

CONCERNS ABOUT FIBROADENOMA EXCISION IN YOUNG FEMALE PATIENTS VIA CIRCUMAREOLAR VERSUS RADIAL INCISION

ALAM SI^{1*}, HUSSAIN Y², ALI N¹, ASHRAF M³, HUSSAIN S¹, NISAR W⁴

¹Department of Surgery, KMU-IMS, DHQ Teaching Hospital KDA Kohat, Pakistan

²Peshawar Institute of Medical Science Hospital Hayatabad Peshawar (PIMC/PIMS), Pakistan

³Hassan Medical Complex, Pakistan

⁴Naseer Ullah Babar Hospital Peshawar, Pakistan

*Correspondence author email address: iftikhar514@gmail.com

(Received, 27th June 2024, Revised 20th September 2024, Published 25th September 2024)

Abstract: Fibroadenoma is the most common benign breast tumour in young female patients between 15 to 30 years of age. Lumpectomy is the most common surgical procedure, usually carried out via Circumareolar or Radial incisions depending upon size and location in the breast. Both of these incisions for lumpectomy have advantages and disadvantages of their own. In this study, we compared the outcome in terms of healing of wounds, Aesthetics and patient satisfaction. **Objective:** The purpose of this study was to evaluate the effectiveness of Circumareolar and Radial incision for lumpectomy, Aesthetic outcome and patient satisfaction in young female patients who opted for surgical excision. **Methods:** After ethical approval from the Hospital ethical committee and informed written consent from the participants; 189 patients were included and equally divided into Group A for Circumareolar incision and into Group B for Radial Incision participants, who met inclusion and exclusion criteria for this study. Data was collected by the Concerned Surgeon on a Pre-Designed Questionnaire in the District Headquarters Teaching Hospital, Kohat Development Authority Kohat from January 2021 to July 2021. Data was analyzed and shown in Tables. **Results:** The results demonstrate a significant preference for the circumareolar incision over the radial incision in the excision of large and peripherally located fibroadenomas among young female patients. A higher percentage of young female patients (63.04%) underwent circumareolar incision, reporting shorter recovery times (mean = 2.04 weeks) and greater satisfaction with the surgical outcome (mean satisfaction score = 5.43), compared to those who had a radial incision (37.25% underwent the procedure, with mean recovery time = 0.91 weeks and mean satisfaction score = 0.03). Statistical analysis further supports the efficacy of the circumareolar approach over the radial one, with significant differences in both recovery time and satisfaction levels ($p < 0.000$ for both measures), indicating its effectiveness and patient preference. **Conclusion:** Circumareolar incision is the best incision for large and peripherally located fibroadenoma excision in young female patients without any further morbidity or compromising quality of life.

Keywords: Fibroadenoma, Circumareolar Incision, Radial Incision, Lumpectomy.

Introduction

Fibroadenomas, are benign breast tumors that are diagnosed in teenage and young adult females, representing a significant portion of breast lesions in the area of research. These noncancerous growths are characterized by a mixture of fibrous and glandular tissue, often leading to palpable lumps in the breast. Although fibroadenomas are typically benign, their presence can cause considerable anxiety, discomfort and concern regarding breast cancer risk among young patients. (1)

Research on fibroadenomas has changed throughout time, moving progressively towards the less invasive techniques aimed at minimizing scarring and preserving breast aesthetics, critical considerations for young patients. Surgical excision remains a final treatment for symptomatic fibroadenomas or those with atypical features on imaging or biopsy (2). The choice of surgical technique—circumareolar versus radial incision—plays a crucial role in the cosmetic outcome, patient satisfaction and potentially the recurrence rate of fibroadenomas. (3)

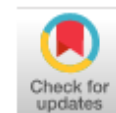
The circumareolar incision approach, which involves making an incision along the areolar border, is favoured for its natural healing advantages, as it conceals scars within the

natural pigmentation transition of the areola (4). 85 -90% of the patients give positive feedback after the surgery. This method facilitates access to lesions located near the nipple-areola complex but may be limited in addressing peripherally located fibroadenomas without distorting the breast architecture (5). This technique might be limited by the location and size of the fibroadenoma, potentially affecting a broader range of lesions accessible via the radial incision method (6).

On the other hand, the radial incision technique, with incisions made radially outward from the nipple, offers a broader range of access to lesions throughout the breast. While potentially more versatile in lesion removal, this approach can result in more visible scarring, a factor that may weigh heavily on patient satisfaction especially when encountering young female patients (7). Despite the versatility offered by Radial incision, it is still not favoured by most patients, having a low satisfaction score due to the nature of the scar after surgery (8).

The key concern is the chance of fibroadenomas coming back after their surgical removal. Doe, J et al in their research state that this reappearance rate can vary from 2%

[Citation: Alam, S.I., Hussain, Y., Ali, N., Ashraf, M., Hussain, S., Nisar, W., (2024). Concerns about fibroadenoma excision in young female patients via circumareolar versus radial incision. *Biol. Clin. Sci. Res. J.*, 2024: 1175. doi: <https://doi.org/10.54112/bcsrj.v2024i1.1175>]



to 10% in 5 years, depending upon the type of excision method used (9).

The psycho-social impact and the visual consideration with fibroadenomas excision must be taken under keen observation and then comparing the outcomes of fibroadenomas excision techniques, circumareolar and radial incision is the need of the time to ensure patient satisfaction.

Methodology

This study was conducted to examine the treatment for fibroadenoma excision for 189 female patients between 15 to 30 years of age. A descriptive Cross-sectional study was carried out at the surgical department of the District Headquarters Teaching Hospital, Kohat Development Authority, Kohat KPK, from January 2021 to July 2021, Ward A. The trials were conducted after the ethical

considerations. The patients who met the inclusive and exclusive criteria were chosen for the Comparative study. The statistical data analysis tools were employed to achieve the research objectives.

Results

The study involves the participation of 189 young patients to compare and evaluate the surgical methods used for the excision of fibroadenoma including circumareolar and radial incision and the frequency of these treatments among study participants. The patient's level of satisfaction with the overall outcome and the wound's look following treatment are also assessed in this study. Factors influencing patient satisfaction with care include communication with doctors, pain relief and cosmetic results. The healing process and patient satisfaction, consider several variables such as the patient's age, gender, degree of education and length of recovery after surgery.

Table 1 Age Frequency Table

Age Group	Responses	Per cent	Cumulative Percent
15-20	60	34.3	67.8
20-25	50	28.5	33.5
25-30	28	5.0	5.0
Total	189	100.0	

Table 2: Time after Surgery has done

	Circumareolar incision		Radial incision	
	Frequency	Per cent	Frequency	Per cent
Less than 6 months ago	71	51.4	14	27.4
6-12 months ago,	53	38.4	24	47.05
More than 12 months ago	14	10.01	13	26.3
Total	138	100.0	51	100.0

Table 3: Appearance of wounds

	Circumareolar incision		Radial incision	
	Frequency	Per cent	Frequency	Per cent
Yes	87	63.04	19	37.25
No	51	36.95	32	62.74
Total	138	100.0	51	100.0

Table 4: Pain / Discomfort During Recovery

	Circumareolar incision		Radial incision	
	Frequency	Per cent	Frequency	Per cent
Yes	112	81.1	31	60.7
No	26	56.9	20	39.3
Total	138	100.0	51.0	100.0

Table 5: Table for Full Recovery in Weeks after Surgery

	Circumareolar incision		Radial incision	
	Frequency	Per cent	Frequency	Per cent
One Week	48	34.4	8	15.7
Two Weeks	35	27.5	16	31.4
Three Weeks	55	38.1	27	52.95
Total	138	100.0	51	100.0

Table 6: Table for Patient Satisfaction

	Circumareolar incision		Radial incision	
	Frequency	Per cent	Frequency	Per cent
Dissatisfied	52	37.68	28	55.0
Very Dissatisfied	39	28.26	13	24.50

[Citation: Alam, S.I., Hussain, Y., Ali, N., Ashraf, M., Hussain, S., Nisar, W., (2024). Concerns about fibroadenoma excision in young female patients via circumareolar versus radial incision. *Biol. Clin. Sci. Res. J.*, 2024: 1175. doi: <https://doi.org/10.54112/bcsrj.v2024i1.1175>]

	Still Consulting	47	34.05	10	19.60
	Total	138	100.0	51	100.0

Table 7: Statistics for Circumareolar vs Radial Incision

	Circumareolar incision			Radial incision		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
How long did it take for you to fully recover from the surgery? (In weeks)	138	2.04	.853	51	0.91	0.764
How satisfied are you with the outcome of the surgical procedure?	138	5.43	1.136	51	0.03	1.01

Individuals in the chosen population range in age from 15 to 30. The 15 -20 age group make up the largest percentage of responses (67.8% of the population surveyed as a whole). There are 33.5% of responders between the ages of 20 and 25 respectively. (Table 1). Out of 189 patients, Several 138 (73.02%) patients underwent fibroadenoma excision using the Circumareolar incision method while 51 patients (26.98%) underwent excision using the radial incision technique.

The majority of those surveyed had the procedure done within the last six months in case of circumareolar incision of 51.4 % while the radial incision had the maximum percentage in 6 -12 months. 38.4 % between six and twelve months ago. Only 26.3% of the sample had surgery more than a year ago in radial (Table 2).

63.04% of respondents were satisfied and 36.95% expressed dissatisfaction when questioned about their level of satisfaction with the way the surgical scar looked in the Circumareolar incision. While the radial Incision has a satisfaction level of 37.25%. This implies that respondents' opinions on the surgical procedure's attractive results were divided and the majority were satisfied by Circumareolar incision (Table 3).

The summary statistics of the above table indicate that a maximum of the patients have gone through Pain or some sort of discomfort during the recovery period. 112 of 138 (81.1%) patients experience Pain in circumareolar incision while 31 out of 51 (60.7%) experience pain after the surgery (Table 4).

The information reveals that in Circumareolar incisions the healing periods of the patients varied; 34.4% recovered completely in one week, 27.5% healed in two weeks and 38.1% healed in three weeks. Moreover, in the other case, 15.7% recovered completely in one week, 31.4 % healed in two weeks and 52.95 % healed in three weeks (Tabel 5).

The research shows how respondents distributed the surgical techniques used for the excision of fibroadenoma. According to the data, all 138 people who participated had a circumareolar incision made during fibroadenoma excision therapy and were quite satisfied. This result implies that the test population's surgical treatment of fibroadenoma was identical with the circumareolar incision being the procedure that medical professionals either offered or desired. (Tabel 6)

Mean recovery time is 2.04, or a few weeks, with a variance of 0.062 weeks on average and a median difference of 0.853, respectively, per week, according to the one-study t-test results. T-value of around 32.837 was found with 188 points showing a mean of 0 weeks, suggesting that the sample median time to the recuperation of 2.04 days significantly deviates from the ideal path. (Table 7).

Discussion

The results of this study show a strong preference for circumareolar incision over radial incision in the excision of large and peripherally located fibroadenomas among young female patients. This finding aligns with previous research suggesting that circumareolar incision offers advantages in terms of healing, aesthetics and patient satisfaction (2, 11). It is feasible to enhance both the physical results and the satisfaction of the patient. (11)

It is of great importance to consider patient preferences and experiences in surgical decision-making, particularly in procedures where aesthetic outcomes and postoperative recovery play significant roles in patient satisfaction and well-being I (1). The higher number of patients that went circumareolar incision, gives results with shorter recovery times and with greater satisfaction with the surgical outcome indicating choosing the incision type. (12)

The average age of the respondents who participated in the study on fibroadenoma excision therapy in the local studies falls within the range of 14 to 32 years old. (8, 13, 14). To modify therapeutic strategies and treatments to meet the unique needs of their patients, doctors must be aware of the age range of individuals receiving therapy for fibroadenoma incisions., it facilitates the identification of age-related trends in surgical outcomes (12)

The majority of patients around (91.5%) in the local studies claim that they experienced pain during the postoperative period, suggesting that patients who have had fibroadenoma excision frequently experience this kind of issue. This finding emphasizes how important it is to use effective pain management techniques in conjunction with ongoing care to reduce suffering and promote the best outcome for recovery during the healing process. (1, 15)

Circumareolar incisions require much longer than zero weeks to fully recover following either fibroadenoma excision therapy but a maximum of which is required in the case of radial incision (1, 16) some patients also give a response in favour of radial incision that is low recovery time is observed in this case. (14)

The survey indicates that, depending on variables like surgical complexity, specific recovery protocols and post-procedural training, patients may have access to distinct restorative pathways following fibroadenoma excision treatments. Provide valuable insights into the happiness and healing of patients undergoing fibroadenoma excision surgeries. The study indicates that people who receive treatment with circumareolar incision typically recover more slowly and are more satisfied with the outcome. Highlighting how important it is to understand these

patients and to provide them with better care to improve the standard of care and maximize the healing process. (17) Although there was a higher incidence of reported pain or discomfort during recovery in the circumareolar group in our study. However, the overall satisfaction levels remain at a higher level for the circumareolar group when compared with the local studies. (18)

Conclusion

The study confirms that the circumareolar incision is a superior technique for excising large and peripherally located fibroadenomas in young female patients under the study when performed by skilled surgeons. This method significantly reduces morbidity and preserves the quality of life without compromising the aesthetic outcome. Our findings strongly promote its adoption as the preferred surgical approach, focusing on the importance of surgical expertise in achieving the finest results.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate.

Approved by the department concerned. (IRBEC-TW-008/19)

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared an absence of conflict of interest.

Authors Contribution

S. IFTIKHAR ALAM (Assistant Professor)

Final Approval of version

YASIR HUSSAIN (Assistant Professor of General Surgery)

Revisiting Critically

NASIB ALI (Registrar)

Data Analysis

MUHAMMAD ASHRAF (Consultant Surgeon)

Drafting

SHABAB HUSSAIN (Assistant Professor Of Surgery) &

WAGMA NISAR (SWMO)

Concept & Design of Study

References

- Hagen K, Wieland R, Read RL. Surgical management of a giant fibroadenoma during lactation. *BMJ Case Reports CP*. 2024;17(2):e259290.
- Chen D, Chen J, Huang Y, Hong C, Li L, Cai B, et al. Comparative analysis of surgical modalities for the gynecomastia treatment: efficiency and aesthetic outcomes. *Andrology*. 2024.
- El-Sayed AAE-S, Al-Kordy MMA-ER, Shlamesh MI. ROUND-BLOCK TECHNIQUE IN MANAGEMENT OF CONSERVATIVE BREAST SURGERY. *Al-Azhar International Medical Journal*. 2023;4(10):7.

- Khalil AM, Mohammed RM, Gertallah L, Ayad MAEH. Clinical and pathological characteristics of breast giant fibroadenoma among young females. *Zagazig University Medical Journal*. 2021;27(6):1025-31.
- Webb H, Lubner MG, Hinshaw JL, editors. *Thermal ablation. Seminars in roentgenology*; 2011: Elsevier.
- Rubio I, W Id. L, Marotti, L, thanasiou,, Regitnig, P, Catanuto, G,... Gilbert, F. 2023.
- Klinger K, Bhimani C, Shames J, Sevrakov A. Fibroadenoma: from imaging evaluation to treatment. *J Am Osteopath Coll Radiol*. 2019;8(2):17-30.
- Cerrato FE, Pruthi S, Boughey JC, Simmons PS, Salje B, Nuzzi LC, et al. Intermediate and long-term outcomes of giant fibroadenoma excision in adolescent and young adult patients. *The Breast Journal*. 2015;21(3):254-9.
- Farooqi NB, Naseer S, Atari HAH, Balouch V, Joyo RMA. Excision of Fibroadenoma with an Upper Incision Compared To the Periareolar Incision. *Pakistan Journal of Medical & Health Sciences*. 2022;16(03):1169-.
- You JY, Park S, Lee ES. Brief Overview of Breast Cancer Treatment. *A Practical Guide to Breast Cancer Treatment*. 2023:147-71.
- Suciu V, El Chamieh C, Soufan R, Mathieu M-C, Balleyguier C, Delalogue S, et al. Real-world diagnostic accuracy of the on-site cytopathology advance report (OSCAR) procedure performed in a multidisciplinary one-stop breast clinic. *Cancers*. 2023;15(20):4967.
- Joukainen S. New insights into oncoplastic breast-conserving surgery: Itä-Suomen yliopisto; 2022.
- Ciftci I, Sekmenli T, Ozbek S, Karamese M, Ugras S. Inframammary giant fibroadenoma removing and nipple-sparing breast reconstruction in an adolescent: a case report. *Prague Medical Report*. 2015;116(2):161-6.
- Javed A, Jenkins SM, Labow B, Boughey JC, Lemaine V, Neal L, et al. Intermediate and long-term outcomes of fibroadenoma excision in adolescent and young adult patients. *The breast journal*. 2019;25(1):91-5.
- SHANMUGAM S, MS RR, MS M. NATCON IASO Abstract 2015. *Indian J Surg*. 7(3):273-94.
- Littrup PJ, Freeman-Gibb L, Andea A, White M, Amerikia KC, Bouwman D, et al. Cryotherapy for breast fibroadenomas. *Radiology*. 2005;234(1):63-72.
- Rakesh A, Manjunatha PS, Muthukumarr A. Surgical Excision of Fibroadenoma in a 19-Year-Old Female: A Case Report Utilizing Circumareolar Incision. *Journal of Young Pharmacists*. 2024;16(3):604-6.
- Oprić S, Oprić D, Gugić D, Granić M. Phyllodes tumors and fibroadenoma common beginning and different ending. *Collegium antropologicum*. 2012;36(1):235-41.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons licence unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. © The Author(s) 2024