

Materials and Methods: A comparative study between two groups matched for age, surgical technique, size, nodal status and adjuvant treatment was performed. The control group received conservative surgery and standard EBRT 50-60 Gy in 5-6 weeks. The experimental group received conservative surgery with IMIMBI for perioperative PBI 34 Gy in 10 fractions.

Results: A total of 160 patients, 80 in control group and 80 in the experimental were analyzed. The median age and follow up were 56 vs. 60 years ($p > 0.05$) and 55 vs. 33 months ($p < 0.05$), respectively. Surgical technique in control vs. experimental group includes Lumpectomy alone in 10% of each group, lumpectomy with sentinel lymph node dissection in 82% vs 88% and lumpectomy with axillary dissection in 5% vs. 1%, respectively. The median tumor size was 11 mm vs. 12 mm in control and experimental group, and all patients were pN0. Median number of catheters were 9 (6-14), double plane implant in 100%, median D90 of 3.3 Gy median V100 and V150 of 35 and 10 cc respectively with DHI 0.72. Minor complication (infection, seroma, bleeding) were recorded in 14 patients (8.7%) seven in each group and major complication (reintervention due to bleeding or dehiscence) in 2 patients (1.2%) one in each group. Median operative time, hospital stay and time from surgery to end of radiation were 97' (range 27'-309') vs. 123' (range 72'-234'), 2 days for each group and 130 vs. 11 days in the control and experimental groups respectively. No local failure or distant failure were observed and excellent cosmetics results were recorded in more than 80% of both groups.

Conclusions: The optimal time to perform MIT is intraoperative because is safe, fast, effective and provides a significant improvements in logistical issues like reduction in overall locoregional treatment. Also allows to take advantage of excellence in dosimetry derived of MIT avoiding a second invasive procedure.

PO-1013

CTV definition in perioperative breast brachytherapy with closed cavity for APBI

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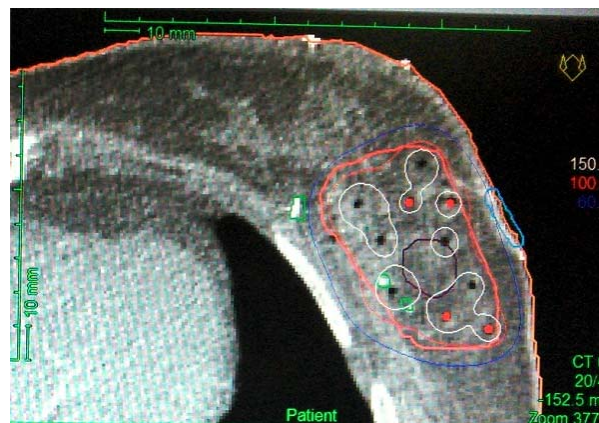
Purpose/Objective: Accelerated partial breast irradiation (APBI) is used increasingly. Clinical Target Volume (CTV) definition with multicatheter implant is not easy when closed cavity technique is used for breast conserving therapy. A perioperative implant allows us to know the right location of the tumour bed and CTV. We analyze clinical and dosimetric aspects of CTV definition with perioperative brachytherapy for APBI.

Materials and Methods: We review 10 cases of women with low risk breast carcinoma that underwent conserving surgery. During the same procedure, with the opened cavity, a perioperative multicatheter implant with parallel plastic tubes was performed, using the reference of the surgeon to place the tubes at the exact position. One central catheter, or guide-tube, was inserted perpendicular to the skin scar at the bottom where the tumour was located, and then the

surgeon closed the cavity usually marked with clips. The rest of the tubes were inserted forming triangles in two or three planes to cover a security margin. A planning CT scan was performed 2-4 days later. The area above the guide-tube was drawn with central clips if present, and a margin of 1-1.5cm was expanded avoiding 1cm from skin and pectoral muscle. The resulting volume was adjusted to cover the lateral plastic tubes with a margin of a few mm to obtain the CTV. The prescription dose was 4 Gy to the CTV per eight fractions twice a day.

Results: Four patients required nine catheters in two planes and six patients 10-12 catheters in three planes. The mean CTV volume was 83.9cc (67.7-116.6cc). Mean dose non-uniformity ratio (DNR) was 0.32 (0.28-0.35). Mean dose to the 90% of the CTV (D90) was 4.04Gy. Maximum dose per fraction to the lung was 1.75Gy (0.75-2.28Gy), and to the heart in 5 left breasts was 1 Gy (0.65-1.3Gy). Clips were placed in six cases and half of them were far from the implanted area and were not included in the CTV. In six cases several small air cavities were detected some of them outside of the CTV area.

Conclusions: Perioperative implants are the most exact way to define the right CTV. The guide-tube is a good system to define the central area of the CTV in the planning CT when the cavity is closed. Clips and small air cavities are related to the area manipulated by the surgeon, the surgical bed, but are not always useful to define the tumour bed, which is the real area to be irradiated (Fig 1). With perioperative brachytherapy, less number of catheters are required and the CTV volume is smaller than usual with postoperative multicatheter technique for APBI.



Poster: Brachytherapy track: Gynaecology

PO-1014

OAR Intra/interfraction dose variability in tandem-ovoids MRI/CTguided brachytherapy for cervical cancer

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Purpose/Objective: To estimate intra- and inter-fraction HRCTV and OAR dose variability in two consecutive day IGABT