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Genetic Mutation Carriers: Special Considerations for Their Influence on a Modern Breast Reconstruction Practice

Ashley A. Woodfin and Anuja K. Antony

Abstract

With medical advancement, increasing numbers of genetic variations and mutations are being uncovered that offer greater insight into which patients have a predisposition for the development of breast cancer. Reasonable management for these patients includes high-risk surveillance, medical prophylaxis, or bilateral prophylactic mastectomy with immediate reconstruction which is becoming increasingly popular. However, this cohort of patients differs from the average breast cancer patient in that they are typically younger and may have distinct reconstructive objectives for their outcomes. This chapter considers this unique and expanding population, as well as their expectations for surgical outcomes both aesthetically and oncologically. We will discuss the evolving role of social media in this population, with patient to patient virtual information sharing and how this may impact patient referrals in a manner diverging from traditional hospital-based patterns. Furthermore, we discuss how practices in which cutting-edge and novel surgical treatments are available, such as pre-pectoral and single stage reconstruction, and that incorporate team collaboration with the surgical oncologist to deliver aesthetically pleasing results with nipple sparing mastectomy and concealed scars may ultimately be attractive to genetic mutation carriers concerned not only with risk reduction but also post-operative aesthetics.

Keywords: bilateral prophylactic mastectomy, genetic mutation carriers, breast reconstruction, referrals, direct to implant reconstruction

1. Introduction

Primed with internet and social media, high risk breast cancer patients today are increasingly aware of potential outcomes, both oncologic and aesthetic. Modern surgeons today are adapting to an era of technology where patients are empowered like never before. Patients are connected through online groups where they can support each other, share information regarding their treatment and discuss management well ahead of their surgical consultation. The era of the “simply grateful” patients has been replaced with an increasingly sophisticated generation of patients who can access information rapidly and network with other individuals facing similar decisions. Patients have the power to investigate, rate and review

their physicians and surgeons through online platforms, the results of which can have significant implications for a practitioner.

Considering the relative ease of obtaining information about surgical options coupled with patients' growing self-awareness regarding their own health, the high-risk breast cancer patient population now confronts a myriad of surgical options. Decisions regarding bilateral prophylactic mastectomy (BPM) are being contemplated by high risk mutation carriers who wish to not only elude breast cancer's grasp, but also remain physically attractive, feminine and desirable. In addition, awareness from prominent public figures and known mutation carriers, such as Angelina Jolie, has drawn admirers and critics alike for their decision to undergo BPM and reconstruction in the absence of cancer; surgeons must now adapt to a younger generation of patients with an elevated consciousness. A surgeon today must not only be constantly on top of the literature associated with breast cancer care, they must also evolve their practice to be cognizant that patients now may seek out their surgeons via less traditional methods. Online reviews, Facebook groups and virtual patient to patient interactions, which were once reserved for identifying high quality eating establishments, are now being used to distinguish high quality surgeons from a menu of practitioners. Physicians practicing in today's medical environment can no longer rely solely on traditional methods of establishing credibility such as pedigree, years of practice, and direct physician to physician recommendations. Google searches, medical review sites, online communities and social media can significantly impact a patient's impression of MD integrity and excellence.

The genetic mutation carrier (GMC) female patient seeking risk reduction surgery with reconstruction is unique and we hope to elucidate how a surgeon can navigate their associated unique considerations and enhanced expectations, both aesthetic and oncologic. We will discuss the role of social media for patient-to-patient virtual experience sharing, as well online physician review websites in regard to referral practices [1]. Furthermore, we will clarify what referral practices contributed to our institution's recent surge in the GMC patient population. In addition, we will discuss optimal collaboration between the surgical oncologist and plastic surgeon needed to provide cutting-edge surgical treatment and novel surgical techniques such as prepectoral (above the muscle) and direct to implant (single stage) reconstruction, as well as how these practices may attract future patients.

2. Decisions facing a younger population of breast surgery patients

GMCs are an emerging population of patients with unique characteristics, perspective, and expectations of surgery. Only 1 out of every 400 people in the general population is estimated to be a BRCA1/2 mutation holder, with ~5–10% of breast cancers at all ages being associated with an inherited gene mutation [2]. Currently the BRCA1/2, ATM, CHEK2, PALB2, TP53, PTEN, CH1, STK11, NBN, NF1 mutations all confer increased risk for breast cancer development, warranting the consideration of BPM for risk reduction [3]. Overall, we expect a 12% lifetime risk of breast cancer development in the general population without any risk factors [4]. This risk increases to 45–65% by age 70 in the population of known mutation carriers of BRCA1/2 [2]. BPM has been shown to reduce the risk by roughly 90% in high risk populations [3], with prophylactic mastectomy and immediate reconstruction becoming increasingly more popular [5, 6]. However, not all GMCs choose BPM, some may prefer to elect chemoprophylaxis or high-risk surveillance instead. This decision is often determined by patient factors, with a recent study showing that GMCs choosing BPM over surveillance tend to have a college education, income

>\$50,000, a first-degree relative with breast cancer, higher total number of relatives with breast cancer, and a prior pregnancy [7].

Frequently, woman does not receive a GMC status until after they are diagnosed with a cancer, generally at a younger age. Additionally, many are also being found prior to a cancer diagnosis because of a previously diagnosed family member that underwent that genetic work-up. With these avenues to diagnosis as a GMC, these patients are younger than the average breast cancer patient when they first see a surgeon. This younger age often plays a major role in the decisions these patients make regarding risk reduction surgery and reconstruction.

GMCs that elect for BPM and reconstruction tend to have higher aesthetic expectations than those who require the procedure for treatment of active cancer. There are multiple reasons for this, chief among them being that prophylactic surgery is not considered 'life-saving' and that the patients are at a point in life where cosmesis may play a larger factor. The heightened concern for looking 'natural' and 'unoperated' is an ongoing driver for novel surgical treatments when caring for a patient in this cohort.

In addition, unlike a breast cancer patient, GMC patients have the option of choosing when they want to undergo BPM. Certain life factors can greatly influence when a patient decides to ultimately undergo this prophylactic surgery in her lifetime. Large life events such as marriage and having children can be a major concern in this younger population. Additionally, bilateral mastectomies eliminate the possibility of a woman breastfeeding her children, which many women value as an important bonding experience between mother and child. Aspiring mothers considering BPM may not want to sacrifice this opportunity and timing will be an important factor. A GMC patient's decision regarding surgical timing for BPM is completely personal, and ultimately weighs quality of life with the risk of breast cancer development during the delay. Thus, in a patient strongly desiring to breast-feed her children, family planning plays a very important role in timing for BPM.

3. Long term considerations: implant longevity, surveillance

Yet another facet of caring for the younger age breast surgery patient population is regarding the long-term durability of their reconstruction following BPM. Historically, it has been recommended that patients who underwent cosmetic breast augmentation have their implants exchanged approximately every 10 years. This was after a study published in 1995 found that 81% of implants studied at 10 years were found to have been ruptured [8, 9]. However, due to advancements in implant technology resulting in increased stability of silicone implants using cohesive gel cross-linking technology and thicker implant shells, it is suggested that silicone implants today have greater longevity, but still are not considered 'lifetime devices'. A patient can expect her implants to last at least a decade, with a 1% risk of rupture per year [10]. Another source estimates the new cohesive silicone implants to have a lifetime of 25–35 years [11]. Considering that women may be undergoing BPM with immediate reconstruction as early as their second and third decades of life, they would be expected to live another 50 or greater years following this surgery. Over this long of a timespan, a patient's implants may experience significant degradation, even considering new implant technology, with future surgery for replacement being considered by many an eventuality [10, 11].

It is important to remember that implant-based breast reconstruction comes with risk of prosthesis rupture, albeit minimal. Commonly, silicone implant rupture is related to the normal aging of the prosthesis, but can also rarely be caused by forceful blunt trauma [11]. Implant rupture can occur both silently (without

symptom development) or symptomatically, and is also classified as being intracapsular or extracapsular in nature. Intracapsular rupture is defined as being contained within the fibrous breast capsule, whereas extracapsular rupture is more concerning and consists of extravasated silicone gel outside of the fibrous capsule into the surrounding tissues and can lead to inflammation and granuloma formation [11]. Extracapsular rupture is a rare occurrence with silicone implants [29], especially considering the high cohesive types used today. At this time, formal recommendations from the FDA include screening for silent rupture in patients with silicone implants using MRI at 3 years following prosthesis placement, and then every 2 years thereafter [12]. However, a recent meeting of the advisory panel to the FDA released recommendations for revision in implant rupture screening guidelines in late March 2019. These updated recommendations consist of MRI screening at 5–6 years post-operatively, and then every 2–3 years thereafter, with ultrasound being an acceptable alternative to MRI for screening in asymptomatic patients [13]. Unfortunately, these amendments are considered just panel recommendations to the FDA at this time, with the notion that they will be formally adopted by the agency in the upcoming months.

Another critical consideration in this patient population is that of continued surveillance following BPM and reconstruction. As discussed earlier, GMC patients need to be educated about the persistent need for surveillance despite prior mastectomy. Patients should understand that although the majority of breast tissue is removed, the small amount left behind can still ultimately allow for cancer development. Traditional surveillance with mammography is not an option following BPM with reconstruction, requiring this responsibility be placed on the patient and her physicians. Bearing this in mind, it is important for these patients to continue to follow with medical practitioners regularly. Furthermore, self-breast examination and awareness is encouraged to monitor for the formation of any new bumps or irregularities, as these could be cancer development from remnant breast tissue.

Considering all the long-term matters discussed above, it is essential for both the surgical oncologist and plastic surgeon to fully discuss these factors with prospective BPM and reconstruction patients. These factors may play important roles in the choice of those extremely adverse to further procedures, and may ultimately influence their decision regarding whether or not prophylactic surgery is the optimal way to manage their GMC status.

4. Prophylactic surgery and high expectations

Reconstructive expectations of breast cancer patients have evolved greatly over the past few decades with quality of life and survivorship becoming a central focus. This is especially true when treating GMCs, putting a greater demand on the surgical collaboration required for successful execution. Today, it is not uncommon for patients to expect their post-surgical breasts to improve their appearance and more closely match their desired size and shape than their pre-surgery breast aesthetic. Ultimately, the GMC patient has a choices regarding surgical timing, type and the decision to pursue surgery or not, so expectations are inherently high.

One reason for this rise may be the downstream effect of popular culture with increasing acceptance for a GMC's surgical choices, normalizing the idea of having a bilateral mastectomy with reconstruction for risk reduction, while also demonstrating the fact that a woman can still be considered desirable and attractive after this surgery. Angelina Jolie, through a series of op-ed pieces written for the New York Times and other media outlets, recounted her personal journey with having the BRCA mutation, the passing of her mother from ovarian cancer, and

her surgical choices for BPM and reconstruction. She single-handedly has perhaps most profoundly affected public opinion regarding BPM and amplified awareness for a GMC's breast cancer risk. Today, the modern GMC female interested in BPM expects she will retain her femininity and ability to identify as a beautiful woman post-operatively.

For the modern surgeon, it is important to convey a confident, but realistic depiction of the likely outcomes during the pre-operative consultation. This includes discussion of individual patient factors that can influence the final aesthetic outcome such as BMI, current breast size and ptosis, as well as the possibility of requiring revisional procedures in the future (e.g., fat grafting). Patients with realistic expectations of their reconstructive journey and cosmetic outcomes have been shown more likely to be satisfied with their BPM results. Additionally, it appears that patients who discuss BPM with their partners prior are more likely to be satisfied with intimacy post-operatively [14].

5. Online era: social media and patient influence

Social media plays an ever-expanding role in our lives. There are many online support groups for mutation carriers that easily and immediately connect patients around the world [15]. Within these online groups, and social media in general, now exists a special category of users referred to as 'influencers'. These are users who cultivate a particularly large community of 'followers' with which they share experiences, ideas, products, and influence the general attitudes of those that follow them. It is not uncommon to see an individual sharing their entire experience as a 'mutation carrier,' 'cancer thriver,' or 'cancer survivor' on some form of social media (e.g., Instagram, Facebook, or a blog) [15]. This influence is not confined to the normal events of everyday life, but also extends to health decisions. Since the experiences of one person can be so easily disseminated, the clinical course and opinions of a single patient can disproportionately reverberate throughout the entire community. This process can act as an endorsement for, or dissuasion against, a certain treatment, surgery, or surgeon depending on the level of satisfaction of a single patient. This is particularly important to a surgeon's referral-based practice as the large social media following of certain patients can have greater consequences, both good and bad, to their "business" than seen historically.

Moreover, online review sites for patients to publicly rate their physicians are becoming more and more prevalent. Patients are taking control over who they choose for their care, and this does not exclude surgeons. Many visit these websites prior to committing their care to a certain surgeon, and use the information presented there to help guide their decision. Yet, an important question needs to be addressed: do the ratings on these websites actually correlate with the clinical outcomes achieved by the physicians? Recently this has become an area of intrigue in the surgical community, and over the past few years, a handful of small studies were published exploring the possible correlation between online health ratings of surgeons and their surgeon-specific measurable outcomes. Some of these investigated outcomes include infection rate, re-admission rate, revisional surgery rate, and risk-adjusted mortality rate, in surgeries such as total knee replacements, hernia repairs, and coronary artery bypass grafting. All of these studies failed to find any correlation between a surgeon's online ratings and their measurable outcomes, including those listed above [16–18]. These results seriously undermine the utility of such websites, however are unlikely to be realized by the average health care consumer.

Furthermore, a similar study went one step further to try and identify what positively versus negatively influences a physician's rating by reading and analyzing the written reviews/comments on these websites. In order to accomplish this, the reviews were read by study staff and comments were classified as being either surgeon-dependent factors (competence or likeability) or surgeon-independent factors (office environment, staff, billing, etc.). Interestingly, this study found that comments on surgeon-dependent factors were associated with higher ratings, and furthermore that comments on surgeon-independent factors were associated with lower ratings [19]. This ultimately reinforces the results of the previously discussed studies, that physician ratings are not associated with outcomes, but rather highly influenced by office interactions. However, it does emphasize the importance of a good bedside manner for the surgeon, as well as his office staff, in addition to bringing awareness to the significance of the overall perceived patient experience when rating their physician on these websites—not unlike how a patron would consider their entire culinary dining experience and not just their food to formulate a restaurant review.

6. Our experience: what guides patient referrals

To better understand how the internet and social media affects patient referrals, we reviewed our patient database and identified recent GMCs in the absence of cancer ($n = 10$) that underwent BPM with immediate reconstruction at our institution. GMCs without a current diagnosis of cancer were of interest as they are inherently less pressured to make surgical decisions. Given these patients did not have active cancer, they had the advantage of taking as much time as they needed to research online, look for personal referrals, and read online health grade reviews before making their decision. Theoretically, they also had less tying them to a specific institution given no cancer diagnostic information had to be transferred from one institution to another. Patients' referral patterns were reviewed and, if interested, were asked to complete a telephone survey (70% response rate) regarding their decision to pursue surgery at our institution.

Many stated that they first chose to undergo consultation at our institution because of internal referrals from physicians they already trusted. Most notably the patients stated their referrals tended to come from OB/GYNs when looking a surgical oncologist, and from the surgical oncologist when looking for a plastic surgeon. This emphasizes the importance of a strong collaborative relationship between the two surgeons.

The majority stated that the aspect of utmost importance in confirming their decision was feeling confident and comfortable with their surgeons after meeting them for initial consultations. Many women stated that their interactions with both the surgical oncologist and plastic surgeon were very open and honest, especially in taking the time to answer all the patients' questions. They felt a strong personal connection with their surgeons and the warmth they experienced helped build trust, which comforted them and positively influenced their decision to receive care at our institution.

For many, the internet and social media served as a resource affirming their decision to receive care at our institution. One patient detailed that her surgical oncologist was mentioned favorably in Facebook groups, and plastic surgeon was known to have a great reputation online as well, but noted that this did not primarily drive her decision. Approximately one third of the patients looked at online health reviews and ratings for their surgeons prior to committing care to our institution, and stated again that these served to positively reinforce their decision.

When asked about the most important factor regarding these surgeries, the majority of former patients stated that risk reduction was most important to them, however cosmetic outcomes were found to be almost equally as important. Younger patients appeared more concerned with cosmetic outcomes. In regard to novel surgical techniques attracting patients and influencing their decisions, most stated that the possibility of having single stage, also known as direct to implant (DTI), reconstruction was very appealing to them, and was sought out. Knowing that their plastic surgeon was a specialist in prepectoral DTI reconstruction was important to these women as well. However, not all were candidates for this option at initial consultation, but this fact did not dissuade their ultimate decision.

7. Novel reconstructive techniques: a patient attractor

We believe that in ultimately selecting a plastic surgeon for their breast reconstructive needs, the modern GMC patient not only evaluates outcomes, but also considers surgeons performing state-of-the-art procedures, using the newest technologies and novel techniques, especially when they offer obvious advantages to the patient. This includes pre-pectoral implant placement, as well as single stage (also referred to as direct to implant (DTI)) reconstruction. Though not necessarily actively sought out by all, the possibility of being able to have immediate single stage reconstruction could solidify a patient's decision to receive care with a certain plastic surgeon by offering them the option of a shortened reconstructive course. More recently popularized mastectomy techniques such as the nipple sparing mastectomy (NSM), when oncologically appropriate, are being more actively sought out from oncologic surgeons as well, as they also contribute to more aesthetically pleasing results.

The nipple is generally considered a distinguishing feature of a natural breast. Considering this fact, NSM continues to be increasingly popular with GMCs. In 2018, a review of the American Society of Breast Surgeons (ASBrS) NSM database showed the majority of NSMs as being performed for prophylactic reasons [20]. Furthermore, NSM patients tend to be younger, Caucasian, and have smaller BMIs [21]. Another study showed higher body image scale scores in NSM compared to skin sparing mastectomy (SSM), but the difference was not statistically significant [22]. Other studies have also noted higher psychosocial [23] and sexual wellbeing scores in NSM patients [21].

However, NSM is not without risk; their documented complication rate is low but not insignificant, and includes possible complications to the nipple areolar complex (NAC) such as nipple necrosis and epidermolysis, in addition to infection and mastectomy flap necrosis risk seen in all mastectomies. A recent review of the ASBrS NSM database documented a NAC complication rate of 4.4% [20]. Moreover, there is a statistically significant decrease in the measured sensation of the NAC after NSM when compared to control groups [22]. Unfortunately, this reality of a nipple sparing mastectomy is not always completely understood by patients prior to consultation. Explaining these risks and realities can be more difficult in a patient population that has less tolerance for imperfection because of how it may affect their quality of life. Transparency and informed consent remain critical components to counseling the GMC patient considering BPM.

New techniques in reconstructive surgery are also likely to influence a patient's decision on their surgeon preference. Novel techniques available include the option for prepectoral implant placement, as well as single stage (direct to implant) reconstruction. The availability of these techniques to patients depends on several factors, the first of which being plastic surgeon's experience with the procedures,

the patient's current and desired final appearance, as well as mastectomy flap thickness, perfusion and viability.

Two-stage breast reconstruction using tissue expanders placed subpectorally has been the traditional method for immediate breast reconstruction since the 1970s. This technique was developed during a time when mastectomies were more radical, excising more skin in the surgical process. Over time, the progression of mastectomies from modified-radical to skin-sparing, and now nipple-sparing, has increased preservation of the breast envelope and allowed for reconstructive advancements as well. These larger breast envelopes create the option for placing implants at the initial surgery without placing excess tension on the mastectomy flaps. In properly chosen patients, this technique can be employed without an increased risk for complications [24]. Reconstructive surgery performed in two stages has drawbacks that DTI circumvents including the avoidance of multiple episodes of anesthesia [25–28]. Recent studies have also elucidated other possible advantages with DTI, including increased patient satisfaction, reduction in pain, and possible reduction in cost when comparing DTI with two stage reconstruction [25–27]. DTI reconstruction when first introduced capitalized on the safety and advantages of an expanded dual plane pocket using acellular dermal matrix (ADM) as an inferior sling to support implant placement under the pectoralis muscle in a single stage surgery [29, 30]. Despite the perceived benefits, DP DTI reconstructions still retain the same issues created by placing a prosthesis in the subpectoral or dual plane (DP) position, namely animation deformity and pectoralis major origin disruption causing weakened adduction [31].

Prepectoral (PP) implant placement resolved the issue of animation deformity caused by subpectoral placement [31, 32]. However, without routine use of ADM, the subcutaneous or prepectoral techniques were historically fraught with high rates of early capsular contracture [33], flap necrosis, implant loss [34], and concern for worsened aesthetics (e.g., implant visibility, rippling) often requiring additional procedures for revision such as fat grafting. One study compared PP placement with and without the use of ADM, demonstrating significantly lower rates of capsular contracture in the ADM cohort [35]. From our experience, the crucial components necessary for successful PP DTI include initial intraoperative assessment of flap perfusion with sizer in place, followed by the creation of a tight anterior ADM pocket for implant insertion [24]. Use of anterior ADM coverage for implant support and off-loading pressure on the mastectomy flaps prevents the complications traditionally associated with PP [24], while avoiding the disadvantages of DP placement. Despite this, the PP DTI technique has yet to be widely adopted secondary to the lingering concerns over historical complications and the steep learning curve.

Our group performed one of the largest DTI-only comparative study ($n = 134$) between outcomes of dual plane (DP) DTI and prepectoral (PP) DTI, and showed an overall low complication incidence, with PP DTI complications being slightly less frequent (PP 2% vs. DP 12%, $p = 0.07$). No implant losses were documented in this study. Furthermore, regarding the concern over increased need for aesthetic revisional procedures in PP patients, no difference was shown in the likelihood of either DP or PP DTI patients to undergo these additional procedures. Last, this study reinforced the positive aesthetic outcomes of PP DTI with a blinded panel scoring PP DTI reconstructions higher than DP DTI in terms of aesthetic outcome [32]. This study effectively corroborated the non-inferiority of PP DTI to DP DTI reconstructive techniques, as well as demonstrated its advantage in better cosmetic outcomes. Because of this, the ability to perform PP DTI could be potentially attractive to patients concerned with aesthetic outcomes when looking for a reconstructive surgeon.

Finally, it should be noted that appropriate patient selection is of utmost importance for successful PP DTI. As explained earlier in this chapter, adequate mastectomy flap perfusion is crucial for employment of this reconstructive technique, and we advocate intra-operative use of fluorescence imaging technology to ensure this. Our group considers active smoking and uncontrolled medical co-morbidities to be absolute contraindications to PP DTI. Whereas, obesity is only considered a relative contraindication and our group has found that the use of oncoplastic reconstructive techniques in conjunction with implant placement has yielded great results. More ideal patients for PP DTI include those desiring results similar to their native breast size [24], though we have found upsizing of the breast to be possible in the compliant envelope.

8. Surgeon collaboration: oncologic and reconstructive considerations

The goal of BPM in GMCs is risk reduction, and in order to achieve this goal, removal of as much breast tissue as possible provides the best oncologic benefit. A mastectomy, while drastically reducing cancer occurrence, does not completely eliminate the possibility of breast cancer development in the future. As tissue removal and oncologic benefit increases, risk benefit must be considered as excessively thin mastectomy flaps incur higher risk for ischemia, complicating reconstructive efforts. Adequate flap vascularity is a critical component to successful breast reconstruction, especially single stage, with thicker flaps conferring less risk of ischemia and flap necrosis [31, 36]. This relationship between removing the maximum amount of breast tissue while retaining flap perfusion are the competing priorities that surgical oncologists and plastic surgeons must navigate effectively together.

Approaching a combined mastectomy/reconstruction patient most importantly requires effective communication between the two surgeons. Additionally, in our institution we employ fluorescence imaging technology in immediate breast reconstruction cases to help quantify perfusion to the flaps [37]. This practice identifies the flaps at risk for ischemia so that the appropriate reconstructive path for each patient can be followed, guiding the decision-making process surrounding whether a patient is more appropriate for one or two stage reconstruction, or delayed reconstruction.

9. Conclusion

Overall, the improved understanding of genetic mutation and risk for breast cancer development has created a special population of breast surgery patients. They have specific priorities that must be considered when it comes to surgical planning, risk tolerance, long term considerations, and both oncologic and aesthetic outcomes. This population's younger age may play a large role in expectations with higher value placed on cosmesis. In response, techniques such as NSM and single stage prepectoral reconstruction are being more commonly used to meet this population's particular demands for excellent outcomes, both oncologic and cosmetic.

Considering our modern online era, we believe that the internet and social media will continue to increasingly affect patient referral patterns. Although online rating and review websites so far have shown no correlation with a surgeon's actual measurable outcomes, it appears as though they continue to be popular information sources for prospective patients and help confirm their decisions on where to receive care. Being mindful of this online presence will be crucial for the successful

modern plastic surgery practice, in addition to offering novel surgical techniques to satisfy the expectations of today's patients. However, the traditional practice of upholding a good bedside manner, developing excellent surgeon-patient rapport, and patient trust in their referring physician will continue to be important factors.

Conflict of interest

Dr. Ashley Woodfin has no conflicts of interest to disclose. Dr. Anuja Antony has a consultant agreement with Allergan Medical Inc. She received no compensation or support for this book chapter.

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