

## Radiotherapy in the treatment of benign disease

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Radiotherapy (RT) has proven to be an effective treatment modality in oncology, which includes not only malignant but also benign pathology. Its applicability offers therapeutic benefits when other approaches are insufficient or infeasible for both adult and paediatric cases [1,2]. The incidence of benign conditions requiring RT is relatively low compared to malignant cases but is clinically significant due to the potential impact on quality of life, providing a non-invasive alternative. RT stood out last year in the treatment of Vestibular Schwannoma, Villonodular Synovitis, Vertebral Haemangioma, Craniopharyngioma (paediatric) and Splenic Myelofibrosis carried out at Unidade Local de Saúde de São João. Technological advancements in this area, such as radiosurgery or stereotactic RT, have further enhanced the safety and efficacy of treatments, reducing long-term complications associated with radiation exposure [1–3]. Central to achieving ideal results are immobilization, planning images, dosimetric plans and the application of treatment. The different immobilization devices guarantee patient stability and reproducibility during treatment, avoiding inadvertent movements that could compromise targeting accuracy. The combination and fusion of different planning images, including Computed Tomography, Magnetic Resonance Imaging, or Positron Emission Tomography, provide detailed anatomical and pathological information for accurate delineation. Dosimetric plans translate this data into highly individualized treatment, balancing effective dose delivery to the target with rigorous protection of surrounding healthy tissue. The incorporation of image verification before and during treatment allows real-time adjustments, further enhancing accuracy and reducing the risk of unintended exposure [1,3]. In summary, RT for benign conditions is a meticulously coordinated effort involving patient preparation, advanced imaging, precise planning, and accurate delivery. These elements work synergistically to ensure safe, effective, and reproducible treatments, improving patient outcomes and quality of life. Long-term studies and continual innovation will further enhance its role, solidifying its position as a reliable and sophisticated therapeutic option in benign oncology.

**Keywords:** Benign; Oncology; Radiotherapy; Planning; Treatment;

### References

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