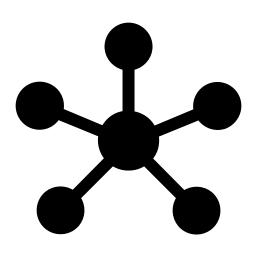
- Sleep
- Forest Bathing
- Socialization
- "Lost Connections" by Johann Hari, discusses depression, and unexpected solutions



#### OCCLUSAL GUARDS







#### MULTIPLE MODES OF PAIN CONTROL OR MULTI MODAL PAIN THERAPY

Address as many pain pathways as possible



#### NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE; DRUGS USED TO TREAT CRPS

- bisphosphonates, such as high dose alendronate or intravenous pamidronate
- non-steroidal anti-inflammatory drugs to treat moderate pain, including over-the-counter aspirin, ibuprofen, and naproxen
- corticosteroids that treat inflammation/swelling and edema, such as prednisolone and methylprednisolone (used mostly in the early stages of CRPS)
- drugs initially developed to treat seizures or depression but now shown to be effective for neuropathic pain, such as gabapentin, pregabalin, amitriptyline, nortriptyline, and duloxetine
- botulinum toxin injections
- opioids such as oxycodone, morphine, hydrocodone, and fentanyl. These drugs must be prescribed and monitored under close supervision of a physician, as these drugs may be addictive.
- N-methyl-D-aspartate (NMDA) receptor antagonists such as dextromethorphan and ketamine, and





#### WHAT MEDICATIONS WORK BEST TO CONTROL PAIN FOR CRPS PATIENTS FOR DENTAL CARE?



- Gabapentinoids
- Opiates
- Corticosteroids
- NSAIDS
- Acetaminophen
- Anxiolytics
- Alpha-2 agonists



#### ROUTES OF DRUG ADMINISTRATION DETERMINE THE AVAILABLE PHARMACOLOGY

- Oral Administration
- Parenteral
- IM
- IV
- Intranasal





#### TREATMENT OPTIONS

- Nonpharmacologic
- Pharmacologic
- Local anesthesia
- Buffered local anesthetics
- Nitrous oxide
- Oral medications
- Oral sedation
- IV sedation
- General anesthesia





#### KETAMINE

- Available intranasally, orally, intravenously
- Phenomenal short term pain control
- Controversial benefits long term
- Altered sensorium must be masked



#### KETAMINE AND CRPS

- 25 patients with long standing severe CRPS were given ketamine infusions (up to 200 mg) during surgery, and a series of booster infusions after.
- "ketamine ... was successful in reducing pain and blocking spread in severely affected long-standing patients." The infusion protocol, which includes the use of clonidine .1 mg, midazolam and and ondansetron 4mg for nausea
- Schwartzman RJ et al, "Ketamine as Adjunctive Anesthesia in Refractory Complex Regional Pain Syndrome Patients: A Case Series, *J Clinical Case Reports*, 2:186 (Aug. 2012) <u>http://rsds.org/wp-content/uploads/2015/02/Ketamine-Adjunctive-Adju</u>



#### PRE-OP PAIN CONTROL

- NSAIDS
- Corticosteroids
- Anxiolytics
- Antibiotics
- Gabapentinoids
- Cannabis







#### PATIENT POSITIONING

- Orthopnea
- Cervical pillows
- Lumbar support
- Egg crates

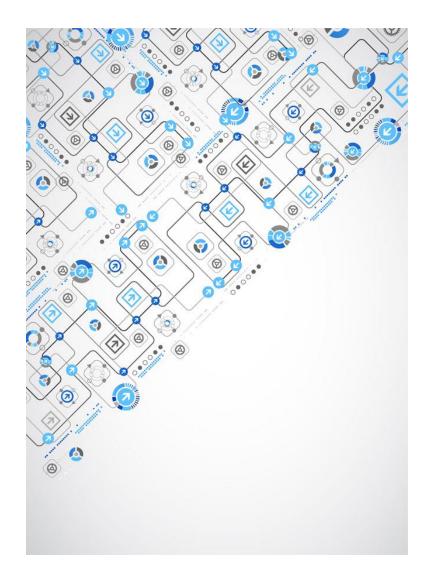


#### POSTOP PAIN CONTROL

- NSAIDS
- Opiates
- Acetaminophen
- Gabapentinoids
- Cannabis
- Alpha 2 agonists







#### A COMPREHENSIVE APPROACH

- Multifaceted
- Multimodal



#### **RESOURCES AND FINDING A DENTIST NEAR YOU**

- American Dental Board of Anesthesiology (ASDAHQ.org)
- National Dental Board of Anesthesiology
- American Board of Orofacial Pain
- American Academy of Orofacial Pain





## LOUIS SIEGELMAN DDS

Dentalphobia.com (212) 974-8737 Drs@dentalphobia.com 119 W.57th Street, NYC

Questions? We are here to help!