Hyperbaric Oxygen Therapy for Radiation Injuries

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About half of all cancer patients receive some type of radiation therapy at some point in the course of their treatment. While designed to kill cancer cells and improve survival rates, radiation therapy can also cause injury to healthy bone and tissue.

Hyperbaric Oxygen Therapy (HBOT) has been used to treat patients with radiation injuries since the mid-1970s. It is one of the FDA- and UHMS-approved indications and is generally covered by insurance.

Treatment of Radionecrosis

One complication of radiation therapy is radionecrosis, the death of cells in bones, organs, and soft tissues. Side effects of radiation therapy may not present a health problem for months or even years after treatment. These are referred to as delayed radiation injuries and often stem from scarring and restricted blood flow near the tumor treatment site.

HBOT is widely accepted as an effective treatment for delayed radiation injuries. Common treatment sites include the jaw, neck, and pelvis. HBOT benefits for patients suffering from delayed radiation injuries include promotion of tiny new blood vessels that grow in and around the radiation site, which increases the amount of oxygen-rich blood that can reach the affected area. It also decreases swelling around the radiation site, which allows the blood to flow more freely and improves oxygenation to the area, which is important because high oxygen levels increase the ability of infection-fighting white blood cells to kill bacteria. Patients who received radiation to the head and neck region may experience a reduction in saliva, affecting speech and swallowing. Some hyperbaric patients have found that salivation improves during their course of treatment.

Prevention and Treatment of Osteoradionecrosis

Osteoradionecrosis (ORN) is bone that has died as a complication of radiation therapy. Damage to the small arteries reduces circulation to the area, depriving it of oxygen and other necessary nutrients. This reduction in circulation is gradual, and the damage may take many months or years to appear.

If surgery to the affected area is required, the wound may not heal. Oxygen delivered at hyperbaric pressures has been shown to produce new blood vessels in the irradiated area and to stimulate wound healing. This results in long-term improvement in the quality of the tissue. In cases of established osteoradionecrosis, studies show an improvement in 83% of patients treated with hyperbaric oxygen.

Hyperbaric oxygen is also given to radiation patients as a preventative measure to stop ORN from occurring following dental extraction. Studies have shown that the chance of getting ORN is reduced to just 5% in patients treated with hyperbaric oxygen, compared to 28% in patients who did not receive HBOT.

Among the benefits of HBOT in the treatment and prevention of radionecrosis are vascular improvement, expedited healing of ORN, better tolerance to oral surgery, prevention of mandibular necrosis as a result of tooth extraction, restoration of mandibular function, and maintenance of intact mucosa and skin over all bone.

Symptom Relief in Latent or Internal Radiation Injuries

There are several types of latent radiation injury, including radiation cystitis or proctitis in bladder or prostate cancer patients, causing urinary frequency, pain, burning, or bleeding. Radiation tissue injury can occur after mastectomy and surgical reconstruction, posing a higher risk of post-operative complications due to poor circulation in the radiated area, which can result in open sores on the chest that will not heal. Dental and/or jawbone problems can occur following head and neck surgery for cancer, causing open sores, multiple cavities, or jaw fractures. Bowel problems or bleeding is common after colon cancer and radiation, causing diarrhea, urgency, incontinence, and rectal bleeding.

HBOT is FDA approved for latent or internal radiation injuries and has been successful in relieving the symptoms that many patients have experienced following radiation treatment.

Impact of Treatment Environment on Successful Outcomes

Studies have shown that a relaxing and peaceful environment can be instrumental in the healing process. That's why we at Oxygen Oasis Hyperbaric Wellness Center in Langhorne have worked to create an environment that is both soothing and conducive to effective treatment. By combining a state-of-the-art hyperbaric center featuring both monoplace and multiplace chambers with a soothing environment run by caring physicians and staff, we are able to provide maximum peace of mind for patients. While such things may seem like a luxury to some, we understand that a tranquil, stress-free environment is integral to the healing process.

Upon entering our center, patients immediately notice how different it is compared to the treatment environment they may have experienced previously. From the visually appealing, spa-like setting to our warm, compassionate staff, every aspect of the center is designed to create a calming treatment atmosphere conducive to healing.

Oxygen Oasis has been granted accreditation from the Joint Commission, the premier health care quality improvement and accrediting body in the nation, meaning the center has met all of the Joint Commission's high standards for quality and safety. With our caring staff, flexible scheduling, easy access, and ample free parking, Oxygen Oasis is an excellent alternative to the traditional hospital setting.

Please visit www.o2oasis.com for a library of evidence-based studies and reviews of hyperbaric medicine. You can also view the full range of services available, as well as information about what to expect before, during, and after treatment with HBOT. Browse the profiles of our staff and use the Contact Us section for any questions or to schedule an appointment.