Is India Overdoing Mastectomy?

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The journey of the management of breast cancer has been long and interesting. Treatment of breast cancer has come a long way from the Halstedian era of radical mastectomy to the present philosophy of breast conservation therapy (BCT). This change has been attributed not only to a better understanding of the disease at the molecular level but also to the major evolutions in the field of adjuvant radiotherapy, chemotherapy and hormonal therapy. Over the last three decades, breast surgery has moved towards less, with BCT being accepted widely. Trials have shown that BCT and mastectomy are comparable with respect to overall survival and loco-regional recurrence [1]. But the biggest advantage of BCT is that it gives a far superior cosmetic outcome.

In India too, BCT has picked up momentum. But mastectomy still remains the predominant surgery for breast cancer. Why is the scenario like this? Is India overdoing mastectomy?

The debate is on.

By definition, overdoing means to do something in a way that is too extreme, to overstate or do more than necessary.

Before being judgemental on whether India is overdoing mastectomies, it has to be analysed on the basis of parameters which are relevant from the Indian perspective and not just compare numbers with that of the rest of the world.

Patient Population

In a country with a population of 1.35 billion, 25.8 per 100,000 women suffer from breast cancer, with a mortality of 12.7 per 100,000 [2]. In 2018, > 162,568 new breast cancer patients were diagnosed in India with 87,090 reported deaths [3]. With a total of 350,000 women living with breast cancer in India in

2018, it has been projected to increase to a staggering 1,800,000 by 2020 [4]. The question is do we have an adequate surgeon population to cater to this enormous patient population?

Surgeon Population

Breast cancer has traditionally been operated by general surgeons. But, with changing times and development of oncosurgery and breast surgery as subspecialties, the job has been distributed between general surgeons, oncosurgeons and breast surgeons. India has 31,560 general surgeons (2.5 per 100,000 populations) [5]. How many oncosurgeons doing breast surgery are there in India? How many breast surgeons are there in India? The answer to these questions does not appear to be available at present!

Most general surgeons choose to perform a mastectomy, with a small percentage also doing a good breast conservation surgery (BCS). But, BCS requires specialised training and is therefore more commonly performed by those who have received specialised training in BCS and breast reconstruction. A study conducted by Bothra et al. showed that surgeons in the beginning of their career (20–30 years) prefer to perform MRM more than BCS [6]. This was due to a fear of recurrence and tarnishing of image in case of failure. On the other hand, surgeons over 50 years also preferred to perform MRM. But, their decision was due to lack of training in BCS.

It will be a journey down a long road, till most general surgeons get trained in breast conservation surgery and breast oncoplasty. Those trained in performing BCS are few since superspeciality/fellowship seats are few in number in our country. The number of oncosurgeons and breast surgeons are also much less than required, and building up the required capacity is going to take a while. There is a serious scarcity of trained and skilled surgeons who can offer BCS. So, availability of surgical expertise remains a major logistical hindrance to BCS.

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Resource Mismatch

Of the 2.5 general surgeons per 100,000 population, only one-third work in rural areas. These surgeons serve three-fourth of the Indian population. Of the remaining two-third surgeons, who serve the urban one-fourth of the population, 70% are attached to the private sector which absorbs not only 70% human resources but also most of the advanced medical technology. Sadly, this huge resource does not cater to even the whole urban population. It caters to only 28% of the urban population. Thus, a little bit of calculation exposes the major resource crunch and mismatch that prevails in the country.

Though centres offering breast conservation therapy (BCT) are on the rise, the numbers are far from the optimum requirement. Of the 100,000 patients that are treated for breast cancer every year in India, only about 1000 are treated with BCT [7].

An integral part of BCT is radiotherapy. At the present moment, India has 0.3 LINAC per million populations (*as compared with 12 per million populations in the USA*). Of these, 56% are installed in metros and tier I cities, while 70% of cancer incidences are reported in rural areas [8]. Hence the rural population of breast carcinoma cases either cannot be offered BCT even if one wanted to, or will have to travel to the cities to complete their adjuvant therapy. This not only becomes a logistical nightmare but often may not be economically viable.

Variation in Healthcare Standards

There is a huge variation in the standard of care offered to a patient not only in different parts of the country, but also amongst different centres in the same region. Though protocols are in place, their execution is far from satisfactory. Large parts of the population still undergo MRM on the basis of an FNAC. There are indiscriminate incisional biopsies, diagnostic lumpectomies and less than satisfactory mastectomies, which ultimately require a completion mastectomy. An incompletely done axillary clearance is yet another disturbing yet common finding [9]. To add to all these surgical misadventures is the problem of an abysmal histopathology report with many of the mandatory details missing. These patients pose a major challenge in terms of re-evaluation and further management.

The concept of a multidisciplinary team to manage such cases is totally lacking in many centres. Many patients do not end up getting the much important adjuvant therapy, which is as important as the surgery itself. Access to healthcare facility and issues of equity in providing cancer care are major challenges.

Disease Stage

The presentation of the disease in the subcontinent is very different from the western world. Though awareness has increased over time, it is still much lower than the western world. The awareness programmes are mainly concentrated in the urban setting and much less in the rural and remote parts of the country, which contribute to the bulk of the patients. Due to this lack of awareness, some amount of denial compounded with poor access to treatment facility, the overall presentation is delayed. The issue of upfront population-based mammographic screening is unlikely in our country. Most ladies detect their disease only after the lump is palpable or even after skin changes or evidence of distant metastasis has occurred [13]. Even after the lump is detected, there is a significant time gap after which a medical consultation is sought. Ultimately, over 50% of the patients present with stage III or IV disease [11]. Of these, 6–25% present with metastatic disease [7]. A further delay occurs in getting the necessary investigations done, as these facilities are commonly not available in the rural areas, let alone under the same roof. Though some centres do offer downstaging with neoadjuvant chemotherapy followed by BCS, most patients ultimately are suitable only for MRM.

Patients' Choice

Patients' choice remains another crucial factor for choosing MRM over BCS. Over 70% of European patients choose BCS according to the EUSOMA database [10]. In India, 10–12% patients prefer BCS, while 11–23% surgeons offer it to the patients and prefer to perform it (compared with 60–70% of the western surgeons) [11].

Patients are asked and expected to play an active role in the decision-making process regarding selection of surgical treatment. Even now, most Indian patients tend to choose MRM over BCS [11, 12]. Why is this so? Most are more familiar with this traditional form of surgery than the newer method. They feel that MRM offers better protection than BCS. The fear of recurrence in the residual breast and repeat surgery in case of a positive margin bothers them. This fear is compounded with fear of radiotherapy and its side effects. The acceptance is lower in rural areas, both by the patient and her family members. Besides a patient's own outlook, where the patient lives, which institution she can reach, how much she can afford to spend on her treatment also contribute to her decision. Surgeons are supposed to offer all options and explain the pros and cons of each option, to help them come to a decision. But, unfortunately, the decision is often predetermined by the patient or her family members, irrespective of what information/options her doctor offers her.

Economic Issues

The economic status of the population also plays a vital role in the decision of type of surgery. Most of the patient population can afford treatment only in institutions which do not have the facility to offer BCT. They do not come under the umbrella of insurance and have to pay from their pockets if they attend a private setup. The cost of BCS with necessary oncoplasty is always higher than MRM. For the limited few who do have insurance, BCS is surprisingly considered a ‘cosmetic’ surgery and not covered under insurance [14].

Conclusion

The surmise that India is overdoing mastectomies when compared with the Western world is debatable. The various factors predisposing to the apparent large number of mastectomies need critical evaluation. These include the socioeconomic condition of our nation, the burden of the disease, its distribution in the rural and urban population and stage at presentation. The lack of awareness amongst the general population and also the primary treating physician often tilts the balance in favour of opting for mastectomy. The availability of adequately trained surgeons to perform the alternative to mastectomies, i.e. BCS, is also a major factor. Apart from looking merely at the number of mastectomies, one must also look at the quality of care being offered including pathology reporting, without which comprehensive care becomes challenging. Availability and access to radiotherapy facilities add to the complexity of the situation. The economic aspect of treatment cannot be understated in an economically compromised country like ours. This is true even for the population who may be educated and aware of the alternatives and may even be insured.

The point to be debated is whether we are ready to move on to BCS in early breast cancer or should we at least do a good core needle biopsy, a standard MRM with a good histopathological reporting as the basic minimum standard of care. Will it not be more feasible to standardise the existing surgical and pathological skills rather than teach a new skill to the already inadequate surgical fraternity? Having said that, if expertise and resources are available at certain centres, BCS should definitely be offered to the patient.

Considering the existing situation, is India really overdoing mastectomy?

The jury is still out!

Compliance with Ethical Standards

Conflict of Interest The author declares that she has no conflict of interest.

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