

Organ preservation in cancer

The bottom line in the management of cancer is to achieve R0 resection (i.e. microscopic freedom from disease). In order to achieve this; the surgeon would go an extra yard or a mile and in the process lose an organ and/or its function. The morbidity of cancer has a direct impact on the quality of life (QOL) and with more patients of cancer living longer; the QOL issue is of significance. Having mentioned that, it is mandatory to ensure that the oncological safety is not compromised in zeal to achieve this aim.

It all started with the Veterans trial in the 70s and 80s in the United States where it was realized that 80% of larynges that were sacrificed for the cancer of larynx could have been preserved if up front chemo-radiation was used. The results of this trial changed the overall mindset and approach to the management of this cancer. Preservation of larynx has tremendous impact on the quality of life as laryngectomy leaves the victim with a permanent stoma and no speech—a morbidity of a lifetime.

Meanwhile there was a paradigm shift in the management of other cancers also. Fisher's view highlighted the concept of breast cancer being a systemic disease at the very onset taking the attention away from an excessively aggressive local approach to a broad systemic management approach[1]. With the advent of better adjuncts the role of surgeon from being the lone crusader changed in to a leader of a team with medical and radiational oncologists in order to achieve an optimum management of this deadly disease with adequate attention towards preservation of organ and function.

Neo-adjuvant chemotherapy (NACT) made it possible to downstage a locally advanced disease in to one that was amenable to breast conservation. The effective adjuncts made it possible to provide a multipronged approach in this direction. The NACT also took

adequate care of the systemic micro metastases. Against this backdrop, there was a further change in the approach towards less and less extensive axillary lymph node dissection. The advent of sentinel lymph node biopsy made it possible to perform axillary dissection selectively in order to reduce the morbidity of lymphoedema of the arm and neuralgias. Presently in early breast cancers the standard of care is breast conservation therapy and the N0 axilla is managed by either SLNB or axillary lymph node sampling in order to avoid overkill in the absence of metastatic lymph nodes. SLNB is now also being performed in selected situations even in LABCs if the axilla has been downstaged to N0 status[2-6]. NACT, besides downstaging the tumours and managing micro metastases also provides an *in vivo* sensitivity test that can help select the optimum and effective adjuvant therapy in breast and other cancers

Besides larynx and breast, this success story could be replicated in other cancers also like those of bladder, oro-pharynx, and ovary etc. The advent of affective NACT protocols has also contributed significantly in making limb salvage surgery possible in soft tissue sarcomas. The present day approach to cancer management is fast changing towards preservation of organ and function while ensuring an oncologically acceptable management. An effective adjunctive therapy, does not however condone a sub-optimal surgery and there is no replacement for achieving an R0 resection in all cancers. The advancements in the adjunctive therapies have thus made it possible to extend the advantage to achieve organ and function preservation in most cancers presently. In the near future with emergence of more effective targeted therapies organ preservation in most cancers would be a dream realized.

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