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Perspective

From Post-Operative to Preoperative Referrals: A Game-Changer for Radiation Therapy Access in LMICs

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Radiotherapy plays a key role in cancer management; but access to appropriate treatment is still a huge problem in developing nations like Pakistan [1]. With an estimated population of 212 million, the country already faces a high number of cancer cases and at the same time lacks adequate facilities for radiotherapy [2]. The country only has 57 radiation treatment facilities, comprising both the linear accelerators and Cobalt-60 devices. That makes up for just under one facility per million individuals in the population [3, 4].

Our center acts as a free institution offering quality radiotherapy treatments to people throughout the nation. The center has so far remained the only center where the option of Tomotherapy is available. We have been able to install two Tomotherapy machines as well as two Cyberknife for stereotactic radiotherapy. However, despite all these technological innovations, the burden of the substantial number of patients poses problems for us. We treat up to 100 patients on a daily basis.

In a typical setting, patients eligible for adjuvant radiotherapy usually present for consultation approximately 2–3 weeks after surgery, with radiation therapy ideally initiated within 6 weeks postoperatively [5,6]. But for busy centers that operate on a backlog, this schedule may be unachievable since it requires a certain amount of time before starting the radiation therapy. This delay in the commencement of the radiation treatment could affect local control and even patient survival in certain types of aggressive cancers [7].

This prompted us to revise our referral protocol. We began by strengthening close collaboration with site-specific surgeons and other involved specialists. During these discussions, emphasis was placed on identifying patients who are likely to require radiation therapy and referring them earlier in the treatment pathway. In parallel, our departmental radiation oncologists have taken an active role in multidisciplinary tumor boards, including the citywide tumor board, where complex cases are reviewed and management plans are jointly discussed. The tumor boards include surgeons, medical oncologists, and radiologists; hence, a thorough evaluation of each case can be performed. In addition, the involvement of radiologists helps stage the disease more accurately [8, 9].

Another important aspect of the strategy is that the patients get preoperative examination by the radiation oncologists. The preoperative assessment ensures accurate mapping of the disease and prediction about whether or not the patient will require adjuvant radiotherapy. With the initial plan ready, patients can be planned for receiving radiotherapy beforehand where applicable. This makes for an efficient transfer from surgery to radiotherapy.

Referral pathways for patients not undergoing surgical intervention were also optimized. Medical oncologists began referring patients with rectal, breast, and nasopharyngeal cancers at an earlier stage, particularly during the course of their neoadjuvant chemotherapy [10]. This is also applicable to patients with locally advanced prostate cancer, in whom initial androgen deprivation therapy is followed by radiotherapy as part of the overall treatment sequence.

Although the importance of early referrals is stressed, thorough assessment procedures are strictly adhered to before the start of radiation treatment process. It is necessary to conduct a complete analysis of the pathology, imaging studies, and patient data before conducting simulations and planning. This will ensure that treatment

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procedures are scientifically sound and technically precise.

Through this combination of early referral and thorough assessment, we have managed to fit more curative patients into our available resources. The effect of the above approach in a resource-constrained environment has been remarkable. With the use of the preoperative referral process, a higher number of individuals can commence radiation therapy during the crucial period after surgery. This has been achieved by optimizing time management, making efficient use of existing resources, and improving service delivery in general. More importantly, the emphasis on curative patients enables effective resource allocation in favor of those who will benefit most from the service.

Nonetheless, issues persist. While there have been gains through the installation of another Tomotherapy machine, which will greatly enhanced our capacity, the needs of radiotherapy far outstrip the supply. For sustainable success, there needs to be continuous enhancement of infrastructure and the human resource pool.

In summary, the lesson that we have learned is that changes in the way referrals occur could be used effectively to increase access to radiotherapy services in Lower and middle-income countries environments. Changing the type of referral from postoperative to preoperative referrals, alongside collaboration between different disciplines and focus on the treatment of patients with curative disease, has increased efficiency under limited circumstances. This strategy shows that innovation and planning are essential elements to overcome obstacles.

LIST OF ABBREVIATIONS

LMICs: (Low- and Middle-Income Countries).

JPMC: (Jinnah Postgraduate Medical Centre).

RT: (Radiotherapy).

AUTHORS' CONTRIBUTION

Fatima Shaukat: Conceptualization, Study Design and Final approval, final proof to be published.

Yumna Ahmed: Methodology, Data analysis and interpretation, and Writing draft.

Rabia Tahseen: Writing draft and Critical review and revision the manuscript.

Tariq Mehmood: Writing draft, Critical review and revision the manuscript and Final approval, final proof to be published.

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