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Aesthetic Evaluation Post Fibroadenoma Excision with Periareolar Incision

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ABSTRACT

Background: Fibroadenomas, benign breast tumors, often necessitate surgical excision for diagnostic confirmation and symptom relief. The periareolar incision technique has gained popularity due to its ability to provide access for tumor excision while minimizing visible scarring and preserving breast aesthetics. **Objective:** This study was done to evaluate the cosmetic results following fibroadenoma removal via periareolar incision. **Study Design:** Prospective, observational study. **Settings:** Department of Surgery - Liaquat University Hospital, Hyderabad Pakistan. **Duration:** Three years from 2017 to 2020. **Methods:** The study included women aged 18 years or older with a confirmed diagnosis of fibroadenoma through imaging and biopsy, who were scheduled for fibroadenoma excision using a periareolar incision technique. All patients underwent excision of the fibroadenoma using the periareolar incision method. Dissection was carefully performed to access the fibroadenoma while minimizing disruption to surrounding tissues. The fibroadenoma was excised with precision to minimize trauma to adjacent structures. Aesthetic assessment was conducted using a scoring system ranging from 1 to 4, with patients providing subjective ratings of their cosmetic outcomes. Data collection was done through a specially designed proforma. **Results:** The mean age of the patients was 29.76 years, with a standard deviation of 5.51 years. The majority of patients, comprising 45.10%, reported perceiving a good aesthetic outcome during their final follow-up, indicating almost complete satisfaction. Additionally, 43.70% of patients perceived the outcome as fair, expressing partial satisfaction. Conversely, 11.30% of patients perceived the outcome as poor, reflecting dissatisfaction. The p-values for both age group and residence are above 0.05, indicating that there is no statistically significant relationship between these factors and aesthetic condition. **Conclusion:** The use of periareolar incision for excising fibroadenomas shows promising potential for favorable outcomes. The aesthetic acceptance of the surgical results was generally perceived as good. Rare instances of unfavorable outcomes were associated with factors such as incision extension.

Keywords: *Fibroadenoma, Periareolar incision, Cosmetic, Outcomes.*

INTRODUCTION

Fibroadenomas are the most prevalent non-cancerous breast abnormality among teenagers and young females, detected in 67–94% of biopsies conducted on women under the age of 20.[1,2] These fibroepithelial growths typically originate from the glandular and supportive tissues of the breast, mainly impacting women during their reproductive years.[4] Although they are usually non-cancerous and carry a low risk of becoming malignant, fibroadenomas can cause considerable worry and stress for patients because they can be felt as lumps. Therefore, it's crucial for both clinicians and patients to have a thorough understanding of fibroadenomas and how to manage them.[4] Treatment typically involves either monitoring or removing the lump surgically. However, there is limited information

regarding the long-term effects of surgical removal of fibroadenomas in adolescents.[4,5]

Fibroadenomas displaying hyperplasia and cellular abnormalities suggest an increased risk of developing breast cancer.[6] Given that fibroadenomas primarily affect young women and surgical removal is the preferred treatment, surgeons often encounter a dilemma regarding the appropriate surgical approach. They must strike a balance between ensuring successful removal while preserving functionality and achieving an aesthetically pleasing outcome.[6] Considering aesthetics is crucial when selecting breast incision sites, particularly in young females. Removing a large fibroadenoma presents a considerable challenge and is typically done via a sub-mammary incision, which could result in unsatisfactory scarring.[7]

In the majority of cases involving young females with fibroadenomas requiring surgical treatment, surgeons must navigate the delicate balance between ensuring successful removal while maintaining functionality and achieving a satisfactory aesthetic result.[8] However, there is a lack of comprehensive literature regarding the management of fibroadenomas. Furthermore, there are few reports addressing decisions regarding the choice of incision, the number of incisions, and the dissection method.[8] Various incision methods, such as periareolar, periareolar overlying, and circumareolar, are documented in the literature.[6]

The excision of fibroadenomas using a periareolar incision (FETPI) has gained significant popularity due to its emphasis on maintaining cosmetic appearance by positioning the scar within the darker pigmented region of the areola. However, the feasibility of FETPI may be compromised in cases where the fibroadenoma is located at a considerable distance from the areolar border or if the areola itself is small and the fibroadenoma is not positioned beneath it.[9] To address this gap in knowledge and better understand the effectiveness of FETPI in achieving desirable aesthetic outcomes, this study aims to systematically evaluate the cosmetic results following fibroadenoma removal via periareolar incision. By assessing patient satisfaction, scar visibility, and overall aesthetic appearance post-surgery, this research endeavors to provide valuable insights into the practical application and limitations of FETPI in the management of fibroadenomas. Such findings have the potential to inform clinical decision-making, optimize surgical techniques, and ultimately enhance patient care and satisfaction in the context of fibroadenoma excision.

METHODS

This prospective, observational study was carried out at the Department of Surgery - Liaquat University Hospital, Hyderabad. Study was done during a period of three years from 2017 to 2020. Non-probability, purposive sampling was used. Women aged 18 years or older, diagnosis of fibroadenoma confirmed via imaging and biopsy and those who were scheduled for fibroadenoma excision using a periareolar incision were included. Patients who have undergone previous breast surgery, history of keloid or hypertrophic scarring, patients with significant medical comorbidities or conditions that could interfere with wound healing or recovery, pregnant or breastfeeding women and patients with psychological or cognitive impairments were excluded. This study was carried out following approval from the Institutional Review Board for ethical considerations. Prior to participation, all individuals provided informed consent after being briefed on the surgical outcomes.

All patients underwent the periareolar Incision Technique to excise the fibroadenoma. The patients were positioned appropriately for surgery, the surgical site was sterilized and prepped, and anesthesia was administered to ensure patient comfort. Subsequently, the periareolar incision was carefully planned and executed, considering the fibroadenoma's location and aesthetic considerations. Dissection was performed to access the fibroadenoma while minimizing disruption to surrounding tissues. The fibroadenoma was excised with precision to minimize trauma to adjacent structures. Hemostasis was achieved, and the wound was meticulously closed to optimize cosmetic outcomes. The aesthetic assessment was conducted using a scoring system ranging from 1 to 4, evaluating three scar parameters: scar width, area of pigment loss in the scar, and height of scar swelling.[9,10] Patients provided subjective ratings of their cosmetic outcomes themselves. They were asked to assess the scar on a scale of 1 to 4, with 1 indicating excellent, 2 indicating good, 3 indicating fair, and 4 indicating poor, at the 6-month follow-up after treatment.[9,10] All data were collected using a specifically designed proforma.

RESULTS

The patients' ages had a mean of 29.76 years with a standard deviation of 5.51 years. The mean size of excised lesions was 5.7 cm with a standard deviation of 2.4 cm. Regarding residential status, 49.3% were rural residents while 50.7% were urban residents. In terms of educational status, 54.9% were educated and 45.1% were uneducated. Socioeconomic status showed that 59.2% were classified as poor, 28.2% as middle class, and 12.7% as upper class. Indications for surgery were large palpable mass (31.0%), discomfort/pain (38.0%), aesthetic reasons (19.7%), and others (11.3%). Table 1

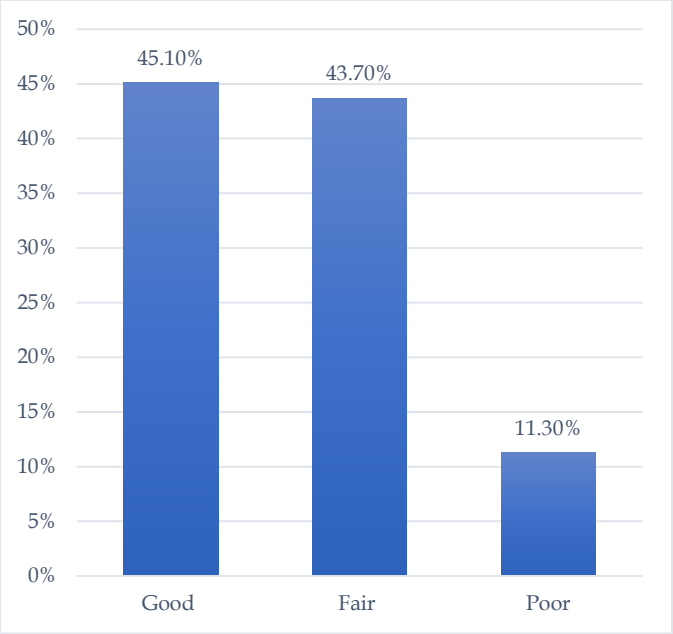
The majority of patients, accounting for 45.10%, reported a perceived good aesthetic outcome during their final follow-up, indicating almost full satisfaction.

Additionally, 43.70% of patients perceived the outcome as fair, expressing partial satisfaction. Conversely, 11.30% of patients perceived the outcome as poor, reflecting dissatisfaction. Figure 1

Table 1: Demographic characteristics of the patients (n=71)

Variables		Statistics	
Age (years)	Mean ± SD	29.76 ± 5.51	
Excised lesions size	Mean ± SD	5.7 ± 2.4 cm	
Residential status of the patients	Rural residents	35	49.3%
	Urban residents	36	50.7%
Educational status	Educated	39	54.9%
	Uneducated	32	45.1%
Socioeconomic status	Poor	42	59.2%
	Middle	20	28.2%
	Upper	9	12.7%
Indications for surgery	Large palpable mass	22	31.0%
	Discomfort / pain	27	38.0%
	Aesthetic	14	19.7%
	Others	08	11.3%

Fig:1. Perceived Aesthetic Condition / Outcome (n=71)



The p-values for both age group and residence are above 0.05, indicating that there is no statistically significant relationship between these factors and aesthetic condition as shown in table 2.

Table 2: Aesthetic condition according to age and residential status (n=71)

Variables		Aesthetics			Total	p-value
		Good	Fair	Poor		
Age group	18-25 years	10	4	3	17	0.399
		14.1%	5.6%	4.2%	23.9%	
	26-30 years	12	13	4	29	
		16.9%	18.3%	5.6%	40.8%	
	31-35 years	3	4	1	8	
		4.2%	5.6%	1.4%	11.3%	
	36-40 years	7	10	0	17	
		9.9%	14.1%	0.0%	23.9%	
Residence	Rural	17	13	5	17	0.492
		23.9%	18.3%	7.0%	23.9%	
	Urban	15	18	3	15	
		21.1%	25.4%	4.2%	21.1%	

DISCUSSION

Fibroadenomas represent one of the most common benign breast lesions affecting women, often requiring surgical excision for diagnostic confirmation and symptom alleviation. The choice of surgical technique significantly influences postoperative aesthetic outcomes, particularly in young women concerned about breast appearance. This study aims to evaluate the aesthetic results following fibroadenoma excision utilizing the periareolar approach. The mean age of the patients in this study was 29.76 years, with a standard deviation of 5.51 years. A comparison with previous research reveals variations in patient demographics. For instance, Kong *et al*,[11] reported a mean age of 38.0±9.4 years among their patients, indicating a higher average age compared to this study. Similarly, Srivastava *et al*,[12] found a mean age of 24.46±6.17 years and Saleem S *et al*[13] found mean age of their study population was 26.52 ± 6.90 years in their studies, indicating a younger patient population compared to ours. These differences in patient age across studies may reflect variations in sample selection criteria, geographic location, or healthcare practices. Younger patients may be more inclined towards seeking surgical intervention for fibroadenomas due to concerns about breast aesthetics or symptom management.

In this study, the demographic characteristics of the participants reveal insights into their residential status, educational background, and socioeconomic status. Approximately 49.3% of the participants were rural residents, while 50.7% resided in urban areas. Regarding

educational status, 54.9% of the participants were educated, while 45.1% were uneducated. The socioeconomic status distribution showed that 59.2% were classified as poor, 28.2% as middle class, and 12.7% as upper class. Comparisons with similar studies, such as Saleem *et al*.[13] highlight some consistencies in demographic patterns. Saleem *et al*.[13] also found a majority of participants with poor socioeconomic status, with 97.2% falling into this category due to a monthly income of less than 50,000. Additionally, a similar distribution between rural and urban residents was observed, with 50.3% residing in rural areas and 49.7% in urban areas. These demographic characteristics provide context for understanding the socio-cultural factors that may influence healthcare-seeking behavior, treatment adherence, and postoperative outcomes among fibroadenoma patients. In this study indications for surgery were large palpable mass (31.0%), discomfort/pain (38.0%), aesthetic reasons (19.7%), and others (11.3%). Comparatively Zhang W *et al*[14] reported that the before receiving treatment, all patients supplied details regarding symptoms such as palpable masses, pain, and nipple discharge.

In this study, a significant proportion of patients, comprising 45.10%, reported a perceived good aesthetic outcome during their final follow-up, indicating almost full satisfaction. Additionally, 43.70% of patients perceived the outcome as fair, expressing partial satisfaction, while 11.30% perceived it as poor, reflecting dissatisfaction. Moreover, the p-values for both age group and residence were above 0.05, indicating that there is no statistically significant relationship between these factors and aesthetic condition. Comparing these findings with previous studies, Liu *et al*,[10] reported that 81.6% of patients in the periareolar incision group judged their cosmetic results to be excellent or good during the 6-month follow-up period. Similarly, Nisar *et al*,[15] found that patients who underwent the periareolar technique had better cosmetic outcomes, with 94.6% reporting satisfaction at the six-month follow-up. Farooqi *et al*,[16] also observed enhanced cosmetic outcomes in participants who underwent the periareolar procedure, with 95% experiencing improvements at the 6-month follow-up. Chandan *et al*[17] reported that the average overall cosmetic score at the 6-month follow-up after surgery was notably higher in the periareolar procedure group compared to the control group ($p < 0.001$). Similarly, Malik *et al*[18] found that the majority of patients (65.52%) perceived the aesthetic outcome as good during the final follow-up. These findings collectively underscore the favorable aesthetic outcomes associated with the periareolar procedure for fibroadenoma excision. The high rates of patient satisfaction and improved cosmetic results reported across multiple studies support the efficacy and desirability of this surgical approach. Current study possesses several limitations of include a small sample size and the exclusion of other incisional approaches and it was not compared against different incision methods. However, continued research and evaluation are necessary to further elucidate factors influencing aesthetic outcomes and optimize patient care in fibroadenoma excision procedures

CONCLUSION

In conclusion, the use of periareolar incision for excising fibroadenomas shows promising potential for favorable outcomes. Adverse effects were minimal, and the aesthetic acceptance of the surgical results were generally perceived as good. Rare instances of unfavorable outcomes were associated with factors such as incision extension. Therefore, mastering the excision technique with periareolar incision and minimizing the need for extension could lead to consistently favorable surgical outcomes, satisfying both surgeon and patient alike

LIMITATIONS

Limited sample size not compared with other techniques.

SUGGESTIONS / RECOMMENDATIONS

Further large-scale case-control studies are recommended, specifically at the local level, to observe more accurate aesthetic outcomes and patient satisfaction.

CONFLICT OF INTEREST / DISCLOSURE

None.

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