

Bilateral Internal Mammary Lymph Nodes— Is Ipsilateral Internal Mammary Node Treatment Sufficient?

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Abstract

Internal mammary nodes are addressed in high risk group of patients of carcinoma breast. Though there is crossover of lymphatics across the mid-line, only ipsilateral internal mammary nodes are evaluated or treated. Considering the negative impact on survival of patients with inner quadrant tumor, do we need to treat bilateral internal mammary nodes?

Keywords

Internal Mammary Nodes, Bilateral, Therapy, Breast Cancer

1. Introduction

Breast cancer is the second most common cancer in the world and ranks as the fifth cause of death from the cancer overall [1]. The tumor site is an important prognostic factor in breast cancer. Medial or inner quadrant tumors have negative impact on survival [2]. Internal mammary nodes (IMN) are commonly involved in inner quadrant tumors. They are addressed in high risk group patients of carcinoma breast like large size tumors, high axillary nodal burden and young age [3]. IMN evaluation improves nodal staging in breast cancer. Identification of high risk subgroup with IMN metastasis may benefit from altered adjuvant treatment regimen [4]-[6]. Both the surgery and radiotherapy (RT) for IMN management increase the cardiac and lung morbidity [6] [7]. Newer surgical techniques, conformal external beam RT techniques or intravascular RT decrease the cardiac and lung toxicity. But all the literatures present address only an ipsilateral IMN.

2. Discussion

The incidence of IMN metastasis was around 10% in patients with negative axillary dissection and 20% - 50%

in patients with positive dissection [7]. The risk of IMN metastasis increases with increase in number of positive axillary nodes, tumor size and clinical stage. Central and medially located tumors have higher risk of IMN metastasis [8].

Both; the surgery and radiotherapy (RT) for IMN management increases the cardiac and lung morbidity [6] [9]. The lymph nodes located in upper three intercostal spaces are most likely to be involved/metastatic IMNs in patients with breast cancer which are located less deeply than the more inferior ones [7], hence can be addressed with relatively less morbid surgery or radiotherapy. Newer surgical techniques, conformal external beam RT techniques or intravascular RT decreases the cardiac and lung toxicity.

Generally only an ipsilateral IMN are addressed during surgery or RT. One lymph node station higher than the involved node is usually included in radiation portals e.g. head and neck cancer, carcinoma cervix. In breast cancer considering an adequacy of axillary dissection and post operative histopathology report supraclavicular nodes are irradiated. IMN are irradiated if clinically/pathologically/radiologically positive nodes or inner quadrant tumors are present [10]. Veronesi *et al.* found an excellent survival after five years in 95% patients with positive IMN after sentinel node dissection in internal mammary chain, treatment with RT to IMN and an appropriate systemic therapy [11]. Arriagada *et al.* suggested a beneficial effect of treatment of IMN on risk of death and distant metastasis for patients with medial tumors. They did not show any benefit of IMN irradiation for patients with laterally located tumor [12].

Considering anatomy of the breast and IMN, it is mentioned that there is communication of lymph vessels across the midline and there may be drainage to opposite side especially when some pathways are blocked [13]. Also, unilateral disease becomes bilateral by this route. Hence giving the margin for microscopic disease and taking into account the crossover of lymphatic across midline, do we need to consider bilateral IMN for treatment?

It is clearly mentioned in AJCC staging for breast cancer that contralateral IMN should be considered as metastatic [14]. The survival and prognosis of contralateral IMN as oligo-metastasis is not compared with ipsilateral supraclavicular node metastasis or other oligo-metastatic sites in the literature. But making an allowance for an anatomy and relative prognosis of these patients with contralateral IMN metastasis should we classify contralateral IMN in nodal (N) stage like carcinoma lung or metastasis (M) stage of TNM staging?

3. Conclusion

Considering the crossover of lymphatic across the midline and balancing the need and toxicity, can we consider the bilateral IMN treatment? A large number of patients need to be studied to verify this hypothesis.

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