بسم الله الرحمن الرحيم

Intra Operative Radiation Therapy (IORT), a Dedicated Procedure, Just Flying or Landing?-2

In the previous issue, we have had a short note about IORT. However, due to importance of the subject, we will continue our discussion on some other aspects of this therapeutic procedure.

The history of IORT goes back to1960s with effort of some intelligent and hardworking physicians such as professor ABE from Kioto University, Nippon, and continued by other colleagues such as professor Calvo from Madrid University. Nowadays, due to producing mobile machines for IORT, this therapy method has become more popular in all parts of the world and in Europe in particular. IORT may be used as a complete irradiation or as a boost dose with following external beam irradiation. The priority of IORT has been confirmed by some interesting and scientific documents regarding external radiation for boost dose irradiation. This could be attributed to both accurate geometry of the boost and timeliness of the treatment. Irradiation of the tumor bed at the time of surgery might also provide a favorable effect on the micro-environment of any residual disease. These results suggest that not only IORT could be safely used as a boost, but also it is likely to be superior to conventional external boost. For the first time, IORT was done for gastrointestinal malignancies and stomach cancer in particular as the most prevalent and mortal cancer in Japan, and it was used as single radiation procedure or boost dose. Now, it is more popular for breast cancer when the breast is preserved. In some special cases that External Beam Radiation Therapy (EBRT) may not be used for breast conserving therapy, the IORT is the only accepted and practical method for radiation therapy in such cases: local recurrence and preserving breast again (BCS), patients with history of Hodgkin lymphoma and irradiation, cases with Parkinson disease who are not able to be irradiated in conventional irradiation table, patients with skin and /or connective tissue diseases. The trials suggest that IORT using X-ray or Electron (Targit or Eliot) offers a safe and effective method of delivering radiotherapy to those breast cancer patients for whom EBRT is not an option.

Another advantage of IORT regarding EBRT is health equity, particularly in countries with restricted resources. In such communities, the patients may not be available more than 30 days to have radiation therapy as an adjuvant therapeutic modality. Therefore, they will refuse this effective treatment or prefer to choose organ loss such as mastectomy instead of BCS when it is recommended.

Nowadays, such obstacles as separation of surgery and radiation departments by producing mobile machines and more experience regarding IORT in different malignancies have been resolved. The most problem for accessibility of this dedicated procedure is the price of the machines, but it is still more cost effective than conventional radiotherapy.

In summary, it is accepted that this therapeutic modality (IORT) is still flying and it is landing wherever the place is available.

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