The Interventional Pain Doctor’s Collaborative Role in Diagnosis, Treatment, and Triage of Head & Neck Cancer Pain Patients

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• Grunenthal – research grant (CRPS Phase II trial)
• Semnur – research grant (C.L.E.A.R. trial)
COMPREHENSIVE CARE

ONCOLOGIST

- Pain & Symptom Team
- Complex Cancer Pain
- Radiation Oncology
- Surgical Oncology
- Functional Neurosurgery
### Success Secrets

<table>
<thead>
<tr>
<th>Multi-disciplinary clinic</th>
<th>Pain Management Physician Located in the Cancer Clinic</th>
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</thead>
<tbody>
<tr>
<td>Multi-disciplinary meetings</td>
<td>Pain &amp; Supportive Oncology weekly meeting</td>
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<tr>
<td>1. weekly</td>
<td>Interventional Cancer Pain Board monthly</td>
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<tr>
<td>2. monthly</td>
<td></td>
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<tr>
<td>Easy Access</td>
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</tr>
<tr>
<td>1. Nurse navigator</td>
<td>1. Cancer Pain Nurse Coordinator</td>
</tr>
<tr>
<td>2. Shared number</td>
<td>2. Cancer Pain Line</td>
</tr>
<tr>
<td>Protocols for care pathways</td>
<td>i.e. Trigeminal Neuralgia</td>
</tr>
<tr>
<td>Collegial and Collaborative</td>
<td>share cell #’s, support each other</td>
</tr>
<tr>
<td></td>
<td>celebrate successful collaboration</td>
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</tbody>
</table>
Outline

I. Why consider other options (interventional)
II. The first next step: the goals of care
III. Example 1. Radiation fibrosis
IV. Example II. Trigeminal neuralgia
V. Example III. Cervical spondylosis
VI. Summary
I. WHY CONSIDER OTHER OPTIONS? MALIGNANCY AND PAIN

- 25% of those newly diagnosed
- 33% of those undergoing active treatment
- 75% of those with advanced disease
- Chronic pain in cancer survivors post-treatment is estimated at 75%
II. THE FIRST NEXT STEP: CONSULTATION TO PAIN SPECIALIST

1. To enable treatment

2. After treatment (NED), to improve QOL
   • painful sequelae of chemo/radtx/sx

3. Treatment is no longer an option
   • for palliative QOL goals
Type 1. Nociceptive Pain - pain that occurs when nociceptors are activated

- skeletal (arthritis, postoperative mechanical)
- muscle (myofascial - fibrosis)
THE TYPES OF PAIN

Type II. Inflammatory Pain – pain that occurs due to local inflammation

- local tumor invasion
- myositis
- joint inflammation (arthritis)
- postoperative wound
- post-treatment effects (radiation)
Type III. Neuropathic Pain – pain that occurs due to nerve injury

- diabetes
- radiation / chemo - neuritis
EXAMPLE 1: RADIATION FIBROSIS

Myelo-radiculo-plexo-neuromyopathy

Radiation induced:
  • dystonia
  • fibrosis
  • neuritis
EXAMPLES 1: RADIATION FIBROSIS

- triggers inflammation
- stimulates transdifferentiation of fibroblasts into myofibroblasts
- myofibroblasts produce excess collagen, extracellular matrix
Directly correlates with

- increased radiation dose
- hypofractionation (fewer fractions require greater doses)
- increased field size
- prolongation of therapy

Worsened with

- concurrent use of chemotherapy
- surgical management
Occurs 4–12 months after radiation therapy

- skin induration and thickening
- muscle shortening and atrophy
- limited joint mobility
Interventional Pain Treatment + Physiotherapy

Physiotherapy
- reducing lymphedema
- preserve motion

Interventional
- trigger point injections
- botulinum toxin A injection
- radiofrequency lesion (RFL)
Level 1 evidence for targeted treatment of neuropathic pain

Subcutaneous Injection of Botulinum Toxin A Is Beneficial in Postherpetic Neuralgia

Lizu Xiao, MD, Sean Mackey, MD, PhD, Hui Hui, PhD, Donglin Xong, MD, Qian Zhang, MD, Deren Zhang, MD

Pain Medicine, Volume 11, Issue 12, 1 December 2010, Pages 1827–1833,
https://doi.org/10.1111/j.1526-4637.2010.01003.x

Botulinum toxin for facial neuralgia

Debra K Fischoff & Silvia Spivakovksy

Evidence-Based Dentistry 19, 57–58 (2018) | Download Citation

Botulinum toxin for myofascial pain syndromes in adults

Adriana Soares, Régis B Andriolo, Álvaro N Atallah, Edina MK da Silva

First published: 25 July 2014
Editorial Group: Cochrane Pain, Palliative and Supportive Care Group
Patient with cTxN2cMo Tonsil SCCa

- combined chemoIMRT approach
- 6 months later – no evidence of disease (2014)

Just severe PAIN
25 patients with refractory trigeminal neuralgia due to malignancy/sequela of treatment identified by their oncologist and referred to interventional pain triaged by a multidisciplinary algorithm:

1. Fluoroscopic guided block with local anesthetic and steroid for diagnostic and therapeutic benefit
2. If durable benefit obtained, ongoing conservative treatment was continued on an as-needed basis
3. Short-term benefit (<1 week), referral made to either functional neurosurgery (NS), for radiofrequency ablation (RFA) or balloon neurolysis, or for stereotactic radiosurgery (SRS) of the trigeminal nerve root entry zone
4. When malignancy precluded either approach, brainstem ligation of the trigeminal nerve was pursued by neurosurgery

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Oncologist
medical management

Pain Specialist
diagnostic block
treatment blocks

Neurosurgeon
2nd, 3rd order neuron treatment
25 patients with refractory trigeminal neuralgia

1. fluoroscopic guided block with local anesthetic and steroid for diagnostic and therapeutic benefit

2. if durable benefit obtained, ongoing conservative treatment was continued on an as-needed basis
3. Only short-term benefit (<1 week)?
   - referral made to functional neurosurgery (NS)
     - radiofrequency ablation (RFA)
     - balloon neurolysis
     - stereotactic radiosurgery (SRS)

4. Malignancy precluding these approaches?
   - neurosurgery:
     - brainstem ligation of the trigeminal nerve
25 patients with **severe refractory** trigeminal neuralgia

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</tr>
<tr>
<td>No relief from block (no further treatment)</td>
<td>4</td>
</tr>
<tr>
<td>Long term relief with block</td>
<td>12</td>
</tr>
<tr>
<td>Short term relief with block (further triaged)</td>
<td>4</td>
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<tr>
<td>• radiation oncology (stereotactic radiosurgery)</td>
<td>o 1</td>
</tr>
<tr>
<td>• neurosurgery (RFA, DREZ, ligation)</td>
<td>o 3</td>
</tr>
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16/20 treated – durable pain relief
EXAMPLE 3 - CERVICAL SPONDYLOSIS
Arthritis of the neck (spondylosis)
Arthritis of the neck (spondylosis)

Occipital neuralgia (C2, C3)
EXAMPLE 3 – CERVICAL SPONDYLOSIS

Arthritis of the neck (spondylosis)

Occipital neuralgia (C2, C3)

Step 1: diagnostic block

Step 2: treatment (steroid, or radiofrequency ablation)
The Effectiveness and Risks of Fluoroscopically-Guided Cervical Medial Branch Thermal Radiofrequency Neurotomy: A Systematic Review with Comprehensive Analysis of the Published Data.

Engel A¹, Rappard G², King W³, Kennedy DJ⁴; Standards Division of the International Spine Intervention Society.

Systematic Review of Radiofrequency Ablation and Pulsed Radiofrequency for Management of Cervicogenic Headaches.

Grandhi RK¹, Kaye AD², Abd-Elsayed A³.
SUMMARY

• There is little evidence-based literature for interventional pain in oncology

• Traditional treatments for head and neck pain are applied in the same manner to oncology patients

• Interventional options can play a role in:
  1. Enabling cancer treatment
  2. Improving QOL in cancer survivors
  3. Palliating persistent severe pain in dying patients
Chemotherapy induced peripheral neuropathy (CIPN)


Radiation Fibrosis

- Park J, Park HJ: Botulinum Toxin for the Treatment of Neuropathic Pain. Toxins (Basel) 2017; 9
REFERENCES

Cervical Radiofrequency Ablation (RFA) for head and neck pain


Botox


