



Geographical access to breast reconstruction: does location matter?

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Breast reconstruction after mastectomy provides potential benefits of improved body image, self-esteem, and well-being (1). Despite this, there continues to be multiple barriers to women undergoing this care, one of which is the distance from the surgeon's office (1,2). Geographical access to a plastic surgeon is a predictor of postmastectomy breast reconstruction, yet plastic surgeons providing this care are not distributed symmetrically across the United States, with a higher percentage residing in urban academic settings (1,3). This asymmetric distribution of specialty care limits access primarily in older and rural populations (4). Around 45% of women undergoing mastectomy pursue breast reconstruction, however, this rate drops to less than 20% in the rural region (5,6).

In this study, Silverstein *et al.* evaluated the impact of geographical access for postmastectomy breast reconstruction patients, which is especially relevant as it serves as a baseline for understanding geographical barriers to care in the pre-coronavirus disease 2019 (COVID-19) timeframe before telemedicine was widely used (7). The authors should be commended for expanding our knowledge of the outcomes after postmastectomy breast reconstruction in distant communities. The authors closely evaluated their practice information and shared their data over a 4-year period (7). In this retrospective review, the postmastectomy breast

reconstruction patients were divided into two groups; those who lived less than 41 minutes (Not Far) and those that lived greater than 41 minutes (Far) from the medical facility (7). Of interest, time was used to differentiate the two groups, rather than distance, allowing for traffic, use of ferries, and any other unique environmental issues (7). Because of this, all subjects in the Far group may not have been in rural areas, but due to the length of time from the clinic, still had limited access to care. Although the 41-minute cut off used to differentiate the two groups allowed for even allocation of all the study patients into two groups, this might not be the ideal traveling time to determine which patients were close or far from the hospital, and that is certainly a limitation of the study that has to be taken into consideration when interpreting the results. For instance, for patients living in bigger cities, such as New York or Los Angeles, 41 minutes of traveling might be considered a short and expected traveling time to see a doctor.

Data points collected for the study included patient demographics, health characteristics, cancer type, breast reconstruction technique, and postoperative follow-up (7). Comparison of the cancer characteristics showed a statistically significant difference in the American Joint Committee on Cancer (AJCC) stage, with the Not Far patients more commonly diagnosed with stage I, and the Far

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patients with stage 0 (7). Previous studies have shown that increased distance from healthcare facilities is associated with a higher stage at the time of breast cancer diagnosis (8,9), while others have indicated that increased distance from a cancer center was associated with quicker treatment but increased mortality (10). Based on this, one would think that in this study the Far patients would have had more advanced cancer stage since they may not have access to regular screening and advanced healthcare in general, but this was not the case. This could be related to the way that the groups were allocated based on the travelling time as opposed to the distance from the facility.

The two groups (Not Far and Far) were statistically similar in terms of breast reconstruction type; autologous versus alloplastic (7). However, it is unclear if the alloplastic group included both tissue expander reconstruction and direct-to-implant reconstruction. One could argue that these two types of reconstruction are somewhat different in terms of their follow up and revision rates, thus a sub analysis is needed to better define the needs of these patients. For analysis of revisions, the study focuses on women who underwent non-nipple sparing mastectomy with at least 1.5 years of follow-up (7). In these patients, the Far group underwent fewer revision procedures after both alloplastic and autologous reconstruction (7). The authors point out that there is an assumption that groups who undergo more revision procedures experience more desirable aesthetic results, emphasizing a disadvantage for the Far group (7). This assumption, as the authors note, might not be accurate and needs further validation (7). Patients that underwent nipple-sparing mastectomy were excluded from the study's analysis on revisions because of the number of nipple-areola complex revisions and tattooing required (7). For future studies, further investigation would be warranted regarding the geographical effects on patients who have undergone nipple-sparing surgery. In fact, this is important information for breast surgeons and plastic surgeons to discuss with their patients in the preoperative setting to enhance the decision-making process and set expectations for the postoperative period since many patients desire to preserve their nipple areolar complexes.

A primary finding in this study was the quantification of follow-up encounters and how they differed between the Not Far and Far groups (7). The Far as compared to the Not Far group had a delay in follow-up after hospital discharge, a delay between the diagnosis of breast reconstruction complication and the previous follow-up visit (7.0 compared to 5.9 days, $P < 0.05$), and presented for less total appointments

at 6 months (8.5 vs. 9.8 visits, $P < 0.05$) and 1 year (11.8 vs. 13.7 visits, $P < 0.05$) postoperatively (7). The authors found that more hospital admissions led to more follow-ups (7). One scenario that warrants further investigation is to determine if travel time is associated with readmission rates. In addition, it is possible that patients who live far seek care elsewhere for some of their follow up appointments, if a routine procedure can be completed in a facility closer to their home, such as drain removal. Additional studies are needed to provide better clarity on this. Furthermore, it would be interesting to study how telemedicine affects follow-up encounters in this patient population.

Prior to the pandemic, telemedicine and video conferencing were used rarely. This form of medical communication was limited by regulations that mandated patients live in underserved locations and use telemedicine services only in remote physician offices, not in their own homes (11). Nevertheless, telehealth consultations with a remote plastic surgeon revealed timely and accurate responses in an emergency care facility pre-COVID-19, demonstrating promising applications to remote care with this mode of treatment (3). Since the pandemic, these regulations were eased, allowing for video conferencing from home (11). Specific to the practice of plastic surgery, video conferencing has been highly efficacious at assessing wounds (94% accuracy) and free flaps (94.1–97.4% accuracy) when compared to face-to-face visits (11). Despite these advantages, telemedicine must be used with caution as it can present unique challenges in patient care. Video conferencing can be problematic as a result of poor resolution or picture quality, and internet connectivity (12,13). Some patients are either unfamiliar with or have no access to technology, preventing the use of this modality (12). Doctors tend to overestimate the severity of a condition with the use of telemedicine (13). Ethical and privacy concerns present further barriers to this form of treatment (13). On one hand both physicians and patients consider the doctor/patient relationship to be worse with telemedicine, however, in plastic surgery patient satisfaction has been shown to be equal to or better than face-to-face visits (12,14,15). Telemedicine was not used in this study (7). The authors aptly point out that the utilization of telemedicine has been shown to be an effective method of improving post-operative care in patients living in remote areas from medical centers (7,13). Future studies could investigate the change in geographical barriers with the use of telemedicine.

We congratulate the authors for their work on the effect of geographical barriers on the outcomes of

postmastectomy breast reconstruction. The study does have some limitations, but it provides important information that can be utilized for the education of postmastectomy patients seeking breast reconstruction. It may be valuable to reassess the outcomes of this study in the post-COVID-19 era with the more widespread implementation of telemedicine. We look forward to future studies examining if geographic disparities remain in postmastectomy care with the advent of telemedicine.

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References

- Howard-McNatt MM. Patients opting for breast reconstruction following mastectomy: an analysis of uptake rates and benefit. *Breast Cancer* (Dove Med Press) 2013;5:9-15.
- Retrouvey H, Solaja O, Gagliardi AR, et al. Barriers of Access to Breast Reconstruction: A Systematic Review. *Plast Reconstr Surg* 2019;143:465e-76e.
- Paik AM, Granick MS, Scott S. Plastic surgery telehealth consultation expedites Emergency Department treatment. *J Telemed Telecare* 2017;23:321-7.
- Bauder AR, Sarik JR, Butler PD, et al. Geographic Variation in Access to Plastic Surgeons. *Ann Plast Surg* 2016;76:238-43.
- Bauder AR, Gross CP, Killelea BK, et al. The Relationship Between Geographic Access to Plastic Surgeons and Breast Reconstruction Rates Among Women Undergoing Mastectomy for Cancer. *Ann Plast Surg* 2017;78:324-9.
- Butler PD, Nelson JA, Fischer JP, et al. Racial and age disparities persist in immediate breast reconstruction: an updated analysis of 48,564 patients from the 2005 to 2011 American College of Surgeons National Surgery Quality Improvement Program data sets. *Am J Surg* 2016;212:96-101.
- Silverstein ML, Nesbit RD, Collins MS, Willson TD. The impact of geographical access challenges on outcomes of postmastectomy breast reconstruction. *Ann Breast Surg* 2023;7:34.
- Huang B, Dignan M, Han D, et al. Does distance matter? Distance to mammography facilities and stage at diagnosis of breast cancer in Kentucky. *J Rural Health* 2009;25:366-71.
- Dickens C, Joffe M, Jacobson J, et al. Stage at breast cancer diagnosis and distance from diagnostic hospital in a periurban setting: a South African public hospital case series of over 1,000 women. *Int J Cancer* 2014;135:2173-82.
- Turner M, Fielding S, Ong Y, et al. A cancer geography paradox? Poorer cancer outcomes with longer travelling times to healthcare facilities despite prompter diagnosis and treatment: a data-linkage study. *Br J Cancer* 2017;117:439-49.
- Saad NH, AlQattan HT, Ochoa O, et al. Telemedicine and Plastic and Reconstructive Surgery: Lessons from the COVID-19 Pandemic and Directions for the Future. *Plast Reconstr Surg* 2020;146:680e-3e.
- Ftouni R, AlJardali B, Hamdanieh M, et al. Challenges of Telemedicine during the COVID-19 pandemic: a systematic review. *BMC Med Inform Decis Mak* 2022;22:207.
- Vyas KS, Hambrick HR, Shakir A, et al. A Systematic Review of the Use of Telemedicine in Plastic and Reconstructive Surgery and Dermatology. *Ann Plast Surg* 2017;78:736-68.

14. Sorensen MJ, Bessen S, Danford J, et al. Telemedicine for Surgical Consultations - Pandemic Response or Here to Stay?: A Report of Public Perceptions. *Ann Surg* 2020;272:e174-80.
15. Gachabayov M, Latifi LA, Parsikia A, et al. The Role of Telemedicine in Surgical Specialties During the COVID-19 Pandemic: A Scoping Review. *World J Surg* 2022;46:10-8.

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