



Management of Neck Metastasis in Operated Case of Breast Carcinoma by Laser Ablation in a her2 Positive Case - A Case Report

Rusy Bhalla¹; Seemantini Bhalla M.S²; Duleep Bhonsale M.D³

¹Head of Department of Oncology, Orchid Center for Laser surgery, Mumbai India.

²Laser Surgeon, Orchid Center For Laser Surgery.

³Radiologist, Department of Radiology, Orchid Center For Laser Surgery.

*Corresponding Author(s): Rusy Bhalla

Head of Department of Oncology, Orchid Center for Laser surgery, Mumbai India.

Email: rusybhalla@gmail.com

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Introduction

Single receptor hormone status patients have a poorer prognosis than triple positive cases. This is due to lack of responsiveness of hormonal treatment on ER-PR₊ve patients [1].

Human Epidermal growth factor or HER2 receptor was initially recognized as a poor prognosis factor but was consequently identified as a better prognosis marker after the introduction of Trastuzumab in 1998. Consequently, addition of Trastuzumab with Emtansine was shown to have a better response than trastuzumab alone in Her 2 positive tumours [2].

The approval of trastuzumab in the first-line combined with chemotherapy was based on a single phase 3 study that ran-

Abstract

It is well known fact that shower metastasis is quite common occurrence after Breast cancer surgery.

The appearance of distant metastasis after surgery is commonly treated by Chemotherapy and lately addition of Immunotherapy has increased the overall survival.

Immunotherapy is effective in Her 2 positive tumours. The most common drug is Trastuzumab in these patients. In failed cases of Trastuzumab the latest option is TDM1 a combination of Trastuzumab and chemotherapy drug Emtansine.

This is mildly better than trastuzumab in failed cases and increases survival by a few months. There are isolated cases of complete remission after administering this drug.

We present a case which had metastasized to both sides of neck. This patient underwent laser ablation of all positive lymph nodes followed by combination therapy drug administration. She had a complete response in 3 months and was still negative at Pet scan with no sign of any lymph nodes after 12 months.

domized patients with HER2-positive breast cancer and metastatic disease to an anthracycline regimen (or paclitaxel if prior anthracycline) with or without concomitant trastuzumab [3,4]. There was a significant improvement in median time to progression (TTP, 7.4 vs 4.6 months, $p < 0.001$), overall response rate (ORR, 50% vs 32%, $p < 0.001$), and median overall survival (OS, 25.1 vs 20.3 months; $p=0.046$), along with an unacceptably high risk of cardiotoxicity with the concomitant administration of trastuzumab and an anthracycline.

EMILIA registration trial randomized 991 patients previously treated with trastuzumab and a taxane to ado-trastuzumab Emtansine versus lapatinib plus capecitabine [5]. There was a significant improvement in PFS favouring the ado-trastuzumab



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Emtansine arm (9.6 vs 6.4 months, HR=0.65, $p < 0.001$), OS (30.9 vs 25.1 months, HR=0.68, $p < 0.001$), and ORR (43.6% vs 30.8%, $p < 0.001$), and a favourable toxicity profile except for thrombocytopenia and elevation of transaminases.

The above figure of 9 months is important in this case study. Since complete response after 9 months is virtually unknown. Continuation of TDM1 in absence of any significant toxicity results in approximately 2 yr survival rate.

There have been isolated reports of patients having a complete remission on TDM-1 after failing trastuzumab therapy in Metastatic Breast Cancer (MBC) [6]. Complete response in skin was observed in 2 patients [7]. Most investigators have had a PFS of 8 to 9 months only [8].

The TH3RESA study investigated the use of T-DM1 in comparison to the treatment of the physician's choice in patients with HER2-positive breast cancer who had received at least two prior regimens of HER2-directed therapy. The primary endpoints were PFS and OS. The median PFS was 6.2 months in the T-DM1-treated group vs. 3.3 months in the physician's choice group [9].

Patient and Methods

75 yr. old lady with a history of Mastectomy 8 months back presented with history of neck metastases on Pet scan. There was no sign of extra neck spread anywhere in the body. She had history of HER2 positive and HR negative biopsy report. She had 12 cycles of paclitxel and 6 cycles of Trastuzumab and had relapsed

on treatment.

Her informed consent for the procedure was taken

It was decided to laserise her lymph nodes with percutaneous laser under sonography control. This was achieved in a single session where all lymph nodes which were seen on sonography on both sides of the neck were laserised using a standard percutaneous approach. Of special interest was a 2.9 cms lymph node situated on the bifurcation of carotid artery. This too was laserised.

She was consequently administered a 3-weekly regime of Trastuzumab with Emtansine.

Her side effects included thrombocytopenia and nodular sarcoid like deposits which had no uptake value on consequent PET scan.

She was monitored monthly with MRI neck monthly and HRCT scans 2 monthly.

She tolerated the Trastuzumab with Emtansine regime quite well with no significant clinical side effects.

Results

Her pet scan done after 8 months did not show any uptake in any part of her body. Her previous lymph nodes had completely regressed and did not show up on Pet scan. (Figure 1-4)

She is currently on the same drug and will be started to phase out after 1 year.



Figure 1: Cross section view of Neck metastases. Red arrow pointing to Neck Nodes. Picture on right shows a complete regression with no uptake in the Neck.



Figure 2: Lower level 4 lymph nodes Red arrow pointing to lymph nodes which are positive on Ct scan. Picture on right shows a complete regression with no uptake in the Neck.

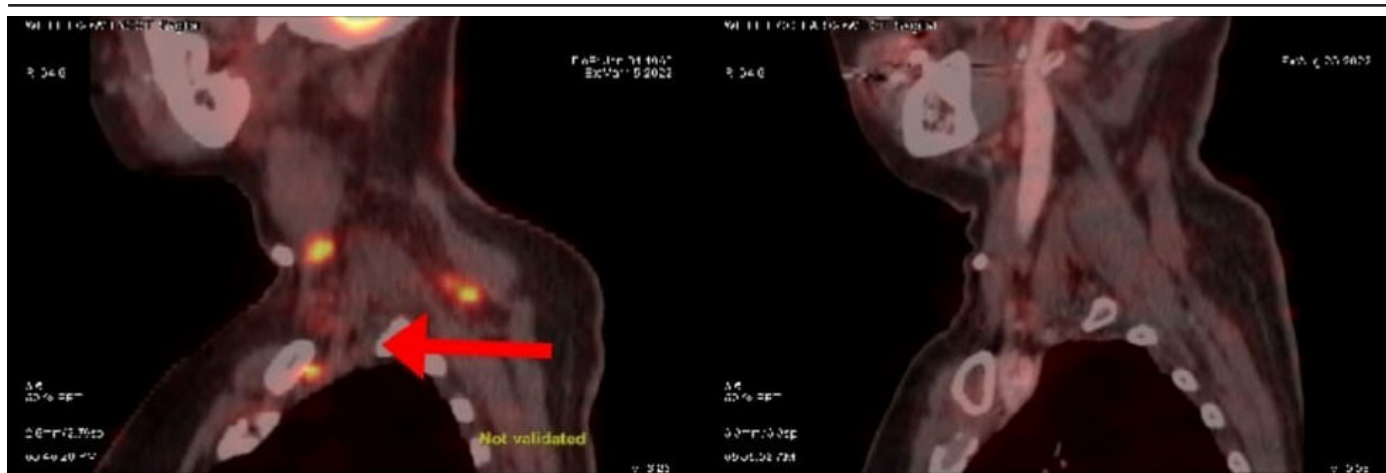


Figure 3: Saggital section showing a wider distribution of Lymph nodes in anterior and posterior triangle. Red arrow points to positive lymph nodes. Picture on right shows a complete regression with no uptake in the Neck.



Figure 4: Coronal section shows Lymph nodes at root of Neck. Bottom neck node in circled area is lying on the carotid artery. Picture on right shows a complete regression with no uptake in the Neck.

Discussion

Surgery is mainstay of cancer management in virtually all solid tumours. Although the spread of cancer following surgery is often, a subject rarely discussed. It is an acknowledged fact that surgery itself can cause the spread of metastases and be the main cause in an early recurrence following a successful resection with clear margins.

Surgery induces increased shedding of cancer cells into the circulation, suppresses anti-tumour immunity allowing circulating cells to survive, upregulates adhesion molecules in target organs, recruits immune cells capable of entrapping tumour cells and induces changes in the target tissue and in the cancer cells themselves to enhance migration and invasion to establish at the target site. Surgical trauma induces local and systemic inflammatory responses that can also contribute to the accelerated growth of residual and micrometastatic disease. The primary tumour secretes inhibitors for the micrometastatic cells. On removal of the primary tumour, these inhibitory factors are reduced in circulation. This prompts the micromets to start growing with renewed vigour. Tumour removal can result in decrease of levels of antiangiogenic factors such as angiostatin, endostatin and thrombospondin [10-13].

The spread of metastases in Breast cancer can be in any part of the body. It can occur at single organ or multiple sites. The spread in most cases is like a shower metastasis with the size of

metastases approximately same in all spread. This suggests a single point of origin namely surgery itself.

In this case fortunately the spread was to an accessible part of the body for Laser.

The procedure of laser ablation of soft tissue tumours is now a well-accepted concept and approved by USFDA. In our center Laser ablation of lymph nodes is a routine procedure in breast and oral cancers. The process of laserising the positive enlarged lymph nodes visualized on sonography decreased the tumour load to a great extent [14].

Emilia trial and other reports mention a progression free survival of only 6 to 9 months and this is corroborated by on ground results of patients [5]. As such, a complete clinical remission can be attributed to a combination of Laser and combination drug of Tratumab and Emtansine.

Conclusion

Distant spread after surgery is quite common after surgery of breast cancer. Addition of laser ablation to treatment of distant metastases in Breast cancer can have a positive factor on the outcome of these patients.

More studies are needed to confirm the combined approach as a standard procedure in laser accessible areas before starting the second line of treatment in Breast cancer recurrence cases.

Declarations

Patient approval was obtained for consent to publish.

The authors declare that there were no competing interests.

All authors were involved in management and authorship of the publication.

No financial aid was involved in this study.

References

1. Bae SY, Kim S, Lee JH, Lee HC, Lee SK, et al. Poor prognosis of single hormone receptor- positive breast cancer: similar outcome as triple-negative breast cancer. *BMC Cancer*. 2015; 15: 138.
2. Maria Cristina Figueroa-Magalhaes, Danijela Jelovac, Roisin M Connolly, Antonio C Wolff. Treatment of HER2-positive breast cancer, *The Breast*. 2014; 23: 128-136.
3. DJ Slamon, B Leyland-Jones, S Shak, H Fuchs, V Paton, et al. Use of chemotherapy plus a monoclonal antibody against HER2 for metastatic breast cancer that overexpresses HER 2, *N Engl J Med*. 2001; 344: 783-792.
4. GD Lewis Phillips, G Li, DL Dugger, LM Crocker, KL Parsons, et al. Targeting HER 2-positive breast cancer with trastuzumab-DM1, an antibody-cytotoxic drug conjugate, *Cancer Res*. 2008; 68: 9280-9290.
5. S Verma, D Miles, L Gianni, IE Krop, M Welslau, et al. Trastuzumab emtansine for HER 2-positive advanced breast cancer, *N Engl J Med*. 2012; 367: 1783-1791.
6. Yu Z, Sankar S, Huben M. Excellent Response with Ado-Trastuzumab Emtansine in a Patient with Relapsed Metastatic Breast Cancer Presenting with Pulmonary Lymphangitic Carcinomatosis. *Cureus*. 2017; 9: e1473.
7. Giarratano Tommaso, Miglietta Federica, Giorgi Carlo A, Tsvetkova Vassilena, Michieletto Silvia, et al. Exceptional and Durable Responses to TDM-1 After Trastuzumab Failure for Breast Cancer Skin Metastases: Potential Implications of an Immunological Sanctuary. 2018; 8.
8. Laura L Michel, Justo Lorenzo Bermejo, Adam Gondos, Frederik Marmé, Andreas Schneeweiss. T-DM1 as a New Treatment Option for Patients with Metastatic HER 2-positive Breast Cancer in *Clinical Practice Anticancer Research*. 2015; 35: 5085-5090.
9. Ian E Krop, Sung-Bae Kim, Antonio González-Martín, Patricia M LoRusso, Jean-Marc Ferrero, et al. Trastuzumab emtansine versus treatment of physician's choice for pretreated HER2-positive advanced breast cancer (TH3RESA): A randomised, open-label, phase 3 trial, *The Lancet Oncology*. 2014; 15: 689-699.
10. Tohme S, Simmons RL, Tsung A. Surgery for Cancer: A Trigger for Metastases. *Cancer Res*. 2017; 77: 1548-1552.
11. Horowitz M, Neeman E, Sharon E, Ben-Eliyahu S. Exploiting the critical perioperative period to improve long-term cancer outcomes. *Nature reviews Clinical oncology*. 2015; 12: 213-226.
12. Demicheli R, Retsky MW, Hrushesky WJ, Baum M, Gukas ID. The effects of surgery on tumor growth: a century of investigations. *Annals of oncology: Official journal of the European Society for Medical Oncology / ESMO*. 2008; 19: 1821-1828.
13. Murthy SM, Goldschmidt RA, Rao LN, Ammirati M, Buchmann T, et al. The influence of surgical trauma on experimental metastasis. *Cancer*. 1989; 64: 2035-2044.
14. Rusy Bhalla, Seemantini Bhalla, Duleep Bhonsale, Ashish Kapadia. Laser Ablation of Metastatic Lymph Nodes in the Neck for Oral Carcinoma-Technique and Viability of the Procedure. *Journal of Radiology and Clinical Imaging*. 2021; 4: 027-035.