

ORIGINAL RESEARCH ORJİNAL ARAŞTIRMA

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Current Attitudes of Plastic Surgeons in Türkiye Regarding Breast Augmentation Surgery: A Descriptive Study

Meme Büyütme Cerrahisinde Türkiye'deki Plastik Cerrahların Güncel Tutumları: Tanımlayıcı Çalışma

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ABSTRACT Objective: There are many nuances in each stage of breast augmentation surgery. In clinical practice, each plastic surgeon may have different preferences during different stages of the surgery. In this study, a survey was conducted to reveal the current attitudes of plastic surgeons in breast augmentation surgery. **Material and Methods:** A 35-item electronic survey was administered to plastic surgeons in Türkiye. The survey included questions about common surgical practices, the use of new technologies, and technical issues in secondary surgery. The collected data were systematically analyzed. **Results:** A total of 130 plastic surgeons participated in the survey. The preferred incision was inframammary in 95 percent of cases, periareolar in 3 percent, and transaxillary in 1 percent. The most frequently preferred pocket plane was the submuscular plane in 63 percent of cases and the subglandular or subfascial plane in 37 percent. Ninety-three percent of the participants stated that they always preferred silicone implants. Seventy percent of the participants used textured implants more frequently than smooth-surfaced implants. Eighty-three percent of the participants did not use an insertion funnel. Forty percent of the participants mostly used implants with a volume of 300-350 cc, and 31% of them mostly used implants with a volume of 275-325 cc. **Conclusion:** This study revealed that there is a trend toward more frequent use of inframammary incisions, silicone as the filling material, textured surfaces, and implant volumes larger than 275 cc in Türkiye. The authors think that complications that may arise in the long term could be different due to different preferences among countries.

ÖZET Amaç: Meme büyütme cerrahisi, her aşamasında çeşitli ince-likler içermektedir. Plastik cerrahlar, genellikle prosedürün farklı aşamalarında bireysel tercihler sergilemektedir. Bu çalışma, plastik cerrahların meme büyütme cerrahisiyle ilgili mevcut eğilimlerini ve uygulamalarını araştırmayı amaçlamaktadır. **Gereç ve Yöntemler:** Türkiye genelindeki plastik cerrahlara 35 maddelik elektronik bir anket uygulanmıştır. Anket, yaygın cerrahi uygulamalar, yeni teknolojilerin kullanımı ve sekonder cerrahide teknik konuları içermektedir. Toplanan veriler sistematik bir şekilde analiz edilmiştir. **Bulgular:** Anketi yanıtlayan 130 plastik cerrahın %95'i inframammary insizyonu tercih ederken, %3'ü periareolar insizyonu ve %1'i transaksiller insizyonu tercih etmektedir. En çok tercih edilen cep kas altı olup %63 oranında kullanılırken, %37 oranında subglandüler veya subfasiyal düzey tercih edilmiştir. Katılımcıların %93'ü genellikle silikon implantları tercih ettiklerini belirtmiştir. Katılımcıların %70'i pürüzlü yüzey implantları, düz yüzeyli implantlardan daha sık kullanmaktadır. Kullanıcıların %83'ü yerleştirme hunisi kullanmamaktadır. Katılımcıların %40'ı genellikle 300-350 cc hacmindeki implantları, %31'i ise 275-325 cc hacmindeki implantları tercih etmektedir. **Sonuç:** Bu çalışma, Türk plastik cerrahlarının inframammary insizyonu, silikon implantları, pürüzlü yüzey implantları ve 275 cc üzeri hacmindeki implantları daha sık tercih ettiklerini göstermektedir. Yazarlar, farklı ülkelerde uygulanan tekniklerin ve tercihlerin uzun vadeli komplikasyonlar üzerinde etkili olabileceğini düşünmektedir.

Keywords: Breast implants; breast implantation; mammoplasty

Anahtar Kelimeler: Meme implantları; meme implantasyonu; mammoplasti

Breast augmentation is one of the most commonly performed surgical procedures worldwide.^{1,2} This operation is carried out using various surgical

techniques and implant options to achieve aesthetic goals. The first attempts at breast augmentation date back to the late 1800s. In 1895, Czerny used a lipoma

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taken from a patient's back to augment the breast.³ In 1961, Cronin and Gerow developed the first silicone prosthesis.⁴ These implants are known as the first-generation implants. The implants used in current practice are 5th-generation implants.⁵ With the development of implants, breast augmentation surgery has become increasingly popular, leading to more successful surgical outcomes. However, the increasing number of cases has also led to a significant rise in the number of complications.^{6,7}

While there is a consensus on some surgical principles, many issues are still controversial. Plastic surgeons have different options regarding the choice of incision, implant characteristics, pocket plane, postoperative care, and complication management. Recent additions to these options include three-dimensional imaging, autologous fat grafting, acellular dermal matrix, and funnel use.⁸⁻¹¹ Surgeons can customize all these options based on their patients' needs and their own surgical experience.

There is no comprehensive and up-to-date study on the attitudes of plastic surgeons towards breast augmentation in Türkiye. In this study, a survey study was conducted to reveal in detail the practices of Turkish plastic surgeons in breast augmentation surgery.

MATERIAL AND METHODS

A 35-item survey developed by Hidalgo and Sinno was translated into Turkish and sent as an electronic survey to plastic surgeons in Türkiye via email groups.¹² The survey was created using Google Forms (Google, Mountain View, CA, USA). It began in May 2024 and was completed in June 2024. The survey included questions on the site of incision, length of incision, implant characteristics, surface type, complication management, and other details in breast augmentation surgery. Participants were kept anonymous and informed about the purpose of the survey. Ethical committee approval is not required for such studies. The guiding principles of the Helsinki Declaration were followed. The survey results were analyzed using standard methods. No statistical analysis methods were used. The 35-item survey is included in [Appendix 1](#).

APPENDIX 1: 35-item Questionnaire

1. How many years have you been practicing as a plastic surgeon?
 - 0-5
 - 6-10
 - 11-15
 - 16-20
 - 21-25
 - 25
2. What is your work setting?
 - Solo practice
 - Solo practice within a shared clinic
 - Small plastic surgery team (2-5 surgeons)
 - Large plastic surgery team (≥6 surgeons)
 - Other (multidisciplinary group, academic, military)
3. How many primary breast augmentation surgeries do you perform annually?
 - 1-50
 - 51-150
 - 151-250
 - 251-350
 - 350
4. For what purpose do you use breast implants?
 - 100% reconstructive
 - 25% cosmetic, 75% reconstructive
 - 50% cosmetic, 50% reconstructive
 - 75% cosmetic, 25% reconstructive
 - 100% cosmetic
5. How frequently do you use anatomical implants?
 - I do not use anatomical implants
 - I use anatomical implants less than 50% of the time
 - I use anatomical implants in about half of the cases
 - I use anatomical implants more than 50% of the time
 - I use anatomical implants in all cases
 - I have never used anatomical implants
6. What are your concerns regarding anatomical implants? (You can select more than one)
 - No concerns
 - Concerned about lack of proven aesthetic superiority
 - Concerned about risk of malrotation
 - Concerned about surface texturing (e.g., late seroma, anaplastic large cell lymphoma)
 - Concerned about limited incision options
 - Concerned about the need for a longer incision
 - Concerned about high cost
 - Other (please specify)
7. How frequently do you use autologous fat for primary breast augmentation?
 - Never
 - Use autologous fat less than 50% of the time
 - Use autologous fat in about half of the cases
 - Use autologous fat more than 50% of the time
 - Use autologous fat in all cases
8. What are your concerns regarding the use of autologous fat in primary breast augmentation? (You can select more than one)
 - No concerns
 - Concerned about it being a complex procedure
 - Concerned about limited augmentation capacity
 - Concerned about potential donor site deformity
 - Concerned about the need for multiple autologous fat grafting procedures
 - Concerned about high cost
 - Other (please specify)
9. How frequently do you use autologous fat as an adjunct technique? (With the primary technique)
 - Never
 - Use autologous fat as an adjunct technique less than 50% of the time
 - Use autologous fat as an adjunct technique in about half of the cases
 - Use autologous fat as an adjunct technique more than 50% of the time
 - Use autologous fat as an adjunct technique in all cases
10. Have you encountered a case of ALCL in your clinical practice?
 - Yes
 - No

APPENDIX 1: 35-item Questionnaire (continued).

11. Would you perform breast augmentation on a patient with heterozygous factor V Leiden mutation?
- Yes, without any preventive measures
 - Yes, with compression devices and anticoagulation/chemoprophylaxis
 - Yes, with compression devices and postoperative ultrasonography
 - No
12. Do you utilize 3-dimensional imaging technology for preoperative planning?
- Yes
 - No
13. If yes, what is the role of 3-dimensional imaging in your clinical practice?
- Effective marketing tool
 - Effective educational tool
 - Effective sizing tool
 - Complicates the consultation process
 - Not proven to be beneficial in terms of cost and effort
 - Other
14. Do you use acellular dermal matrix (ADM) in secondary cases?
- Yes
 - No
15. If yes, for what purposes do you use ADM?
- Capsular contracture
 - Contour deformity
 - Capsular support suture
 - Rippling or thin skin flaps
 - Other
16. How often do you use a funnel (insertion device) when placing an implant?
- Never
 - Use a funnel less than 50% of the time
 - Use a funnel in about half of the cases
 - Use a funnel when placing a large implant through a small incision
 - Use a funnel more than 50% of the time
 - Generally use a funnel
17. If you do not use a funnel, what are your reasons for not using it? (You can select more than one)
- Additional cost
 - Additional procedural step
 - Not applicable for form-stable implants
 - Potential to damage the implant's outer layer
 - Do not believe it is necessary
18. Do you use adhesive plastic material for implant protection before placement? [e.g., Tegaderm (3M, St. Paul, Minn.), Op-Site (Smith & Nephew, London, UK), Ioban (3M)]
- Only on the nipple-areola complex
 - Only on the incision
 - On both the nipple-areola complex and the incision
 - Do not use
19. What method do you use for implant size selection? (You can select more than one)
- Sizing with round silicone implants
 - Sizing with silicone forms
 - Sizing with rice bags or other methods
 - Sizing with mathematical measurements
 - Sizing with imaging methods
 - None
20. What is the filling material of the implants you use?
- 100% silicone
 - Mostly silicone/sometimes saline
 - Use both equally
 - Mostly saline/sometimes silicone
 - 100% saline
21. What is the surface type of the implants you use?
- 100% smooth surface
 - Mostly smooth/sometimes textured
 - Use both equally
 - Mostly textured/sometimes smooth
 - 100% textured
 - Polyurethane surface

APPENDIX 1: 35-item Questionnaire (continued).

22. What size are the implants you use?
- <250 cc
 - 250-300 cc
 - 275-325 cc
 - 300-350 cc
 - 350 cc
23. Which company's implants do you use? (You can select more than one)
- Allergan
 - Mentor
 - Nagor
 - Polytech
 - Motiva
 - Sientra
 - Other
24. What is the most common incision you use?
- Axillary
 - Periareolar
 - Inframammary
 - Periumbilical
25. What is the most common pocket plane you use?
- Complete submuscular
 - Partial submuscular
 - Subglandular
 - Subfascial
26. Do you use antibiotic prophylaxis? (You can select more than one)
- Intravenous antibiotics during anesthesia induction
 - Irrigation with povidone-iodine only
 - Irrigation with povidone-iodine and bacitracin (Bacitracin Zinc, Pharm-RX Chemical Corp., ABD) or neomycin (Neomycin Sulfate, Medimetrix Pharmaceuticals, Inc., ABD)
 - Irrigation with classic triple antibiotics
 - Other types of irrigation
 - Postoperative oral antibiotic therapy
 - Do not use antibiotic prophylaxis
27. Do you recommend postoperative massage to your patients?
- Yes
 - No
28. For how long do you recommend physical activity restriction to patients?
- 1 day
 - 1 week
 - 2-3 weeks
 - 4 weeks
 - 6 weeks
 - 8-12 weeks
29. Do you use pharmacological agents for capsular contracture in your clinical practice?
- Yes, as prophylaxis in all cases
 - Yes, only at the initial signs of capsular contracture
 - Yes, as the first treatment approach for established contracture
 - No
30. Are pharmacological agents effective in preventing/reducing capsular contracture?
- Yes
 - Only effective if used early
 - Not sure
 - No
31. Which non-surgical methods do you use for treating capsular contracture? (You can select more than one)
- Leukotriene inhibitors
 - Papaverine (Papaverin HCL, Galen İlaç Sanayi ve Ticaret A.Ş., Turkey)
 - Cox-2 inhibitors
 - External ultrasound
 - Electromagnetic field therapies
 - Massage
 - Closed capsulotomy
 - None
 - Other

APPENDIX 1: 35-item Questionnaire (continued).

32. Apart from hematoma and infection, what is the most common reason for reoperation?
- Capsular contracture
 - Implant malposition
 - Implant failure
 - Seroma
 - Size change
33. What surgical technique do you use for managing capsular contracture?
- Anterior capsulectomy
 - Total capsulectomy
 - Capsulectomy and coverage with ADM
 - Creating a new pocket
 - Creating a new pocket and coverage with ADM
34. What is the most frequently used technique for managing recurrent capsular contracture in patients with subpectoral (dual plane) implants?
- Anterior capsulectomy
 - Total capsulectomy
 - Capsulectomy and coverage with ADM
 - Creating a new pocket
 - Creating a new pocket and coverage with ADM
 - I do not perform surgical treatment in the presence of bilateral capsular contracture and asymmetry
 - I recommend implant removal
35. What method do you most frequently use in the treatment of double-bubble and bottoming-out?
- Percutaneous suture or external support when the onset is early
 - Capsulorrhaphy only
 - Capsulorrhaphy with ADM support
 - Removal and later reimplantation of the implant
 - Removal of the implant and switching to a different type of implant
 - Reformation of the inframammary fold

RESULTS

A total of 130 responses were received. Because the response rate was 18.13 percent, it was concluded that the participation was low compared to the survey conducted by Hidalgo and Sinno with members of the American Society of Plastic Surgeons.¹²

CURRENT DISCUSSIONS

One-third of participants never use anatomical implants, while half use them in less than half of the cases (48.1%). The 3 most common concerns about anatomical implants are the potential for malrotation (41.1%), the lack of proven aesthetic superiority compared to round implants (22.5%), and the high cost (18.6%) (Table 1).

The use of autologous fat as a primary breast augmentation technique is preferred by approximately half of the participants (53.1%). However, the majority of those who use autologous fat stated that they use it in less than 50 percent of cases. The most

TABLE 1: Current controversies

Controversy	% of total respondents
Use anatomical implants	
Never	29.5
<50%	48.1
Half the time	10.9
>50%	6.2
Always	5.4
Concerns regarding anatomical implants (can select more than one)	
No concerns	22.5
Aesthetic result not proven superior	22.5
Malrotation potential	41.1
Texturization problem (late seroma, ALCL)	10.1
Limited incision option	3.9
Larger incision	4.7
Higher cost	18.6
Other	7
Use of autologous fat for primary augmentation	
Never	46.9
<50%	46.9
Half the time	3.9
>50%	1.6
Always	0.8
Concerns regarding autologous fat as a primary technique (can select more than one)	
No concerns	25.6
Process too complex	10.4
Limited augmentation potential	41.6
Potential donor-site deformity	9.6
May require multiple fat-grafting procedures	23.2
Cost	8
Other	15.2
Use of autologous fat as a supplemental technique	
Never	26.2
<50%	61.1
Half the time	5.6
>50%	6.3
Always	0.8
Seen a case of ALCL in your practice	
Yes	1.6
No	98.4
Whether or not to operate on a heterozygous factor V Leiden patient	
Yes, no special precautions beyond SCDs	14.8
Yes, with anticoagulation/chemoprophylaxis and SCDs	48.4
Yes, with SCDs and postoperative ultrasound	1.6
No	35.2

ALCL: Anaplastic large cell lymphoma; SCDs: Sequential compression devices

common concerns about this method are the limited augmentation potential (41.6%) and the potential need for multiple fat-grafting procedures (23.2%).

Seventy-four percent of the participants use autologous fat grafting as a supplemental technique with implants. However, the majority of those who use autologous fat grafting as a supplemental technique stated that they use it in less than 50 percent of cases (Table 1).

One point six percent of the participants had seen a case of breast implant-associated anaplastic large cell lymphoma (BIA-ALCL). Regarding deep vein thrombosis, another matter of concern, about 1-3 of the participants prefer not to perform breast augmentation on patients with heterozygous factor V Leiden mutation, while the participants who perform surgery prefer to use compression devices at a minimum. Less than half of the participants (48.4%) consider adding anticoagulation/chemoprophylaxis as a preventive measure (Table 1).

NEW TECHNOLOGIES

Most participants (82.8%) do not use 3-dimensional imaging in their current practice. According to the participants who utilize 3-dimensional imaging technologies, the most important advantages are that it is an effective sizing tool (31.7%), an effective educational tool (22%), and an effective marketing tool (12.2%) (Table 2).

Approximately 13 percent of the participants use acellular dermal matrix in secondary cases. According to the participants who use the acellular dermal matrix in secondary cases, the indications for its use are capsulorrhaphy buttress (26.9%), and ripples or thin tissues (30.8%) (Table 2).

Eighty-three and a half percent of the participants do not use an insertion funnel for implant placement, while only 2.4 percent always use it. Among the participants who do not use a funnel, 50.9 percent cite the additional cost, and 56.2 percent do not find it necessary (Table 2).

Approximately half of the participants do not use adhesive sheeting for skin protection before implant placement. The majority of the remaining participants (34.4%) use adhesive plastic material only to cover the nipple-areola complex, and the rest use it to cover both the nipple-areola complex and the incision (Table 2).

TABLE 2: New technologies

Characteristic	% of total respondents
Use of 3-dimensional imaging technology	
Yes	17.2
No	82.8
If yes, assess the role of 3-dimensional imaging in your practice	
It is an effective marketing tool	12.2
It is an effective educational tool	22
It is an effective sizing tool	31.7
It has made the consultation process overly complex	4.9
It has not proven worth the cost and effort	17.1
Other	12.2
Use of ADM in secondary cases	
Yes	13.2
No	86.8
If yes, for what purposes?	
Capsular contracture	7.7
Contour deformities	7.7
Capsulorrhaphy buttress	26.9
Ripples or thin tissues	30.8
Other	26.9
Use of insertion funnels	
Never	83.5
<50%	9.4
Half the time	1.6
>50%	3.1
Always	2.4
If not, why? (can select more than one)	
Extra cost	50.9
Adds extra step	21.9
Not applicable for form-stable implants	4.4
Concerned it may weaken shell	4.4
Not necessary	56.1
Use of adhesive plastic sheeting for skin protection before implant insertion [e.g., Tegaderm (3M, St. Paul, Minn.), Op-Site (Smith & Nephew, London, United Kingdom), Ioban (3M)]	
Yes, over the nipple-areola complex	34.4
Yes, over the incision	7
Yes, over both nipple-areola complex and the incision	11.7
No, I do not use it	46.9

ADM: Acellular dermal matrix

COMMON PRACTICES

Most of the participants use mathematical methods (44.2%), round silicone implants (36.4%), or silicone forms (20.9%) for preoperative sizing. Approximately 10 percent of the participants (10%) use imaging methods. Ninety-three percent of the participants (93%) use only silicone implants. The surface of the

implant is either always textured (37.5%) or mostly textured and sometimes smooth (32.8%). The most common volume ranges are 300-350 cc (40%) and 275-325 cc (31.2%). The most commonly used implant brand is Mentor (Santa Barbara, California, USA) (80.6%). The most frequently used incision is the inframammary (95.3%). The partial submuscular pocket is the most commonly preferred tissue plane (51.6%), followed by the subfascial pocket (30%) (Table 3).

Seventy-two percent of the participants use intravenous antibiotics during anesthesia induction, and 48.8% use postoperative antibiotics. Irrigation with triple antibiotics is performed by 31.8% of the participants. Thirty-nine percent of the participants use povidone-iodine irrigation with or without additional antibiotics. None of the participants reported not using antibiotic prophylaxis. Approximately half of the participants (49.2%) use postoperative massage. Physical activity restriction was recommended for 2-3 weeks (38.8%). In the non-surgical treatment of capsular contracture, about half of the participants (42.4%) prefer massage. Pharmacological agents such as leukotriene inhibitors, papaverine (Papaverin HCL, Galen İlaç Sanayi ve Ticaret A.Ş., Turkey), Cox-2 inhibitors are not preferred by the majority of the participants (85.3%) (Table 3).

TECHNICAL CONSIDERATIONS IN SECONDARY PROCEDURES

Apart from hematoma and infection, the most common reasons for reoperation are size changes (38.2%) and capsular contracture (26.8%), and implant malposition (21%). First-time capsular contracture is most commonly treated with total capsulectomy (45.7%), followed by new pocket creation (24%) and anterior capsulectomy (23.3%). In patients with subpectoral (dual-plane) implants, recurrent contracture is most commonly treated with total capsulectomy (30.5%), and new pocket creation (26.6%). The most common treatment method for double-bubble deformity or bottoming-out is recreating the inframammary fold (59.2%), followed by implant removal and switching to another type (12.8%) and isolated capsulorrhaphy (11.2%) (Table 4).

TABLE 3: Common practices

Characteristic	% of total respondents
Method for implant selection (can select more than one)	
Sizing using round silicone implants	36.4
Sizing with silicone forms	20.9
"Rice bags" or other as preoperative sizes	0
"High-five" or other tissue-based system	44.2
Imaging technology	9.3
None	13.2
Implant filler type used	
100% silicone	93
Mostly silicone/some saline	3.1
Equal use	1.6
Mostly saline/some silicone	2.3
100% saline	0
Implant shell surface type used	
100% smooth	7
Mostly smooth/some textured	15.6
Equal use	7
Mostly textured/some smooth	32.8
100% textured	37.5
Polyuretan	0
Usual implant size range	
<250 cc	4
250-300 cc	16.8
275-325 cc	31.2
300-350 cc	40
>350 cc	8
Implant manufacturer use (can select more than one)	
Allergan	5.4
Mentor	80.6
Nagor	15.5
Polytech	37.2
Motiva	25.6
Sientra	0.8
Other	17.8
Most common incision	
Axillary	1.6
Periareolar	3.1
Inframammary	95.3
Periumbilical	0
Most common pocket location	
Complete submuscular	11.7
Partial submuscular	51.6
Subglandular	6.3
Subfascial	30.5
Use of antibiotic prophylaxis (can select more than one)	
Intravenous antibiotics at induction of anesthesia	72.1
Povidone-iodine (only) irrigation	15.5
Povidone-iodine/bacitracin or neomycin irrigation	23.3
Classic triple-antibiotic irrigation	31.8
Other irrigation type	23.3
Postoperative oral antibiotics	48.8
Never use antibiotic prophylaxis	0
Use of postoperative massage	
Yes	49.2
No	50.8
Recommendation for return to unrestricted activities	
1 day	1.6
1 week	9.3
2-3 week	38.8
4 month	31.8
6 month	14
8-12 month	4.7
Use of pharmacologic agents for capsular contracture	
Yes, prophylactically in all	3.9
Yes, only at first sign of onset	9.3
Yes, as first option in established contracture	1.6
Never	85.3
Are they effective in reducing capsular contracture	
Yes	4.7
Only if started early	9.4
Not sure	65.6
No	20.3
Nonsurgical methods for treating capsular contracture (can select more than one)	
Leukotriene inhibitors	8
Papaverine	4
Cox-2 inhibitors	5.6
External ultrasound	2.4
Pulsed electromagnetic field therapy	2.4
Massage	42.4
Closed capsulotomy	7.2
None	46.4
Other	3.2

DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS AND CLINICAL PRACTICE

When the specialization durations of the participants were examined across six groups based on 5-year time intervals, it was observed that approximately 2nd-3rd (61.6%) had less than 15 years of experience. The most common practice type is solo practice (59.7%). Approximately half (48.8%) of the participants use breast implants solely for cosmetic purposes, while the majority of the remaining participants preferred to use them for both cosmetic and reconstructive purposes. The majority of the participant (58.5%) performs fewer than 50 breast augmentation surgeries per year (Table 5).

TABLE 4: Technical considerations in secondary procedures

Characteristic	% of total respondents
Most common reasons for reoperation beyond hematoma or infection	
Capsular contracture	26.8
Implant malposition	21.1
Implant failure	9.8
Seroma	4.1
Size change	38.2
Surgical technique most commonly used for capsular contracture	
Anterior capsulectomy	23.3
Total capsulectomy	45.7
Capsulectomy with ADM lining	4.7
Neopocket formation	24
Neopocket with ADM lining	2.3
Most common technique for treating recurrent capsular contracture in patients with subpectoral (dual-plane) implants	
Anterior capsulectomy	9.4
Total capsulectomy	30.5
Capsulectomy with ADM pocket lining	6.3
Neopocket formation	26.6
Neopocket formation with ADM pocket lining	6.3
No surgical treatment if bilateral capsular contracture and symmetric	2.3
No surgery and consider removing implants	18.8
Most common treatment for double-bubble or bottoming-out	
Percutaneous suture or external support for early onset	7.2
Capsulorrhaphy alone	11.2
Capsulorrhaphy with ADM buttress	2.4
Remove implants and replace later	7.2
Remove implant and transition to a different implant	12.8
Reconstruction of the inframammary fold	59.2

ADM: Acellular dermal matrix

TABLE 5: Demographics and practice patterns

Characteristic	% of total respondents
Years in practice	
0-5 years	20.8
6-10 years	20.8
11-15 years	20
16-20 years	13.1
21-25 years	14.6
>25 years	10.8
Type of practice	
Solo	59.7
Solo practice-shared facility	13.2
Small plastic surgery group (2-5 surgeons)	8.5
Large plastic surgery practice (≥6 surgeons)	9.3
Other (multispecialty group, academic, military)	9.3
Annual number of primary augmentations	
1-50	58.5
51-150	30.8
151-250	6.9
251-350	3.8
>350	0
Nature of practice	
100% reconstructive	0.8
25% cosmetic, 75% reconstructive	10.9
50% cosmetic, 50% reconstructive	10.1
75% cosmetic, 25% reconstructive	29.5
100% cosmetic	48.8

DISCUSSION

The advancements in breast augmentation surgery have created many options for both patients and plastic surgeons.^{13,14} One of the most critical steps in breast augmentation surgery is determining the shape of the implant.¹⁵ Although anatomical implants are widely used in current practice, many surgeons have concerns about anatomical implants.¹⁶ In this survey, the most common concerns among surgeons who do not use anatomical implants are the potential for malrotation and the lack of proven aesthetic superiority of anatomical implants compared to round implants. A literature review indicates that anatomical implants do not have a proven aesthetic advantage over round implants.^{5,13,15}

Approximately 10% of the participants are concerned about the complications that are specific to textured surfaces. The fact that only 1.6% of the participants have seen a case of BIA-ALCL is consistent

with the presence of only four cases diagnosed with BIA-ALCL in Türkiye until 2021.¹⁷

The use of autologous fat in primary breast augmentation is a controversial topic due to concerns about the safety and efficacy of the surgical technique.¹⁸ Therefore, it is expected that half of the surgeons do not use autologous fat (46.9%) and the majority of the rest do so less than half of the time (46.9%). The two main concerns are the limited augmentation potential compared to implants and the potential need for multiple fat grafting procedures. The use of autologous fat grafting as a supplemental technique is considered more feasible by the participants.

Approximately 5 percent of the population carries the heterozygous factor V Leiden mutation, which is the most common genetic risk factor for venous thromboembolism. Individuals with this mutation have a 3-8 times higher risk of developing deep vein thrombosis compared to the unaffected population.^{19,20} In breast augmentation surgery, some surgeons routinely use compression devices, but there is no standard chemoprophylaxis defined for patients at higher risk of venous thromboembolism. Another concern is the risk of hematoma, which may be higher in breast augmentation surgery performed under chemoprophylaxis. Hematoma is theoretically a risk factor for the development of capsular contracture.^{21,22} Approximately one-third of the participants (35.2%) do not perform augmentation on patients with heterozygous factor V Leiden mutation, while the majority of the remaining participants perform the procedure using compression devices and chemoprophylaxis measures.

A small portion of the participants use an insertion funnel. Surgeons who do not use a funnel consider it costly and unnecessary. The use of a funnel is thought to reduce skin contact and bacterial contamination of the implant, thereby reducing the development of capsular contracture.^{11,14,22-25} Additionally, publications report that funnel use allows for a shorter incision for implant placement, reduces the time required for placing the implant into the pocket, facilitates the placement of larger volume implants, and reduces gel fracture.^{11,14,26} The authors considered it

an interesting finding that funnel use, which has many suggested advantages, is so low.

It is observed that surgeons who use adhesive plastic sheeting for covering the nipple-areola complex do not prioritize covering the skin around the incision. Despite the skin around the incision posing a significant bacteriological risk, approximately 80% of the survey participants do not cover the incision area.

Most surgeons prefer inframammary incisions and partial submuscular implant pockets. The choice of incision may be influenced by the lower preference for periareolar incision due to the increased bacteriological risk and higher rates of capsular contracture than inframammary incision.^{5,11,21,23,27,28}

Only 7 percent of the participants use saline implants, and there are no surgeons who use only saline implants. The use of textured implants is predominant, with only 22% of the participants using smooth-surfaced implants either exclusively or mostly.

In 2002, Tebbetts first described the “TEPID System,” the first tissue-based method, and a few years later, Tebbetts and Adams reported the “High Five System” in 2006.^{29,30} Tissue-based systems are based on examining the patient’s existing breast tissue and anatomy. Among the participants, the most commonly used methods for preoperative sizing are mathematical measurements and tissue-based methods.

Some controversial topics in breast augmentation were examined in the survey, including the role of postoperative antibiotics, the use of pharmacological agents for capsular contracture, other non-surgical methods for managing capsular contracture, and postoperative massage. Infection is a relatively rare complication after breast augmentation surgery. Various prophylactic methods are used to prevent infection.^{5,14,31,32} Perioperative intravenous antibiotics and intraoperative antibiotic irrigation are applied by the majority of the participants. Approximately half of the participants (48.8%) recommend postoperative oral antibiotics.

There are many non-surgical approaches for treating capsular contracture. Eighty-five percent of the survey participants do not use pharmacological

agents in the treatment of capsular contracture. The majority of surgeons who use pharmacological agents do so only at the initial signs of capsular contracture. It is noteworthy that the most commonly used method in the non-surgical treatment of capsular contracture among participants is massage.

The most common reason for reoperation among participants is size change. Size change is a more easily preventable cause for reoperation. A detailed preoperative assessment, effective patient-surgeon communication, and multiple consultations with the patient can significantly reduce the need for reoperation due to size change.

In the surgical management of first-time capsular contracture, most participants consider capsulectomy sufficient. Capsulectomy is clinically divided into anterior and total. The majority of participants favor total capsulectomy. Anterior capsulectomy is prone to complications such as devascularization and damage to the skin flap, while total capsulectomy carries additional risks such as pneumothorax and visceral injury.³³

In the management of recurrent capsular contracture, total capsulectomy remains the mainstay of treatment, with new pocket creation, acellular dermal matrix use, and combinations of these methods also being employed. The most commonly preferred methods among participants are total capsulectomy and new pocket creation, followed by implant removal. In managing implant malposition, particularly double-bubble and bottoming-out, participants frequently perform inframammary fold reconstruction.

CONCLUSION

This study revealed that there is a common trend toward more frequent use of inframammary incisions, silicone as the filling material, textured surfaces, and implant volumes larger than 275 cc in Türkiye. However, there is no general agreement among participants on the use of autologous fat grafting in primary breast augmentation, the non-surgical and medical management of capsular contracture, the role of

three-dimensional imaging, and the management of capsular contracture. The authors believe that long-term complications may vary due to different preferences among countries.

The current attitudes of plastic surgeons in Türkiye toward breast augmentation have been evaluated with a participation rate of 18.3%, which is lower compared to the rates reported in the literature. Approximately 60% of the participants are surgeons with less than 15 years of experience. A homogeneous distribution based on clinical experience could not be achieved in our survey study. Since communication with surgeons was conducted through mailing groups, it is unclear to what extent the participating surgeons accurately represent the group with similar clinical experience. Ensuring homogeneous and higher participation in future studies would lead to more generalizable results.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Nurullah Gündüz, Alper Öztürk; **Design:** Nurullah Gündüz, Alper Öztürk; **Control/Supervision:** Ayhan Işık Erdal, Serhat Şibar; **Data Collection and/or Processing:** Nurullah Gündüz, Alper Öztürk; **Analysis and/or Interpretation:** Nurullah Gündüz, Ayhan Işık Erdal, Serhat Şibar; **Literature Review:** Nurullah Gündüz, Alper Öztürk; **Writing the Article:** Nurullah Gündüz, Alper Öztürk, Ayhan Işık Erdal, Serhat Şibar; **Critical Review:** Nurullah Gündüz, Alper Öztürk, Ayhan Işık Erdal, Serhat Şibar; **References and Fundings:** Nurullah Gündüz, Alper Öztürk, Ayhan Işık Erdal, Serhat Şibar; **Materials:** Nurullah Gündüz, Alper Öztürk, Ayhan Işık Erdal, Serhat Şibar.

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