Conclusion: For the small lesions with a volume smaller than 4 cm³ the Agility shows a steeper gradient in the two surrounding rings than the MLCi1. Therefore we recommend the use of the Agility for treating the smaller lesions.

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Breast and regional lymph nodes RT: VMAT/RapidArc and Tomotherapy comparison

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Purpose or Objective: Two centers compared VMAT/RapidArc (RA) and Tomotherapy (TOMO), for the irradiation of breast and regional lymph nodes.

Material and Methods: Five left and five right breasts plus regional nodes have been contoured by two dedicated radiation oncologists. Two senior physicists checked the treatment plans studied by dedicated dosimetrists. The Anatom-e tool was tested for improving definition and avoiding interpersonal variability in the contouring. Prescription, according to ICRU, was 50 Gy in 25 daily fractions. We considered both lungs, the heart, the left anterior descending coronary artery (LAD), the contralateral breast and the thyroid as Organs at Risk (OAR). The dose constraints were: PTV V95=95%, ipsilateral lung V20 ≤20%, heart mean dose < 10 Gy, heart max dose < 35 Gy, LAD max dose ≤20 Gy, thyroid max dose < 45 Gy and contralateral breast max dose ≤5 Gy. We have studied the treatments in free breathing modality, perfectly aware of the higher dose received by heart and LAD in comparison to the respiratory-gated modality, routinely used in the RA center.

Results: We summarized the results of this comparison in Table 1.

Table 1. Left and right breast plus lymphnodes.

Conclusion: Both techniques allow a good coverage and dose uniformity for the PTV, with proper sparing of the OAR. TOMO