

Dear Readers,

Let me present a new JCB issue, which, as usual, contains diverse articles. In this issue, you may find some new brachytherapy (BT) data on rectal cancer, prostate cancer, gynecological malignancies, non-small cell lung cancer, and rapidly developing technology of 3D printing. The JCB 2/2024 issue (March/April) contains ten manuscripts: six clinical papers, one physics contribution, one preliminary report, one case report, and a review.

I wish to start with a comprehensive review on 3D printing (3DP) in skin cancer brachytherapy, submitted by Polish authors Michał Póltorak *et al.* As we can currently experience, 3DP is revolutionizing BT by allowing the manufacturing of custom-designed applicators adjusted to unique shapes of skin tumors and body curvatures. BT using 3DP has several advantages over traditional planning methods. Some of them are intuitive, whereas others emerge from this literature review. I highly recommend reading this paper and other 3DP-related and previously published studies [1-5].

Among six clinical papers, two refer to rectal cancer. The first was written by Floor Piquer *et al.* (Netherlands), and presented the results of a comparative study between intra-operative HDR-BT (IOBT) and intra-operative electron radiotherapy (IOERT). This study showed favorable loco-regional free survival after IOBT, possibly due to a higher surface dose inherent to this technique. The second paper, submitted by Ngu Wah Than *et al.* (UK), focused on contact X-ray brachytherapy (CXB) used as a salvage treatment for rectal cancer patients who develop local tumor re-growth after “watch-and-wait” approach. As concluded, disease-free and overall survival rates were acceptable, and delaying surgical salvage for local re-growth did not compromise patients’ eventual long-term outcomes.

The two subsequent manuscripts are on prostate cancer. Researchers from Canada, Damien Carignan *et al.*, presented differential outcomes of re-stratified high-risk prostate cancer (PCa) patients treated with EBRT plus HDR-BT boost. They stated that high-risk PCa patients classified according to the 3-tier NCCN system benefit from further stratification using the CAPRA score (which incorporates the percentage of positive biopsies and patient age at the time of diagnosis), or the 5-tier NCCN stratification method in terms of their further investigations and treatment intensification. Also from Canada, Breanna Fang *et al.* reported on acute toxicity outcomes from salvage HDR-BT for locally recurrent prostate cancer after prior radiotherapy. They noted various grade 2 urinary toxicities (bladder spasms, cases of incontinence, urinary obstruction, or urgency), of which all were temporary and acceptable, even without intra-operative MR guidance or image registration.

Unresectable ampullary cancer is a challenging condition to treat. Tingting Cui *et al.* (China) stated that longer intervention interval for biliary obstruction and survival, better stent patency, and prolonged time to duodenal obstruction could be achieved by implantation of iodine-125 seed combined with biliary stent in such patients.

In the last clinical paper, Vrushab Rao *et al.* (India) compared Fletcher suit and ring applicators for retroverted uteri. Both the applicators have shown comparable results in most parameters. However, rectal dosage control was superior using the ring applicator at the cost of higher pain incidence. As suggested, the patient’s comfort and rectal dose in EBRT should be considered, with preference given to the ring applicator.

In a single physics contribution, Fatih Biltekin *et al.* (Turkey) evaluated the dosimetric performance of vaginal intensity-modulated brachytherapy (IM-BRT) applicator against single- (SC-BRT) and multi-channel brachytherapy (MC-BRT) for vaginal cuff brachytherapy (VC-BRT) with promising dosimetric results.

An international group led by Ben Vanneste (Netherlands) submitted a preliminary report. They presented a unified strategy for focal BT incorporating transperineal biopsy, image fusion, and real-time implantation with and without a rectal spacer simulated in prostate phantoms. In this study, all rectal dosimetric parameters improved for the spacer implant cases, but further concept validation is warranted in clinical trials.

The last article I wish to highlight is a case report presentation submitted by Trudi Wu *et al.* (USA). They performed a successful salvage percutaneous HDR brachyablation after stereotactic body radiation therapy (SBRT) for early-stage non-small cell lung cancer (NSCLC). They achieved tumor control with no complications at 2.8 years, following the HDR brachyablation procedure and 7.8 years since the initial SBRT (see also the issue’s cover).

Dear colleagues, the 2024 World Congress of Brachytherapy is fast approaching. Since this outstanding opportunity for a global brachytherapy gathering happens only every four years, I will be delighted to meet some of you in person in Washington, DC this July. Let’s exchange our research results and experiences for the benefit of our patients.

Yours sincerely,



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References

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