

Medical Science

Maintaining the nipple areola complex sensation in patients undergoing superomedial reduction mammoplasty surgery in Taleghani Hospital, Kermanshah

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General Note

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ABSTRACT

Introduction: One of the most common operations in plastic surgery is mammoplasty. Intact nipple sensation is one of the important subjects in this surgery. This study tends to evaluate the preservation of nipple areola complex (NAC) in patients undergoing super medial reduction mammoplasty in Taleghani Hospital in Kermanshah. *Materials and Methods:* This prospective study measured nipple areola complex sensation in 27 patients, who referred to Taleghani Hospital for mammoplasty surgery, 3, 6

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and 12 months after the surgery using two point discrimination (2PD) test on nipple based on needle and pinch tests. Data was analyzed by SPSS software version 22. *Results:* There was a significant increase in 2PDbased on pinch and needle test during 3, 6 and 12 months after super medial reduction mammoplasty (P<0.05). There was a significant increase in 2PD based on pinch and needle test during 3, 6 and 12 months after super medial reduction mammoplasty (P<0.05). There was a significant increase in 2PD based on pinch and needle test during 3, 6 and 12 months after super medial reduction mammoplasty in terms of age, marital status, history of breastfeeding, BMI, and menstruation (P<0.05). *Conclusion:* Based on the results, sensation of patients was recovered within one year after the super medial reduction mammoplasty.

Keywords: reduction mammoplasty, super medial, nipple areola complex sensation

1. INTRODUCTION

Mammoplasty is a breast shaping surgery (Rouientan et al., 2015). Reduction mammoplasty is one of the most commonly used plastic surgeries; women undergoing this surgery have various complaints such as large breasts, back pain, shoulder pain and neck pain, etc. (Fatemi et al., 2009). According to a 2008 report in the USA, 500000 women have undergone mammoplasty (Daane et al., 1999). Reduction mammoplasty tends to reduce breast size, while maintaining breast beauty with the least complications (Delvecchyo et al., 2004). Reducing breast size with nipple and areola sensation is one of the standards for reduction mammoplasty (Lejour et al., 1999); loss of sensation is one of the known complications of this surgery (Hamdi et al., 2003). Since women undergoing reduction mammoplasty are mostly young and healthy, postoperative complications are relatively common, ranging from 14 to 53% (Schlenz et al., 2005). Various techniques have been proposed for reducing breast size surgically (Colen, 2001). One of the surgical techniques is super medial mammoplasty, which has several advantages over traditional surgeries; one of these advantages is preservation of nipple areola complex sensation (Brownlee et al., 2017). Most studies have shown that the highest level of breast sensation was in nipple areola area. However, some studies have reported the least sensation in this area (Fatemi et al., 2009). Breast sensation is provided by a complex neural network. Inter costal nerve provides the highest nipple areola sensation and extends from the mid-axillary line to the edge of the pectoral muscle into the breast and is divided into the lateral and anterior inter costal branches (Purohit, 2008). Given the importance of the subject, this study tends to examine preservation of NAC sensation in patients under goings upper medial reduction mammoplasty in Taleghani Hospital of Kermanshah during 2017-2018.

2. MATERIALS AND METHODS

The present study is a descriptive-analytical study conducted by Ethics Committee of Kermanshah University of Medical Sciences with tracking code 95230 and approval code IR.KUMS.REC.1397.022. The studied population included all patients referred to Taleghani Hospital for mammoplasty during 2017-2018. The terms of the project were fully explained for the patients. Patients willing to participate in the study were enrolled after obtaining informed consent. The patients with a history of breast surgery and neurological disease were excluded. A questionnaire based on main objectives of the project, including demographic information and results of the pinch and needle discrimination test to examine nipple sensation, were completed for each patient. For this purpose, each breast was divided into five zones including the upper medial and lateral quadrants, the lower medial and lateral quadrants and nipple areola zone. 2PD was examined by pinch and needle test preoperatively, and 3, 6, 12 months after surgery. Four quadrants of breast were called ZONE A, ZONE B, ZONE C and ZONE D and nipple areola was called ZONE N. Finally, the completed data was inserted into the SPSS-20 software and analyzed statistically.

3. RESULTS

This study examined 27 patients undergoing mammoplasty. The patients aged 24-50 years (39.48 \pm 7.15); 70% of the patients were married and 66.7% had a history of breastfeeding; 59.3% had BMI>27 and had 74.1% had regular menstruation. The results are shown in Table 1.

Demographic variables	N (%)
Age	
<=30	4 (14.8)
30-35	4 (14.8)
35-40	6 (22.2)

Table 1	Frequency and	percentage o	of demographic	variables
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40-45	8 (29.6)
45-50	5 (18.5)
Marital status	
Single	(29.6)
Married	19 (70.4)
History of breastfeeding	
Yes	18 (66.7)
No	9 (33.3)
BMI	
19-27	11 (40.7)
>27	16 (59.3)
Menstruation	
Regular	20 (74.1)
Irregular	7 (25.9)

There was a significant difference in 2PD based on pinch test (P<0.05) and needle test (P<0.05) after mammoplasty surgery; both tests showed that sensation of patients improved during one year after surgery. The results are presented in Table 2 for cases of frequency values and comparison of two-point difference level based on Pinch and Nidel test after surgery and Figure 1 and 2.

Table 2 Frequency and	l comparison of 2PD based	l on pinch and ne	edle test after the surgery
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	Measurement section est 3 months	2PD based on pinch test			Test statistic	Divoluo
		Weak	Moderate	Good	Test statistic	P-value
Pinch test		15 (55.6%)	8 (29.6%)	4 (14.8%)	29.77	<0.001
	6 months	5 (18.5%)	11 (40.7%)	11 (40.7%)		
	12 months	4 (14.8%)	8 (29.6%)	15 (55.6%)		
	3 months	4 (14.8%)	17 (63%)	6 (22.2%)	21.29	<0.001
Needle test	6 months	3 (11.1%)	8 (29.6%)	16 (59.3%)		
	12 months	2 (7.4%)	6 (22.2%)	19 (70.4%)		

There is a significant difference in 2PD in patients aged \leq 40 years and in patients aged >40 years based on needle and pinch test. One year after surgery, the sensory level is improving (P<0.05). Needle and pinch tests showed a significant difference in 2PD in terms of marital status (P<0.05), BMI (P<0.05), lactation status (P<0.05), and menstruation (P<0.05); improvement was reported in sensory level in terms of all variables one year after surgery.



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Figure 1 Pinch Test



Figure 2 Needle Test

4. DISCUSSION

Breast plays an important role in lactation and sexual activity as well as erectile function. Preservation of breast sensation after reduction mammoplasty is one of the mental concerns of the patient and the surgeon (Greuse et al., 2001). The present study tended to assess preservation of NAC sensation in patients undergoing mammoplasty. This study was performed on 27 patients. In this study, 2PD significantly increased based on needle and pinch test within one year after the mammoplasty. Therefore, the sensory level of patients improved within one year after surgery. There was also improvement in terms of age, marital status, lactation history, BMI, and menstruation. Therefore, these variables did not have a negative effect on this improvement. In this study, BMI and age did not have a negative effect on improvement of patients after surgery. Consistent with the current study, Dawesian et al. (2007) showed that breast sensation was reduced in the first trimester after surgery and reached normal levels after 6 months to one year. The longer the study is, the greater the normalization of breast sensation.

Abdel-Hamed et al. (2008) showed that superomedial surgeries had better protection of NAC sensation. They also found that superomedial method was useful for all breasts, which was consistent with the current study. Anthony et al. (2013) reported that NAC sensation was preserved 3 years after the surgery in 89% of patients undergoing super medial reduction mammoplasty and 86.5% of patients undergoing lower reduction mammoplasty. In a consistent study with the current study, 98% of patients undergoing super medial reduction mammoplasty had normal NAC sensation after surgery (Lugo et al., 2013). Contradictory results have been reported regarding the sensory level of patients after mammoplasty. However, collective results have not yet been found. According to Zhang (2016), the patients with a BMI greater than 30 kg/m2 experienced the reduced sensation postoperatively, which is not consistent with the current study. Perhaps this can be attributed to individual characteristics and geographical circumstances.

Strength of this study was that the study was semi-experimental. The limitations of this study are: First, given the limited number of similar studies, this study cannot be easily compared with other studies; therefore, further studies are required. Second, this study did not have control group; therefore, it is recommended to consider this in future studies. Third, the sample size was small; therefore, it is recommended to perform studies with higher sample size. Finally based on 2PD in pinch and needle tests, super medial reduction mammoplasty will improve patients within one year after the surgery. Moreover, age, marital status, history of lactation, BMI, and menstruation cannot affect the improvement process.

5. CONCLUSION

Based on the above findings, based on the two-point difference between both pinch and nidel test, it can be said that using Supra maximal Reductive Mammoplasty can improve the patients one year after surgery. Also, variables such as age, marital status, breastfeeding history, BMI, and meningitis may not influence this process of recovery.



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