

Voice Recovery in Radiation-Induced Inflammatory Laryngitis Using Hyperbaric Oxygen



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Introduction

- Radiation-induced laryngeal damage remains a difficult clinical problem with limited treatment options.
- In severe cases patients may require tracheostomy, partial laryngectomy or total laryngectomy.

Case Study

- 63-year old woman with a history of T2 N0 M0 squamous cell carcinoma of glottic larynx
- Treated with 70 Gy of intensity-modulated radiation therapy 10 months before hyperbaric visit
- Three months after completing radiation therapy she developed progressive throat pain, ear pain, hoarseness, and dyspnea
- Exam showed diffuse supraglottic edema with granulation
- No focal evidence of recurrent tumor on clinical exam

Labs

- No evidence of recurrent tumor on PET/CT.
- WBC 7.05, ESR 40 and CRP 1.2

Treatment

- She was treated with proton pump inhibitors, antibiotics, steroids, and narcotics with only temporary improvement in her symptoms.
- She began a course of hyperbaric treatments at 2.4 ATA

Treatment Response

- Patient kept a log of pain medication use. Plot of oxycontin use over time shown in Figure 1.

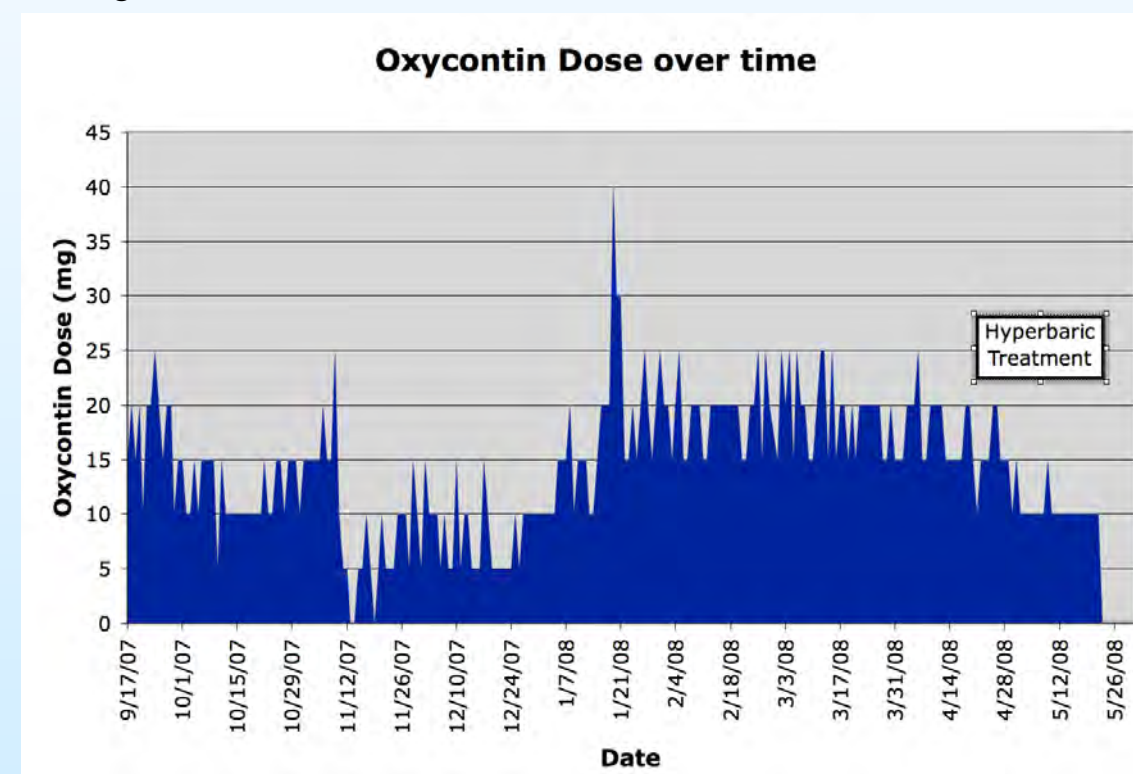


Figure 1. Pain medication use over time. Use of narcotics started to decline after hyperbaric treatments begun. Eventually, patient was able to reduce narcotic use to only prn use.

Results

- Her voice improved over the course of the treatment.
- The sample recordings below provide a voice sample prior to treatment and one after treatment.

Pre-treatment voice sample

Post-treatment voice sample

Conclusion

- Hyperbaric therapy can provide improvement in patients with refractory radiation injury after treatment for laryngeal carcinoma.