NEUROPATHY

NERVE DAMAGE

A chronic and disabling illness with unpredictable pain, reduced mobility and/or independence.

Sylvia Donley, MN © December, 2010
Peripheral neuropathy is a disorder of the peripheral nerves.

The motor, sensory and autonomic nerves that connect the spinal cord to muscles, skin and internal organs.
OCCURRENCE

- 8% of the world population
- 15-20% of cancer patients have neuropathic pain
- more than 50% of diabetics will have neuropathic pain
- 1 in 15 people in Canada live with Neuropathy
- 0-20 yrs = 3%       30-40 yrs = 27%
- 50-60 yrs = 55%     70-80 yrs = 15%
- Leprosy is the #1 cause in developing countries.
TYPES OF NEUROPATHY

- Autonomic
- Cancer related
- Compressive
- Hereditary
- Diabetic
- Drug induced and Toxic
- G.I. and Nutrition
- Immune mediated and CIDP
- Infectious
- Neuropathic Pain
- Idiopathic
AUTONOMIC

- Orthostatic Hypotension (low blood pressure upon standing)
- Autonomic dysfunction of the gastrointestinal tract (stomach and bowel)
- Peripheral autonomic dysfunction of the urinary bladder
CANCER RELATED

- Toxic neuropathy caused by chemotherapy agents
- Tumor cells can directly infiltrate or compress the peripheral nerves
- Immune reaction to a protein present in both tumor cells and the peripheral nerves
COMPRESSIVE

- Often referred to as Mono-neuropathy
- Usually caused by trauma, local compression or inflammation
- Carpal tunnel
- Bell’s Palsy
- Sciatica
- Angulation and stretch injuries
- Thoracic outlet syndrome
DIABETIC

• Occurs in both Type I and Type II

• At least 50% of people with diabetes live with some form of neuropathy
DRUG INDUCED AND TOXIC

- Industrial agents
- Medications
- Toxins
G.I. and NUTRITION

- Results from nutritional deficiencies
- Alcoholism
- Resection/bypass surgery
- Crohn’s disease
- Celiac disease
- Inflammatory bowel disease
HEREDITARY

- Charcot-Marie-Tooth
- Familial Amyloidotic Neuropathy
- Hereditary Porphyria
IMMUNE-MEDIATED

- Guillain Barre Syndrome
- Vasculitic
- Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
INFECTIONOUS DISEASES

- Human Immunodeficiency Virus (HIV) infection
- Lyme disease
- Leprosy
- Herpes zoster neuropathy (shingles and post-herpetic neuralgia)
- Hepatitis C
- Herpes simplex neuritis
- Diphtheric neuritis
- Chagas’ disease
NEUROPATHIC PAIN

• Nerve itself is the source of the pain.
• Result of injury, stroke, disease or congenital conditions involving the brain and/or spinal cord
• Nerve injury (often post-surgical) Complex Regional Pain Syndrome (CRPS)
  aka Reflex Sympathetic Dystrophy (RSD)
IDIOPATHIC

- 30% of all neuropathies do not have a clinical diagnosis as to cause.
DIAGNOSIS

- History
- Family history
- EMG – determines if it’s axonel or demyelinating, determines rate of conduction
- Lab work – metabolic, nutritional, toxic, Ca, rheumatologic, etc.
- Quantitative Sensory testing
- Skin biopsy
SIGNS & SYMPTOMS

- Sensory Nerves: affect sensation
- Motor Nerves: affect muscles
- Autonomic Nerves: affect internal organ function
- Sensations are usually worse at night, and sometimes become extremely painful and severe.
SENSORY NERVES

- **Paresthesia**: Spontaneous sensations – pain, numbness, tingling, cramping, itching, electric shock, pinching, weakness, loss of balance, irregular gait.

- **Dysesthesia**: Abnormal sensations when you touch something – burning, freezing, losing your balance.

- **Anesthesia**: Feeling nothing at all.
MOTOR NERVES

- Muscle cramps
- Weakness
- Imbalance
- Poor coordination (gait)
- Decrease reflexes
AUTONOMIC NERVES

- Syncope
- Vision
- Bowel/bladder
- Sweating
- GI disturbance (stasis-lack of motility, pain, vomiting, disabling, weight loss)
- Cardiac (autoimmune) impaired control of heart rate and blood pressure, light headedness, fatigue, palpitations
- Sexual dysfunction
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ADDITIONAL SYMPTOMS

- Emotional symptoms
- Mood dysfunction
- Depression
- Anxiety
- Sleep Dysfunction: RLS, pain, sleep apnea, insomnia
- Cognitive Concerns – confusion, slow processing
- Medication side effects: nausea, dizzy, sleepy, weight gain, edema, addiction, tolerance, constipation
TREATMENTS

GOAL
To: maintain, regain function and quality of life

- Analgesics
- Anticonvulsant (anti-seizure)
- Antidepressant
- Topical
- CIDP specific
- CAM (Complimentary/Alternative Medicine)
ANALGESICS

- Opioids: Oxycodone (Oxycontin), Tramadol
- Fentanyl (Duragesic Transdermal System)
- Methadone
- NSAIDS, Ibuprofen, Aleve, Acetaminophen
ANTICONVULSANTS

- Gabapentin (Neurontin)
- Pregabalin (Lyrica)
- Oxacarbazine (Trileptal)
- Topiramate (Topomax)
- Lamotrigine (Lamictal)
ANTIDEPRESSANTS

- Duloxetine (Cymbalta)
- Amitriptyline (Elavil)
- Nortriptyline (Pamelor)
- Venlafaxine (Effexor)
TOPICAL

- Lidocaine patch
- Capsaicin (Zostrix)
CIDP specific treatment

- IViG – Intravenous Gammaglobulin (prevent the immune system from attacking nerves)
- Plasma Exchange (removes the antibodies from circulation that attack nerves)
- Corticosteroids (more severe, long term side effects)
CAM Complementary/Alternative Medicine

- Traditional Chinese
- Mind / Body Interventions: prayer, yoga, biofeedback, meditation, Tai Chi,
- Manipulative: chiropractic, massage, physiotherapy
- Biologically based: herbs, minerals, protein, nutritional supplements, pre/probiotics etc
- Energy Therapies: Reiki, Qi Gong, distant healing, therapeutic touch, magnetic, acupuncture, prayer
**TIPS**

- The pain is real: Listen, validate
- Identify abilities prior to surgery to assess post op recovery
- Restart meds a.s.a.p. post-op
- Endurance issues – pace
- Cognitive concerns with instructions
- Support in decision making
- Encourage focus on ‘managing recovery’ not ‘the pain’ or ‘neuropathy’
- Ice water or extremely cold compresses can cause damage to small nerve fibres
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Tips con’t

- Teach CAM: meditation, visualization, deep breathing, techniques to alter pain perception i.e distraction, negative thoughts to positive
- Ask: What are your greatest concerns regarding your pain? Ask: What do you believe is the best way to manage your pain?
- Keep covers light, role back or tent at feet
- Don’t assume you can touch a body part –sensitivity
- Know pain tends to be worse at night
- Foot care: check circulation, pressure points
- Encourage awareness/understanding/research in neuropathy
- Living Well Program – refer
OTHER TREATMENTS

- Nerve blocks
- Spinal cord stimulator, intrathecal pump
- TENS (Transcutaneous Electrical Nerve Stimulator)
- Massage, Physio
- Foot care
- Loose socks
- Well-fitted, comfortable shoes
- Rest/pace
- Braces, assistive devices, gait aids, mobility devices
JUST THE BEGINNING...

- Thank you for your interest in learning about Neuropathy
- Encourage others to learn about neuropathy and get involved in awareness, understanding, treatment, and research

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