Radiation Therapy for Benign Conditions

Radiation therapy uses high energy x-rays to stop cancer cells from dividing. It does this by damaging the DNA of the cells and eventually, these cells will die. Radiation can be used to treat some malignant (cancerous) conditions and some benign (non-cancerous) conditions.

What benign conditions can be treated with radiation?

There are benign conditions that are treated with radiation. These include:

- Graves ophthalmopathy, or thyroid eye disease.
- Orbital pseudotumor (swelling of tissue behind the orbit of the eye).
- Meningioma (tumors involving the lining of the brain).
- Trigeminal neuralgia (5th cranial nerve pain).
- Acoustic schwannomas (inner-ear tumors).
- Keloids (raised scar).
- Heterotopic bone formation (extra bone formed after orthopedic surgery).

What type of radiation is used to treat benign conditions?

External beam radiation therapy can be used to treat benign conditions. Examples of external beam radiation used are stereotactic radiosurgery (SRS), photon radiation therapy, or proton radiation therapy.

Photochemotherapy or PUVA therapy is another form of radiation therapy used to treat benign conditions. It uses photosensitizing medications with ultraviolet radiation. It is used to treat many different skin conditions such as psoriasis and eczema.

What are the risks of radiation therapy?

Radiation can damage normal cells in the same way it damages cancer cells. Damage to healthy cells can increase the risk of cancer in the area(s) that were treated. How high the risk depends on the amount of radiation (dose) you received.

External Beam Radiation Therapy

External beam radiation therapy goes deeper into the body, exposing other areas in the beam path to radiation. This can include:

- Skin.
- Muscle.
- Bone.
- All organs, tissues, or structures in the beam path.

While the risk of cancer from external beam radiation is low, if you have received this therapy, you should be aware of the risk and call your healthcare provider if you have any changes in the treatment area, such as non-healing wounds, lumps, or any new or worsening pain.

PUVA Therapy

In PUVA therapy, the radiation reaches the skin but does not go into the body. This therapy increases the risk of skin cancer in the area(s) treated. If you have received PUVA therapy, you should:
- Make your healthcare provider aware of this.
- Have routine skin exams.
- Become familiar with your skin and do your own skin checks.
- Report any changes to your skin to your healthcare provider.

If you have any questions about radiation treatment, make sure to talk to your provider.