



Research Article

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Evaluation of Tumor Size Changes Following Systemic Treatment for Melanoma Brain Metastases (MBM)



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Abstract

Objective: While melanoma accounts for a small proportion of all skin cancers, it is responsible for the overwhelming majority of skin cancer related mortality. Brain metastasis is not uncommon in advanced melanoma, and surgery, radiation therapy (RT), and systemic agents may be used about patient, disease, and treatment characteristics. While management of melanoma brain metastases (MBM) has been an area of active investigation, optimal integration of systemic therapies with local treatments appears to be a viable strategy to improve clinical outcomes. Herein, I assessed tumor size changes following systemic therapy for MBM.

Materials and Methods: Our department has served as a tertiary cancer center for patients from Turkey and abroad for decades. A plethora of benign and malignant tumors have been irradiated here by modernized equipment and sophisticated RT approaches such as IGRT, IMRT, ART, stereotactic RT, automatic segmentation techniques, and molecular imaging methods. In the designing of this study, my primary endpoint was evaluation of tumor size changes following systemic therapy for MBM. To investigate this critical issue, patients with MBM having available imaging data were analyzed. All patients included received systemic treatment and were referred for irradiation. I have performed a comparative analysis for tumor sizes at CT scans of the patients before and after systemic treatment. Tumor size changes after systemic treatment were documented for comparative assessment and analysis.

Results: As the primary endpoint of this study, I found a considerable decrease in tumor sizes after systemic treatment for patients with MBM.

Conclusion: My findings support the potential benefit of systemic therapies in reducing intracranial tumor burden in MBM patients. However, further prospective studies are needed to validate these results and optimize treatment integration strategies in this patient population.

Keywords: Melanoma; Brain metastasis; Systemic treatment; Image Guided RT; Radiation therapy

Abbreviations: IGRT Image Guided RT; ART: Adaptive RT; RT: Radiation Therapy; MBM: Melanoma Brain Metastases; SRS: Stereotactic Radiosurgery; IMRT: Intensity Modulated RT

Introduction

Skin cancers are among the most common form of all malignancies worldwide. While melanoma accounts for a small proportion of all skin cancers, it is responsible for most of the skin cancer-related mortality [1-3]. Melanoma is derived from the malignant transformation of melanocytes, and melanocytes are derived from the neural crest which renders the possibility of melanomas arising in the skin and other locations where neural crest cells migrate, such as the gastrointestinal tract and brain. Brain metastasis is not uncommon in advanced melanoma, and

surgery, radiation therapy (RT), and systemic agents may be used regarding patient, disease, and treatment characteristics [4-7]. While management of melanoma brain metastases (MBM) has been an area of active investigation, optimal integration of systemic therapies with local treatments appears to be a viable strategy to improve clinical outcomes. Within this context, immunotherapy and systemic agents might be utilized for MBM, and many studies have been exploring future revenues to improve patient care.

From the perspective of radiation oncology, whole brain irradiation and stereotactic radiosurgery (SRS) techniques may be considered for management of MBM. Recent years have witnessed critical advances in technology which may have contributed to improved radiotherapeutic results. Automatic segmentation techniques, Image Guided RT (IGRT), molecular imaging methods, Intensity Modulated RT (IMRT), stereotactic RT, and adaptive RT (ART) have all been incorporated for improving the therapeutic efficacy [8-106]. In context of cancer management, optimal therapeutic results may ultimately be achieved through close collaboration among related disciplines. As a matter of fact, multidisciplinary tumor boards may contribute to collaboration among surgical oncologists, radiation oncologists, and medical oncologists by providing an excellent platform for discussing about patient, tumor, and treatment characteristics along with contemplated outcomes of suggested therapeutic strategies. Systemic therapy constitutes an indispensable component of MBM management. Herein, I assessed tumor size changes following systemic therapy for MBM.

Materials and Methods

Our department has served as a tertiary cancer center for patients from Turkey and abroad for decades. A plethora of benign and malignant tumors have been irradiated here by modernized equipment and sophisticated RT approaches such as IGRT, IMRT, ART, stereotactic RT, automatic segmentation techniques, and molecular imaging methods. In the designing of this study, my primary endpoint was evaluation of tumor size changes following systemic therapy for MBM. To investigate this critical issue, patients with MBM having available imaging data were analyzed. All patients included received systemic treatment and were referred for irradiation. I have performed a comparative analysis for tumor sizes at CT scans of the patients before and after systemic treatment. Tumor size changes after systemic treatment were documented for comparative assessment and analysis.

Results

This study was designed to explore tumor size changes after systemic therapy for MBM. All included patients have been individually assessed by a multidisciplinary team of experts from surgical oncology, medical oncology, and radiation oncology before management. Patients with MBM having available imaging data were included. Selected patients initially received systemic therapy. I performed a comparative analysis for tumor sizes at CT scans of the patients before and after systemic treatment. Tumor size changes after systemic treatment were documented to be used for comparative analysis. As the primary endpoint of this study, I found a considerable decrease in tumor sizes after systemic treatment for patients with MBM.

Discussion

Skin cancer represents the most common group of malignancies worldwide. Although melanoma accounts for a relatively small

proportion of skin cancer diagnoses, it is responsible for most skin cancer-related deaths [1-3]. Melanoma originates from the malignant transformation of melanocytes, which themselves are derived from neural crest cells. This embryologic origin enables melanoma to arise not only in the skin but also in other sites of neural crest cell migration, such as the gastrointestinal tract and brain. Brain metastases are a well-recognized complication in advanced melanoma. Their management may involve surgery, radiation therapy (RT), and systemic treatments, with decisions guided by patient condition, disease burden, and treatment goals [4-7].

Among the evolving strategies, integrating systemic therapies with local treatments has emerged as a promising approach to improve outcomes in MBM. Immunotherapy and other systemic agents have become central to MBM management, and ongoing research continues to explore innovative strategies to enhance therapeutic efficacy. From the perspective of radiation oncology, treatment options include whole-brain radiation therapy and SRS. Recent technological advances such as IGRT, IMRT, stereotactic and adaptive RT, automatic segmentation, and molecular imaging have contributed significantly to improving the precision and effectiveness of radiation delivery [8-100]. Effective management of MBM requires a multidisciplinary approach. Tumor boards that include surgical, medical, and radiation oncologists provide a collaborative platform to tailor treatment strategies based on patient-specific clinical, pathological, and radiological factors.

Systemic therapy plays an essential role in the management of MBM. In this study, I aimed to evaluate changes in tumor size following systemic treatment in patients with MBM. Our department serves as a tertiary referral center, treating patients from across Turkey and internationally. A wide range of benign and malignant tumors have been treated here using advanced radiation technologies, including IGRT, IMRT, ART, stereotactic RT, automatic segmentation tools, and molecular imaging techniques. The primary objective of this study was to analyze tumor size changes following systemic therapy in patients with MBM who had available imaging data. All patients included received systemic treatment and were subsequently referred to for radiation therapy.

Tumor sizes were measured using CT scans obtained before and after systemic therapy, and a comparative analysis was performed to assess the extent of change. Each patient was evaluated by a multidisciplinary team comprising surgical, medical, and radiation oncologists prior to treatment planning. The study focused on documenting and analyzing tumor size reduction as a response to systemic therapy. Notably, I observed a significant reduction in tumor size following systemic treatment among the included MBM cases. These findings support the potential benefit of systemic therapies in reducing intracranial tumor burden in MBM patients. However, further prospective studies are needed to validate these results and optimize treatment integration strategies in this patient population.

Conflict of Interest

There are no conflicts of interest and no acknowledgements.

References

1. Siegel RL, Kratzer TB, Giaquinto AN, Sung H, Jemal A (2025) Cancer statistics, 2025. *CA Cancer J Clin* 75(1): 10-45.
2. Sadeq MA, Ashry MH, Ghorab RMF, Afify AY (2023) Causes of death among patients with cutaneous melanoma: a US population-based study. *Sci Rep* 13(1): 10257.
3. Didier AJ, Nandwani SV, Watkins D, Fahoury AM, Campbell A, et al. (2024) Patterns and trends in melanoma mortality in the United States, 1999-2020. *BMC Cancer* 24(1): 790.
4. Hasanov M, Acikgoz Y, Davies MA (2024) Melanoma Brain Metastasis: Biology and Therapeutic Advances. *Hematol Oncol Clin North Am* 38(5): 1027-1043.
5. Rishi A, Yu HM (2020) Current Treatment of Melanoma Brain Metastasis. *Curr Treat Options Oncol* 21(6): 45.
6. Caulfield JJ, Kluger HM (2022) Emerging Studies of Melanoma Brain Metastasis. *Curr Oncol Rep* 24(5): 585-594.
7. Eroglu Z, Topcu TO, Yu HM, Margolin KA (2022) How I treat brain metastases of melanoma. *ESMO Open* 7(6): 100598.
8. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2023) Adaptive radiation therapy (art) for patients with limited-stage small cell lung cancer (LS-SCLC): A dosimetric evaluation. *Indian J Cancer* 60(1):140-147.
9. Gamsiz H, Sager O, Uysal B, Dincoglan F, Demiral S, et al. (2023) Outcomes of Stereotactic Body Radiotherapy (SBRT) for pelvic lymph node recurrences after adjuvant or primary radiotherapy for prostate cancer. *J Cancer Res Ther* 19(Suppl 2): S851-S856.
10. Uysal B, Gamsiz H, Sager O, Dincoglan F, Demiral S, et al. (2022) Comparative outcomes of short-term and long-term fractionation with temozolomide in older glioblastoma patients: Single-center experience. *J Cancer Res Ther* 18(6): 1610-1615.
11. Gamsiz H, Sager O, Uysal B, Dincoglan F, Demiral S, et al. (2022) Active breathing control guided stereotactic body ablative radiotherapy for management of liver metastases from colorectal cancer. *Acta Gastroenterol Belg* 85(3):469-475.
12. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2022) Concise review of radiosurgery for contemporary management of pilocytic astrocytomas in children and adults. *World J Exp Med* 12(3): 36-43.
13. Sager O, Dincoglan F, Demiral S, Gamsiz H, Uysal B, et al. (2022) Optimal timing of thoracic irradiation for limited stage small cell lung cancer: Current evidence and future prospects. *World J Clin Oncol* 13(2): 116-124.
14. Demiral S, Sager O, Dincoglan F, Uysal B, Gamsiz H, et al. (2021) Evaluation of breathing-adapted radiation therapy for right-sided early stage breast cancer patients. *Indian J Cancer* 58(2): 195-200.
15. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2021) Omission of Radiation Therapy (RT) for Metaplastic Breast Cancer (MBC): A Review Article. *International Journal of Research Studies in Medical and Health Sciences* 6: 10-15.
16. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2021) Concise review of stereotactic irradiation for pediatric glial neoplasms: Current concepts and future directions. *World J Methodol* 11(3): 61-74.
17. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2020) Adaptive radiation therapy of breast cancer by repeated imaging during irradiation. *World J Radiol* 12(5): 68-75.
18. Sager O, Beyzadeoglu M, Dincoglan F, Demiral S, Gamsiz H, et al. (2020) Multimodality management of cavernous sinus meningiomas with less extensive surgery followed by subsequent irradiation: Implications for an improved toxicity profile. *J Surg Surgical Res* 6: 056-061.
19. Beyzadeoglu M, Sager O, Dincoglan F, Demiral S, Uysal B, et al. (2020) Single Fraction Stereotactic Radiosurgery (SRS) versus Fractionated Stereotactic Radiotherapy (FSRT) for Vestibular Schwannoma (VS). *J Surg Surgical Res* 6: 062-066.
20. Dincoglan F, Beyzadeoglu M, Sager O, Demiral S, Uysal B, et al. (2020) A Concise Review of Irradiation for Temporal Bone Chemodectomas (TBC). *Arch Otolaryngol Rhinol* 6: 016-020.
21. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2019) Utility of Molecular Imaging with 2-Deoxy-2-[Fluorine-18] Fluoro-D-Glucose Positron Emission Tomography (18F-FDG PET) for Small Cell Lung Cancer (SCLC): A Radiation Oncology Perspective. *Curr Radiopharm* 12(1): 4-10.
22. Dincoglan F, Sager O, Demiral S, Gamsiz H, Uysal B, et al. (2019) Fractionated stereotactic radiosurgery for locally recurrent brain metastases after failed stereotactic radiosurgery. *Indian J Cancer* 56(2): 151-156.
23. Sager O, Dincoglan F, Demiral S, Uysal B, Gamsiz H, et al. (2019) Breathing adapted radiation therapy for leukemia relapse in the breast: A case report. *World J Clin Oncol* 10(11): 369-374.
24. Dincoglan F, Sager O, Uysal B, Demiral S, Gamsiz H, et al. (2019) Evaluation of hypofractionated stereotactic radiotherapy (HFSRT) to the resection cavity after surgical resection of brain metastases: A single center experience. *Indian J Cancer* 56(3): 202-206.
25. Sager O, Dincoglan F, Uysal B, Demiral S, Gamsiz H, et al. (2018) Evaluation of adaptive radiotherapy (ART) by use of replanning the tumor bed boost with repeated computed tomography (CT) simulation after whole breast irradiation (WBI) for breast cancer patients having clinically evident seroma. *Jpn J Radiol* 36(6): 401-406.
26. Demiral S, Dincoglan F, Sager O, Uysal B, Gamsiz H, et al. (2018) Contemporary Management of Meningiomas with Radiosurgery. *Int J Radiol Imaging Technol* 80: 187-190.
27. Sager O, Dincoglan F, Uysal B, Demiral S, Gamsiz H, et al. (2017) Splenic Irradiation: A Concise Review of the Literature. *J App Hem Bl Tran* 1: 101.
28. Dincoglan F, Sager O, Demiral S, Uysal B, Gamsiz H, et al. (2017) Radiosurgery for recurrent glioblastoma: A review article. *Neurol Disord Therap* 1: 1-5.
29. Demiral S, Dincoglan F, Sager O, Gamsiz H, Uysal B, et al. (2016) Hypofractionated stereotactic radiotherapy (HFSRT) for WHO grade I anterior clinoid meningiomas (ACM). *Jpn J Radiol* 34(11): 730-737.
30. Dincoglan F, Beyzadeoglu M, Sager O, Demiral S, Gamsiz H, et al. (2015) Management of patients with recurrent glioblastoma using hypofractionated stereotactic radiotherapy. *Tumori* 101(2): 179-184.
31. Gamsiz H, Beyzadeoglu M, Sager O, Demiral S, Dincoglan F, et al. (2015) Evaluation of stereotactic body radiation therapy in the management of adrenal metastases from non-small cell lung cancer. *Tumori* 101(1): 98-103.
32. Sager O, Beyzadeoglu M, Dincoglan F, Demiral S, Uysal B, et al. (2015) Adaptive splenic radiotherapy for symptomatic splenomegaly management in myeloproliferative disorders. *Tumori* 101(1): 84-90.

33. Sager O, Dincoglan F, Beyzadeoglu M (2015) Stereotactic radiosurgery of glomus jugulare tumors: Current concepts, recent advances and future perspectives. *CNS Oncol* 4(2): 105-114.
34. Sager O, Beyzadeoglu M, Dincoglan F, Uysal B, Gamsiz H, et al. (2014) Evaluation of linear accelerator (LINAC)-based stereotactic radiosurgery (SRS) for cerebral cavernous malformations: A 15-year single-center experience. *Ann Saudi Med* 34(1): 54-58.
35. Demiral S, Beyzadeoglu M, Sager O, Dincoglan F, Gamsiz H, et al. (2014) Evaluation of Linear Accelerator (Linac)-Based Stereotactic Radiosurgery (Srs) for the Treatment of Craniopharyngiomas. *UHOD-Uluslararası Hematoloji Onkoloji Dergisi* 24(2): 123-129.
36. Sager O, Beyzadeoglu M, Dincoglan F, Gamsiz H, Demiral S, et al. (2014) Evaluation of linear accelerator-based stereotactic radiosurgery in the management of glomus jugulare tumors. *Tumori* 100(2): 184-188.
37. Ozsavaş EE, Telatar Z, Dirican B, Sager O, Beyzadeoglu M (2014) Automatic segmentation of anatomical structures from CT scans of thorax for RTP. *Comput Math Methods Med* 2014: 472890.
38. Demiral S, Beyzadeoglu M, Sager O, Dincoglan F, Gamsiz H, et al. (2014) Evaluation of linear accelerator (linac)-based stereotactic radiosurgery (srs) for the treatment of craniopharyngiomas. *UHOD - Uluslararası Hematoloji-Onkoloji Dergisi* 24: 123-129.
39. Gamsiz H, Beyzadeoglu M, Sager O, Dincoglan F, Demiral S, et al. (2014) Management of pulmonary oligometastases by stereotactic body radiotherapy. *Tumori* 100(2): 179-183.
40. Dincoglan F, Sager O, Gamsiz H, Uysal B, Demiral S, et al. (2014) Management of patients with ≥ 4 brain metastases using stereotactic radiosurgery boost after whole brain irradiation. *Tumori* 100(3): 302-306.
41. Sager O, Beyzadeoglu M, Dincoglan F, Demiral S, Uysal B, et al. (2013) Management of vestibular schwannomas with linear accelerator-based stereotactic radiosurgery: a single center experience. *Tumori* 99(5): 617-622.
42. Dincoglan F, Beyzadeoglu M, Sager O, Uysal B, Demiral S, et al. (2013) Evaluation of linear accelerator-based stereotactic radiosurgery in the management of meningiomas: A single center experience. *J BUON* 18(3): 717-722.
43. Dincoglan F, Beyzadeoglu M, Sager O, Oysul K, Kahya YE, et al. (2013) Dosimetric evaluation of critical organs at risk in mastectomized left-sided breast cancer radiotherapy using breath-hold technique. *Tumori* 99(1): 76-82.
44. Demiral S, Beyzadeoglu M, Uysal B, Oysul K, Kahya YE, et al. (2013) Evaluation of stereotactic body radiotherapy (SBRT) boost in the management of endometrial cancer. *Neoplasma* 60(3): 322-327.
45. Sager O, Beyzadeoglu M, Dincoglan F, Oysul K, Kahya YE, et al. (2012) Evaluation of active breathing control-moderate deep inspiration breath-hold in definitive non-small cell lung cancer radiotherapy. *Neoplasma* 59(3): 333-340.
46. Sağer Ö, Dinçoğlu F, Gamsiz H, Demiral S, Uysal B, et al. (2012) Evaluation of the impact of integrated [18f]-fluoro-2-deoxy-D-glucose positron emission tomography/computed tomography imaging on staging and radiotherapy treatment volume definition of nonsmall cell lung cancer. *Gulhane Med J* 54(3): 220-227.
47. Sager O, Beyzadeoglu M, Dincoglan F, Oysul K, Kahya YE, et al. (2012) The Role of Active Breathing Control-Moderate Deep Inspiration Breath-Hold (ABC-mDIBH) Usage in non-Mastectomized Left-sided Breast Cancer Radiotherapy: A Dosimetric Evaluation *UHOD - Uluslararası Hematoloji-Onkoloji Dergisi* 22(3): 147-155.
48. Dincoglan F, Sager O, Gamsiz H, Uysal B, Demiral S, et al. (2012) Stereotactic radiosurgery for intracranial tumors: A single center experience. *Gulhane Med J* 54(3): 190-198.
49. Dincoglan F, Beyzadeoglu M, Sager O, Oysul K, Sirin S et al. (2012) Image-guided positioning in intracranial non-invasive stereotactic radiosurgery for the treatment of brain metastasis. *Tumori* 98(5): 630-635.
50. Sirin S, Oysul K, Surenkok S, Sager O, Dincoglan F, et al. (2011) Linear accelerator-based stereotactic radiosurgery in recurrent glioblastoma: A single center experience. *Vojnosanit Pregl* 68(11): 961-966.
51. Dincoglan F, Demiral S, Sager O, Beyzadeoglu M (2024) Assessment of Changes in Tumor Size After Induction Systemic Therapy for Locally Advanced Cervical Squamous Cell Carcinoma Running title: Tumor size changes in cervical carcinoma. *Cancer Ther Oncol Int J* 26(1): 556178.
52. Beyzadeoglu M, Demiral S, Dincoglan F, Sager O (2024) Reappraisal of Target Definition for Sacrococcygeal Chordoma: Comparative Assessment with Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). *Biomed J Sci & Tech Res* 55(1): 46686-46692.
53. Dincoglan F, Beyzadeoglu M, Demiral S, Sager O (2024) Appraisal of Changes in Tumor Volume After Neoadjuvant Systemic Therapy for Hepatocellular Carcinoma (HCC). *Cancer Ther Oncol Int J* 26(2): 556184.
54. Beyzadeoglu M, Demiral S, Dincoglan F, Sager O (2023) Evaluation of Target Definition for Radiotherapeutic Management of Recurrent Merkel Cell Carcinoma (MCC). *Canc Therapy & Oncol Int J* 24(2): 556133.
55. Dincoglan F, Demiral S, Sager O, Beyzadeoglu M (2023) Reappraisal of Treatment Volume Determination for Recurrent Gastroesophageal Junction Carcinoma (GJC). *Biomed J Sci & Tech Res* 50(5): 42061-42066.
56. Beyzadeoglu M, Dincoglan F, Demiral S, Sager O (2023) An Original Article Revisiting the Utility of Multimodality Imaging For Refined Target Volume Determination of Recurrent Kidney Carcinoma. *Canc Therapy & Oncol Int J* 23(5): 556122.
57. Beyzadeoglu M, Demiral S, Dincoglan F, Sager O (2023) Appraisal of Target Definition for Recurrent Cancers of the Supralottic Larynx. *Biomed J Sci & Tech Res* 50(5): 42131-42136.
58. Beyzadeoglu M, Demiral S, Dincoglan F, Sager O (2022) Assessment of Target Definition for Extramedullary Soft Tissue Plasmacytoma: Use of Multimodality Imaging for Improved Targeting Accuracy. *Canc Therapy & Oncol Int J* 22(4): 556095.
59. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2022) Target Volume Determination for Recurrent Uterine Carcinosarcoma: An Original Research Article Revisiting the Utility of Multimodality Imaging. *Canc Therapy & Oncol Int J* 22(3): 556090.
60. Demiral S, Sager O, Dincoglan F, Beyzadeoglu M (2022) Reappraisal of Computed Tomography (CT) And Magnetic Resonance Imaging (MRI) Based Target Definition for Radiotherapeutic Management of Recurrent Anal Squamous Cell Carcinoma (ASCC): An Original Article. *Canc Therapy & Oncol Int J* 22(2): 556085.
61. Demiral S, Dincoglan F, Sager O, Beyzadeoglu M (2022) An Original Article for Assessment of Multimodality Imaging Based Precise Radiation Therapy (Rt) in the Management of Recurrent Pancreatic Cancers. *Canc Therapy & Oncol Int J* 22(1): 556078.
62. Sager O, Demiral S, Dincoglan F, Beyzadeoglu M (2022) Assessment of Target Volume Definition for Precise Radiotherapeutic Management of Locally Recurrent Biliary Tract Cancers: An Original Research Article. *Biomed J Sci & Tech Res* 46(1): 37054-37059.

63. Sager O, Demiral S, Dincoglan F, Beyzadeoglu M. (2022) Radiation Therapy (RT) Target Volume Determination for Locally Advanced Pyriform Sinus Carcinoma: An Original Research Article Revisiting the Role of Multimodality Imaging. *Biomed J Sci & Tech Res* 45(1): 36155-36160.
64. Demiral S, Sager O, Dincoglan F, Beyzadeoglu M (2022) Improved Target Volume Definition for Radiotherapeutic Management of Parotid Gland Cancers by use of Multimodality Imaging: An Original Article. *Canc Therapy & Oncol Int J* 21(3): 556062.
65. Beyzadeoglu M, Sager O, Demiral S, Dincoglan F (2022) Reappraisal of multimodality imaging for improved Radiation Therapy (RT) target volume determination of recurrent Oral Squamous Cell Carcinoma (OSCC): An original article. *J Surg Surgical Res* 8(1): 004-008.
66. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2022) Multimodality imaging-based treatment volume definition for recurrent Rhabdomyosarcomas of the head and neck region: An original article. *J Surg Surgical Res* 8(2): 013-018.
67. Dincoglan F, Demiral S, Sager O, Beyzadeoglu M (2022) Appraisal of Target Definition for Management of Paraspinal Ewing Tumors with Modern Radiation Therapy (RT): An Original Article. *Biomed J Sci & Tech Res* 44(4): 35691-35696.
68. Beyzadeoglu M, Sager O, Demiral S, Dincoglan F (2022) Assessment of Target Volume Definition for Contemporary Radiotherapeutic Management of Retroperitoneal Sarcoma: An Original Article. *Biomed J Sci & Tech Res* 44(5): 35883-35887.
69. Demiral S, Dincoglan F, Sager O, Beyzadeoglu M (2021) Assessment of Multimodality Imaging for Target Definition of Intracranial Chondrosarcomas. *Canc Therapy Oncol Int J* 18(2): 001-005.
70. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2021) Impact of Multimodality Imaging to Improve Radiation Therapy (RT) Target Volume Definition for Malignant Peripheral Nerve Sheath Tumor (MPNST). *Biomed J Sci Tech Res* 34(3): 26734-26738.
71. Sager O, Demiral S, Dincoglan F, Beyzadeoglu M (2021) Multimodality Imaging Based Treatment Volume Definition for Reirradiation of Recurrent Small Cell Lung Cancer (SCLC). *Arch Can Res* 9(1): 1-5.
72. Demiral S, Sager O, Dincoglan F, Beyzadeoglu M (2021) Radiation Therapy (RT) Target Volume Definition for Peripheral Primitive Neuroectodermal Tumor (PPNET) by Use of Multimodality Imaging: An Original Article. *Biomed J Sci & Tech Res* 34: 26970-26974.
73. Dincoglan F, Demiral S, Sager O, Beyzadeoglu M (2021) Evaluation of Target Definition for Management of Myxoid Liposarcoma (MLS) with Neoadjuvant Radiation Therapy (RT). *Biomed J Sci Tech Res* 33: 26171-26174.
74. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2021) Radiation Therapy (RT) target determination for irradiation of bone metastases with soft tissue component: Impact of multimodality imaging. *J Surg Surgical Res* 7(1): 042-046.
75. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2021) Evaluation of Changes in Tumor Volume Following Upfront Chemotherapy for Locally Advanced Non-Small Cell Lung Cancer (NSCLC). *Glob J Cancer Ther* 7: 031-034.
76. Sager O, Demiral S, Dincoglan F, Beyzadeoglu M (2021) Assessment of posterior fossa target definition by multimodality imaging for patients with medulloblastoma. *J Surg Surgical Res* 7: 037-041.
77. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2021) Assessment of the role of multimodality imaging for treatment volume definition of intracranial ependymal tumors: An original article. *Glob J Cancer Ther* 7: 043-045.
78. Beyzadeoglu M, Dincoglan F, Demiral S, Sager O (2020) Target Volume Determination for Precise Radiation Therapy (RT) of Central Neurocytoma: An Original Article. *International Journal of Research Studies in Medical and Health Sciences* 5: 29-34.
79. Dincoglan F, Demiral S, Sager O, Beyzadeoglu M (2020) Utility of Multimodality Imaging Based Target Volume Definition for Radiosurgery of Trigeminal Neuralgia: An Original Article. *Biomed J Sci & Tech Res* 26(2): 19728-19732.
80. Demiral S, Beyzadeoglu M, Dincoglan F, Sager O (2020) Assessment of Target Volume Definition for Radiosurgery of Atypical Meningiomas with Multimodality Imaging. *Journal of Hematology and Oncology Research* 3: 14-21.
81. Dincoglan F, Beyzadeoglu M, Demiral S, Sager O (2020) Assessment of Treatment Volume Definition for Irradiation of Spinal Ependymomas: an Original Article. *ARC Journal of Cancer Science* 6(1): 1-6.
82. Sager O, Demiral S, Dincoglan F, Beyzadeoglu M (2020) Target Volume Definition for Stereotactic Radiosurgery (SRS) Of Cerebral Cavernous Malformations (CCMs). *Canc Therapy & Oncol Int J* 15(4): 555917.
83. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2020) Treatment Volume Determination for Irradiation of Recurrent Nasopharyngeal Carcinoma with Multimodality Imaging: An Original Article. *ARC Journal of Cancer Science* 6(2): 18-23.
84. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2020) Assessment of Target Volume Definition for Irradiation of Hemangiopericytomas: An Original Article. *Canc Therapy & Oncol Int J* 17(2): 555959.
85. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2020) Evaluation of Treatment Volume Determination for Irradiation of chordoma: an Original Article. *International Journal of Research Studies in Medical and Health Sciences* 5(10): 3-8.
86. Demiral S, Dincoglan F, Sager O, Beyzadeoglu M (2020) Multimodality Imaging Based Target Definition of Cervical Lymph Nodes in Precise Limited Field Radiation Therapy (Lfrt) for Nodular Lymphocyte Predominant Hodgkin Lymphoma (Nlphl). *ARC Journal of Cancer Science* 6(2): 06-11.
87. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2020) Radiosurgery Treatment Volume Determination for Brain Lymphomas with and without Incorporation of Multimodality Imaging. *Journal of Medical Pharmaceutical and Allied Sciences* 9: 2398-2404.
88. Beyzadeoglu M, Dincoglan F, Sager O, Demiral S (2020) Determination of Radiosurgery Treatment Volume for Intracranial Germ Cell Tumors (GCTS). *Asian Journal of Pharmacy, Nursing and Medical Sciences* 8(3): 18-23.
89. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2020) Target Definition of orbital Embryonal Rhabdomyosarcoma (Rms) by Multimodality Imaging: An Original Article. *ARC Journal of Cancer Science* 6(2): 12-17.
90. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2020) Evaluation of Target Volume Determination for Irradiation of Pilocytic Astrocytomas: An Original Article. *ARC Journal of Cancer Science* 6(1): 19-23.
91. Demiral S, Beyzadeoglu M, Dincoglan F, Sager O (2020) Evaluation of Radiosurgery Target Volume Definition for Tectal Gliomas with Incorporation of Magnetic Resonance Imaging (MRI): An Original Article. *Biomedical Journal of Scientific & Technical Research (BJSTR)* 27: 20543-20547.
92. Beyzadeoglu M, Sager O, Dincoglan F, Demiral S (2019) Evaluation of Target Definition for Stereotactic Reirradiation of Recurrent Glioblastoma. *Arch Can Res* 7(1): 3.
93. Sager O, Dincoglan F, Demiral S, Gamsiz H, Uysal B, et al. (2019) Evaluation of the Impact of Magnetic Resonance Imaging (MRI) on Gross Tumor Volume (GTV) Definition for Radiation Treatment Planning (RTP) of Inoperable High-Grade Gliomas (HGGs). *Concepts in Magnetic Resonance*.

94. Sager O, Dincoglan F, Demiral S, Gamsiz H, Uysal B, et al. (2019) Utility of Magnetic Resonance Imaging (Imaging) in Target Volume Definition for Radiosurgery of Acoustic Neuromas. *Int J Cancer Clin Res* 6: 119.
95. Demiral S, Sager O, Dincoglan F, Beyzadeoglu M (2019) Assessment of Computed Tomography (CT) And Magnetic Resonance Imaging (MRI) Based Radiosurgery Treatment Planning for Pituitary Adenomas. *Canc Therapy & Oncol Int J* 13: 555857.
96. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2019) Multimodality Imaging for Radiosurgical Management of Arteriovenous Malformations. *Asian Journal of Pharmacy, Nursing and Medical Sciences* 7(1): 7-12.
97. Sager O, Dincoglan F, Demiral S, Beyzadeoglu M (2019) Evaluation of Radiosurgery Target Volume Determination for Meningiomas Based on Computed Tomography (CT) And Magnetic Resonance Imaging (MRI). *Cancer Sci Res Open Access* 5: 1-4.
98. Demiral S, Sager O, Dincoglan F, Beyzadeoglu M (2019) Assessment of target definition based on Multimodality imaging for radiosurgical Management of glomus jugulare tumors (GJTs). *Canc Therapy & Oncol Int J* 15: 555909.
99. Dincoglan F, Sager O, Demiral S, Beyzadeoglu M (2019) Incorporation of Multimodality Imaging in Radiosurgery Planning for Craniopharyngiomas: An Original Article. *SAJ Cancer Sci* 6: 103.
100. Demiral S, Sager O, Dincoglan F, Uysal B, Gamsiz H, et al. (2018) Evaluation of Target Volume Determination for Single Session Stereotactic Radiosurgery (SRS) of Brain Metastases. *Canc Therapy & Oncol Int J* 12: 555848.
101. Duzova M, Akin M (2022) Evaluation of survival outcomes and prognostic factors in acinic cell carcinomas of the parotid gland receiving adjuvant radiotherapy. *Anatolian Current Medical Journal* 4(3): 290-294.
102. Akin M, Duzova M (2022) Single fraction image guided radiation therapy for management of bone metastases during the COVID-19 pandemic. *Journal of Health Sciences and Medicine* 5(4): 961-965.
103. Akin M, Duzova M (2022) Evaluatin of Treatment Volume Determination for Anaplastic Oligodendrogliomas Based on Multimodality Imaging: An Original Article. *Celal Bayar Universitesi Saglik Bilimleri Enstitusu Dergisi* 9(3): 414-417.
104. Akin M (2022) Tobacco and lung cancer in elderly patients located in southern marmara: epidemiological study. *Celal Bayar Universitesi Saglik Bilimleri Enstitusu Dergisi* 9(2): 310-313.
105. Cinar D, Karadakovan A, Akin M (2022) Effects of Paper Marbling Art in the Cancer Rehabilitation Process: Descriptive Research. *Journal of Traditional Medical Complementary Therapies* 5: 132-142.
106. Cinkaya A, Akin M, Sengul A (2016) Evaluation of treatment outcomes of triple negative breast cancer. *Journal of Cancer Research and Therapeutics* 12(1): 150-154.



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