



ESTRO 2023 RTT Track Symposium

“Patient preparation and positioning”

As precision in radiotherapy is the cornerstone of successful treatment and patient survival, new methods for patient positioning are constantly being developed and researched. The radiotherapist (RTT) track symposium focused on the challenges of patient positioning from three perspectives: upright positioning, surface-guided radiotherapy and real-time adaptive radiotherapy.

The first presentation by Sophie Boisbouvier (France) was on upright positioning. She suggested that upright positioning could be beneficial for lung radiotherapy, in the treatment of which its use reduces the mean lung dose, as well as in prostate radiotherapy, in which changes in bladder filling do not impact the prostate position significantly. It is also a promising method to increase patient comfort during head and neck radiotherapy. Additionally, it could be useful from the perspective of the availability of radiotherapy to patients, as the room construction for upright irradiation is less costly than for horizontal positioning. The “Eve” positioning system by Leo Cancer Care (LCC) was installed in Lyon in 2021 and a research programme was launched. The project is ongoing; however, it can be said that the upright position for radiation therapy treatment with the LCC chair is promising.

The audience was interested to understand how patients could undergo planning CT in the upright position and whether such a system would be suitable for the treatment of children. Dr Boisbouvier explained that a vertical CT would be installed shortly. Regarding children, the author stated that the issue of immobilisation would play a role in these cases, and that of the use of suitable immobilisation devices was important. In response to a question from the session chair regarding how Dr Boisbouvier found the work on the project, Dr Boisbouvier said it was challenging but an exciting opportunity, as the research team was very encouraging and enthusiastic.

The second presentation was given by Filipe Moura from Portugal, who focused on the implementation of a surface-guided radiotherapy (SGRT) system. This emerging technology is increasingly being brought into clinical practice. As yet there is no clear, structured guidance regarding its use, but ESTRO has overcome this lack of recommendations by providing an overview of staff roles and responsibilities, details of common potential errors in SGRT workflows, and comprehensive guidelines for quality assurance procedures and frequency of treatment sessions. Dr Moura stated that RTTs played a significant role in the application of SGRT systems as they were responsible for all tasks from quality assurance to delivery of the treatment. Thus, staff training and continuous education were essential to prevent errors and non-optimal application of the technology. During the presentation, the results of an international survey on current SGRT practice were introduced. Despite some weaknesses, the majority of the participants in the symposium thought that SGRT would become the standard of care. A participant asked whether SGRT would provide sub-optimal treatment if the patient’s weight changed significantly during the treatment period. Dr Moura pointed out that the changes would be visible through the system and measurable through the use of image-guided radiotherapy (IGRT). In fact, it was highlighted on several occasions during the presentation that SGRT must go hand-in-hand with IGRT as they complemented each other in terms of accurate treatment delivery.

The third presentation, regarding the role of patient preparation strategies for real-time adaptive radiotherapy (ART), was given by Madalyn Chamberlain from Switzerland. The systems currently available for real-time ART enable the performance of the treatment based on the anatomy of the day. The systems have improved image quality and they enable the use of gated radiotherapy with beam-hold. However, despite these advances, there are some concerns: the need for long appointments and the change of environment for the patient, whose expectations of radiotherapy treatment may be different from what is offered. For instance, clinicians have to explain to the patient why the entire multidisciplinary team is present and why it may seem that nothing is happening during the time of adaptation. Screening of patients to ensure their suitability for this treatment is essential to ensure its success. The screening must consider compliance, performance status, compatibility with the technology and any claustrophobia the patient may feel. Dr Chamberlain also highlighted that patients usually remembered only a small fraction of the information that was given to them the first time, so additional written or video materials were required.

The audience was interested in the usage of the empty bladder protocol during prostate radiotherapy. Dr Chamberlain explained that the treatment plan was prepared with a moderately full bladder; however, when the patient came for treatment, the bladder was empty and by the time the treatment could start, the bladder had filled sufficiently to push the bowel away from the treatment field.

In conclusion, it was an insightful symposium. Radiotherapy is developing rapidly and new approaches are required, not only in terms of technical treatment precision but also to emphasise patient comfort and empowerment. The presentations highlighted both challenges and opportunities.



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