

Surgical Excision: An Effective Modality for Intradermal Melanocytic Nevus

Moizza Tahir, Najia Ahmed*, Sidiqia Javaid, Sadia Malik, Atiya Rahman**, Shahid Iqbal***

Department of Dermatology, Combined Military Hospital Gujranwala/National University of Medical Sciences (NUMS) Pakistan, *Department of Dermatology, Pakistan Naval Ship Hospital, Karachi Pakistan, **Department of Dermatology, Combined Military Hospital Lahore/National University of Medical Sciences (NUMS) Pakistan, ***Department of Dermatology, Combined Military Hospital Gujranwala/National University of Medical Sciences (NUMS) Pakistan,

ABSTRACT

Objective: To evaluate the effectiveness of fusiform surgical excision of intradermal melanocytic nevus and to document the aesthetic outcome of post-excisional surgical scar.

Study Design: Prospective longitudinal study.

Place and Duration of Study: Tertiary Care Hospital, Gujranwala Pakistan, from Apr to Oct 2021.

Methodology: Patients with intradermal melanocytic nevus were enrolled after informed consent. Close-up photographs of the nevus and the site post-excision were taken. Local anaesthesia was injected with 2% Lignocaine with Adrenaline under aseptic measures. An elliptical incision with scalpel blade-15 was made around the nevus. The length of the incision was almost three times its width. Nevus and the involved tissue were removed to its full depth. A visual analogue scale was used to assess the scar cosmesis.

Results: A total of 37 intradermal melanocytic nevi, were included in the study. The size of the intradermal melanocytic nevus ranged from 0.5-2cm with a duration of 3-10 years. The mean visual analogue scar scale on day 5 of surgical excision was 7.23 ± 1.423 , and on day seven was 5.37 ± 0.575 . Surgical sutures were removed on day 5 in 13(35.1%) cases and day-7 in 24(64.9%) cases.

Conclusion: Surgical excision is an effective treatment modality for intradermal melanocytic nevus.

Keywords: Fusiform excision, Intradermal melanocytic nevus, Visual analogue scale.

How to Cite This Article: Tahir M, Ahmed N, Javaid S, Malik S, Rahman A, Iqbal S. Surgical Excision: An Effective Modality for Intradermal Melanocytic Nevus. *Pak Armed Forces Med J* 2023; 73(4): 1008-1011.
DOI: <https://doi.org/10.51253/pafmj.v73i4.7672>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Acquired melanocytic nevi develop from melanocytes. They are benign and biologically stable lesions. They are categorized into junctional, compound or intradermal melanocytic nevi (IMN).¹ Intradermal Melanocytic Nevus has clusters of nevus cells located in the dermis with the minimal possible proliferation of melanocytes in the epidermis.² Nevus cells found in the dermis have neuroid or fibroblastic morphology. Diagnosis of IMN is clinical, and the risk for malignant transformation is low. They are most commonly found on the face. Other associated clinical features of IMN are telangiectasia and terminal hair.³

Laser therapy and surgical excision are among the most commonly practised techniques for treatment.⁴ The removal of nevus by laser therapy is debatable since there is no specimen for tissue diagnosis and histopathology. Furthermore, laser therapy has a chance of recurrence, and its complete removal is quite difficult. Radiofrequency and electrocautery are other techniques employed to remove the nevus.⁵ These techniques lead to thermal damage, and their aesthetic

outcomes are not satisfactory, which is the fundamental concern of patients.⁶

Surgical excision remains the most extensively used and one of the finest methods. Multiple surgical techniques are in practice for IMN removal, such as deep excision, shave, round, and punch excision.⁷ Removal of IMN by shave excision has a potential disadvantage of post-surgical permanent scar formation, and there are chances of recurrence. Punch excision may lead to post-surgical dog ears formation.⁸

Additionally, the excised specimen can be histologically examined.⁹ At present, there is no consensus on the surgical excision technique of intradermal melanocytic nevi, and the choice lies with the dermatologist.¹⁰ There is a dearth of locally published literature on the excision of IMN and aesthetic outcomes. The present study aims to evaluate the effectiveness of fusiform surgical excision of intradermal melanocytic nevus. It will document the aesthetic outcome of post-excisional surgical scar. The study would benefit the choice of practice to address this common aesthetic concern.

METHODOLOGY

The prospective longitudinal study was conducted at the Department of Dermatology, Tertiary Care

Correspondence: Dr Moizza Tahir, Department of Dermatology, Combined Military Hospital Gujranwala Pakistan
Received: 15 Nov 2021; revision received: 25 Feb 2022; accepted: 28 Feb 2022

Hospital, Gujranwala from April to October 2021. Hospital Ethical Review Board approved the study (ERB 01/2021). A total of 37 clinically diagnosed IMNs, after informed consent, were included during the study duration by consecutive sampling technique.

Inclusion Criteria: All patients aged more than 15 years, of either gender, with a clinical diagnosis of intradermal melanocytic nevi were included in the study.

Exclusion Criteria: Patients with bleeding disorders; those on anti-coagulant therapy; previous history of keloids; collagen vascular disease; immunosuppressed patients, were excluded.

Patients' demographics and IMN characteristics like size, colour and hair growth were recorded. Close-up photographs of IMN before and after surgical excision were taken. For surgical excision skin of IMN and its surrounding area was cleaned with Povidone-Iodine and then with 75% Methylated Alcohol. Local anaesthesia was given with an injection 2% Lignocaine. An incision was made in an elliptical pattern around the nevus using a scalpel blade-15. The incision was almost three times in its length than in width. Incisions were always made along the relaxed skin creases cautiously. Nevus was removed up to mid-subcutaneous tissue depth. Interrupted sutures were employed for wound closure using non-absorbable Polypropylene monofilament (Proline 5-0), and wound edges were undermined. Sterile gauze packs were used for wound dressing. Histopathological examination of obtained specimen was advised in all cases. Removal of sutures was done on the 5th-07th post-operative day. Scar assessment was done by the visual analogue scale of scar scoring, which is a reliable, practicable and validated tool for scar scoring.¹¹ Scar was assessed by another dermatologist working in the same department.

Statistical Package for Social Sciences (SPSS) version 25.0 was used for the data analysis. Quantitative variables were expressed as Mean \pm SD and qualitative variables were expressed as frequency and percentages. The Independent sample t-test was employed for the visual analogue scar scale and duration of the stitch assessment. The *p*-value lower than or up to 0.05 was considered as significant.

RESULTS

A total of 37 clinically diagnosed IMNs were included in the study. The size of IMN was from 0.5-2cm with a duration of 3 to 10 years. All excised IMN

were sent for Histopathological examination, which confirmed the diagnosis. The distribution of IMN is shown in Table-I. The mean visual analogue scar scale on day 5 was 7.15 \pm 1.405, and on day-7 was 5.38 \pm 0.576. Sutures were removed on day-5 in 13(35.1%) cases and on day-7 in 24(64.9%) cases.

Table-I: Distribution of Intradermal Melanocytic Nevus (n=37)

Distribution	n(%)
Cheek	18(48.6%)
Forehead	8(21.6%)
Nose	2(5.4%)
Chin	5(13.5%)
Anterior chest	2(5.4%)
Arm	1(2.7%)
Ear	1(2.7%)

Surgical scar assessment on a visual analogue scar scale relative to the duration of surgical sutures showed a statistically significant difference in scar cosmesis in relation to the duration of stitch, as shown in Table-II.

Table-II: Visual Analogue Scar Scale with respect to Duration of Sutures (n=37)

Scar scale	Duration of Sutures Group-1 n=13	Duration of Sutures Group-2 n=24	<i>p</i> -value
Visual Analogue Scar Scale	7.15 \pm 1.405	5.38 \pm 0.576	0.001

Figures 1, 2 & 3 show the intradermal melanocytic nevus, before and after surgical removal.

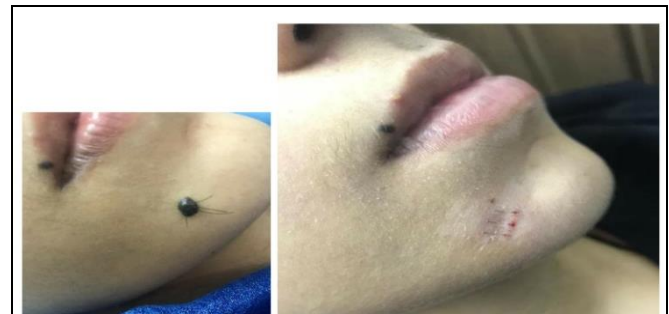


Figure-1: a; Intradermal Melanocytic Nevus Chin, b; Surgical Site at day-5

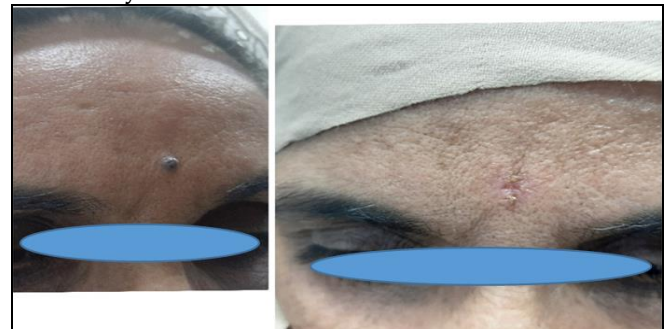


Figure-2: a; Intradermal Melanocytic Nevus Forehead, b; Surgical Site at day-7



Figure-3: a; Intradermal Melanocytic Nevus on Lateral Forehead , b:Surgical Site day-7

DISCUSSION

Melanocytic lesions are common aesthetic concerns that dermatologists encounter in their daily practice. Melanocytic nevi may be congenital, but the majority of nevi that occur in childhood or adolescence are acquired melanocytic nevi. Treatment choices for IMN must be effectual, safe and with the least unfavourable consequences.¹²

We have done surgical excisions of IMN located mostly on exposed parts with excellent cosmetic results, as Tursen *et al.* in Turkey recommended that surgical excision is the most acceptable and widely used treatment modality for IMN with appreciable cosmetic outcomes.¹³ Lee *et al.* however in their study on 24 Korean patients found combined treatment of Er: YAG laser and long-pulsed alexandrite laser as an effective treatment modality for small benign melanocytic nevi with least untoward effects and low recurrence rate.¹⁴ Similar findings were reported by Hang Li *et al.* in China, where most nevi consultation was by females.¹⁵ Camini *et al.*, in a randomized clinical trial, documented 86.7% female consultations for IMN removal.¹⁶ Intradermal Melanocytic Nevus is an aesthetic concern for females.

The colour of nevi was predominantly brown and black, which is commensurate with the findings of Wang *et al.* in Singapore.¹⁷ Treatment of IMN is mainly aesthetic; its risk of malignant transformation is rare. Ponomarev *et al.* found that surgical methods are associated with a risk of scarring, whereas laser removal can additionally cause skin discolouration. They described dual-wavelength copper vapour laser (CVL) as a safe and effective modality for dermatologists and cosmetologists in treating IMN.¹⁸ Surgical excision offers definite outcomes, histopathological examination, and the least risk of recurrence compared to other treatment modalities. There is a marked risk of

recurrence, and long-term follow-up is required in other treatment options, as Suzuki *et al.* reported in Japan.¹⁹ Cosmetic goals can be attained with clinical assessment of size, location and incision design of nevi.

Many adults desire to maintain a clean, youthful skin appearance. With the betterment of living standards, investment in aesthetics has increased. Because of growing aesthetic concerns, surgical excision remains an excellent technique for removing melanocytic nevi with appreciable outcomes and patient satisfaction in resource-limited setups.

LIMITATIONS OF STUDY

Follow-up of the scar till surgical suture removal; recurrence, scar size, hypertrophy or keloid formation, could not be evaluated. Scar cosmesis is expected to improve further with time, which was not considered in the current study.

ACKNOWLEDGEMENT

The authors acknowledge patients for participation in the study and paramedical staff contribution in assisting cutaneous surgery.

CONCLUSION

Surgical excision is an effective modality of treatment for intradermal melanocytic nevus. The aesthetic outcome of post-excisional surgical scar is good. The additional benefit of the availability of samples for histopathological examination is a significant advantage of this procedure over others.

Conflict of Interest: None.

Authors Contribution

Following authors have made substantial contributions to the manuscript as under:

MT: & NA: Data acquisition, data analysis, drafting the manuscript, critical review, approval of the final version to be published.

SJ: & SM: Data acquisition, conception, approval of the final version to be published.

AR: & SI: Study design, drafting the manuscript, data interpretation, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

REFERENCES

- Soares AS, Manzoni APD, De Souza CDA, Weber MB, Watanabe T. Comparative analysis between sutured elliptical excision and shaving of intradermal melanocytic nevi: a Randomized control trial. *Surg Cosmet Dermatol* 2016; 8(4): 316-320. <http://dx.doi.org/10.5935/scd1984-8773.201684902>
- Coates SJ, Avarbock A, Desman GT. Giant benign intradermal melanocytic nevus of rapid onset. *Dermatol J* 2017;23(2):21.
- Arora H, Aizpurua LF, Cacon A, Griffith RD, Nouri K. Lasers in nevi: a review. *J Lasers Med Sci* 2015; 30(7): 1991-2001. <https://doi.org/10.1007/s10103-014-1697-y>

4. Tschandl P. Recurrent nevi: report of three cases with dermatoscopic-dermatologic correlation. *Dermatol Pract Concept* 31(1): 29-32. <https://doi.org/10.5826%2Fdpc.0301a08>
5. Oh SI, Lee YH. Multidirectional vector excision leads to better outcomes than traditional elliptical excision of facial congenital melanocytic nevus. *Arch Plast Surg* 2013; 40: 570-574. <https://doi.org/10.5999/aps.2013.40.5.570>
6. Kumar S, Srivastava N, Singh B. Surgical options for aesthetic management of facial melanocytic nevi. *Clin Cosmet Investig Dermatol* 2016; 2(4): 104-106.
7. Sardana K, Chakravarty P, Goel K. Optimal management of common acquired melanocytic nevi(moles): current perspectives. *Clin Cosmet Inv Derm* 2014; 7(1): 89-103. <https://doi.org/10.2147%2FCCID.S57782>
8. Hassan I, Jeelani S, Keen A, Wani M. Classical fusiform excision of melanocytic nevi: our experience. *Dermatol Online J* 2013; 4(2): 153-156. <http://dx.doi.org/10.7241/ourd.20132.35>
9. Camini L, Manzoni APD, Weber MB, Luzzato L, Soares AS. Shave excision versus elliptical excision of non-pigmented Intradermal Melanocytic Nevi: comparative assessment of recurrence and cosmetic outcomes. *Dermatol Surg* 2021; 47(2): e21-e25. <https://doi.org/10.1097/dss.0000000000002666>
10. Duncan ALJ, Bond JS, Mason T, Ludlow A, Cridland P. Visual analogue scale scoring and ranking: a suitable sensitive method for assessing scar quality. *Plastic Reconstr Surg* 2006; 118(4): 909-918. <https://doi.org/10.1097/01.prs.0000232378.88776.b0>
11. Ghosh A, Ghartimagar D, Thapa S, Sathian B, Shrestha B. Benign melanocytic lesions with emphasis on melanocytic nevi- a histomorphological analysis. *J Pathol Nep* 2018; 8(1): 1384-1388.
12. Kim YJ, Whang KU, Kim SW. Efficacy and safety of 1,064 nm Q-switched Nd: YAG Laser Treatment for removing Melanocytic Nevi. *Ann Dermatol* 2012; 24(2): 162-167. <https://doi.org/10.5021%2Fad.2012.24.2.162>
13. Tursen U, Kaya TI, Ikizoglu G. Surgical approach to benign small popular and dome-shaped melanocytic nevi on the face. *J Cosmet Dermatol* 2003; 2(3-4): 175-179.
14. Lee SE, Choi JY, Hong KT, Lee KR. Treatment of acquired and small congenital melanocytic nevi with combined Er: YAG laser and long-pulsed alexandrite laser in Asian skin. *Dermatol Surg* 2015 ; 41(4): 473-480. <https://doi.org/10.1097/dss.000000000000288>
15. Li QX, Li H, Tu P, Yang SX, Swanson DL. Clinical and dermoscopic features of surgically treated melanocytic nevi: a retrospective study of 1046 cases. *Chin Med J(Engl)* 2019; 132(17): 2027-2032. <https://doi.org/10.1097/cm9.000000000000416>
16. Gambichler T, Senger E, Rapp S, Alamouti D, Altmeyer P, Hoffmann K. Deep shave excision of macular melanocytic nevi with the razor blade biopsy technique. *Dermatol Surg* 2000 ; 26(7): 662-666. <https://doi.org/10.1046/j.1524-4725.2000.036.x>
17. Wang ECE, Sen P, Goh CL, Chua SH. Single treatment with 100-Microsecond Alexandrite Laser Clears Selected Acquired Melanocytic Nevi in type IV Asian Facial Skin. *J Cutan Aesthet Surg* 2013; 6(1): 21-26. <https://doi.org/10.4103/0974-2077.110092>
18. Ponomarev IV, Topchiiy SB, Shakina LD. The Successful Treatment of Eyelid Intradermal Melanocytic Nevi (Nevus of Miescher)With the Dual-Wavelengths Copper Vapor Laser. *J Lasers Med Sci* 2021; 12: e23. <https://doi.org/10.34172/jlms.2021.3>
19. Suzuki H, Anderson RR. Treatment of melanocytic nevi. *Dermatol Ther* 2005(10): 217-226. <https://doi.org/10.1111/j.1529-8019.2005.05021.x>

.....