Scientific Journal of Dermatology and Venereology
e-ISSN 3025-6208 *journal homepage: phlox.or.id/index.php/sjdv*

Case Report

One-Stage Earlobe-Based Transposition Flap After Full-Thickness Excision of a Congenital Verrucous Epidermal Naevus Spanning the Right Earlobe and Lateral Neck in a 3-Year-Old Boy: A Case Report With Dermoscopic and Histopathological Correlation

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ARTICLE INFO

Article history:
Received: July 2, 2026
Accepted: August 1, 2026
Published: August 18, 2026

Keywords:
Child, preschool
Ear auricle
Nevus
Reconstructive surgical procedures
Surgical flaps

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DOI:
https://doi.org/10.59345/sjdv.v4i1.320

ABSTRACT

Background: Verrucous epidermal naevus is a benign keratinocytic hamartoma that arises from post-zygotic somatic mutation and follows the lines of Blaschko. Lesions crossing the auricular and cervical units are uncommon and difficult to treat, because ablative and topical modalities clear the surface but leave the mutant keratinocyte clone.

Objective: To describe the diagnosis, reconstructive decision and outcome of a one-stage earlobe-based transposition flap after full-thickness excision of such a lesion in a preschool child.

Case Presentation: A 3-year-old boy was referred with a brown linear verrucous plaque measuring 7 × 0.75 × 0.1 cm, present on the right earlobe since birth and extending along the right lateral neck, thickening and becoming painful over three months. Dermoscopy showed cobblestone verrucous and papillomatous structures with brown to bluish-grey pigmentation and no melanocytic network. Absent pruritus and inflammation, and a normal systemic evaluation, excluded inflammatory linear verrucous epidermal naevus and epidermal naevus syndrome. Full-thickness excision under general anaesthesia with tumescent infiltration removed auricular and cervical specimens of 3.5 × 0.8 cm and 7 × 0.3 cm, and the defect was closed in one stage with an earlobe-based transposition flap. Histopathology showed hyperkeratosis, acanthosis and papillomatosis with focal hypergranulosis and vacuolated granular and spinous cells. Healing was uneventful; a hypertrophic scar confined to the cervical limb appeared by postoperative day 73.

Conclusion: Complete excision with a one-stage earlobe-based transposition flap achieved definitive clearance and preserved auricular contour. Suprabasal vacuolation in a keratinocytic naevus should prompt keratin gene sequencing and reproductive counselling.

All authors have reviewed and approved the final version of the manuscript.

1. Introduction

Verrucous epidermal naevus is a benign keratinocytic hamartoma of the epidermis that is present at birth or declares itself during the first years of life, and that owes its existence to a post-zygotic somatic mutation in a single progenitor keratinocyte. The descendants of that cell populate a territory of skin defined not by dermatome or by vascular supply but by the embryonic migration pathways described as the lines of Blaschko, which is why the clinical signature of the condition is a linear, whorled or S-shaped band of hyperkeratotic and papillomatous plaques rather than a rounded lesion. A recent retrospective genotype–phenotype analysis of twenty-two Chinese patients with keratinocytic epidermal naevus confirmed both the mosaic architecture of these lesions and the breadth of the driver mutations responsible for them, and demonstrated that genotype maps only loosely onto the clinical picture that the dermatologist actually sees at the bedside.[1] Reports of individual patients continue to widen that spectrum: gain-of-function variants in *TRPM4* have now been shown by whole-exome sequencing of lesional tissue to underlie inflammatory linear verrucous epidermal naevus,[2] codon 146 *KRAS* variants have been identified in isolated epidermal naevi as well as in multiple naevi,[3] and *HRAS*-related mosaicism has been shown to produce phenotypes that range from a solitary keratinocytic plaque to a full epidermal naevus syndrome with skeletal and neurological involvement.[4] What these studies share is a single conceptual message: the clinical lesion is the visible edge of a genetically distinct clone of keratinocytes that occupies the full thickness of the epidermis and that will not disappear on its own.

That conceptual point has immediate therapeutic consequences, and it is the reason why verrucous epidermal naevus remains one of the more frustrating benign conditions in paediatric dermatology. Because

the abnormality resides in the basal keratinocyte, any modality that removes only the superficial hyperkeratotic surface leaves the clone intact and invites recurrence. Published experience with non-surgical modalities is instructive rather than discouraging. A verrucous epidermal naevus has been flattened effectively with a topical flumethasone–salicylic acid combination,[5] and a pruritic facial lesion has been cleared with photodynamic therapy, an approach chosen precisely because the site was cosmetically sensitive.[6] A systematised epidermal naevus in a young adult has been managed with ablative laser.[7] Each of these reports describes real benefit; none of them claims histological eradication of the mutant clone. Against this background, a recent case report and literature review of a verrucous epidermal naevus treated by full-thickness skin excision made the opposite argument explicitly, concluding that complete excision remains the only intervention that reliably achieves both clearance and a tissue diagnosis.[8] A retrospective cohort of nine hundred and forty-six children who underwent naevus surgery in a dedicated dermatological surgery centre provides the practical counterweight to that recommendation by documenting what excision actually costs in this age group in terms of histopathological yield and complications.[9]

The argument for definitive removal is strengthened, although not driven, by the small but real possibility of a secondary neoplasm arising within an epidermal naevus. Basal cell carcinoma has been reported to arise from an epidermal naevus,[10] a retrospective analysis of naevus sebaceus specimens has quantified the frequency with which secondary tumours are found within an apparently benign organoid naevus,[11] and a neoplasm has been described arising within an inflammatory linear verrucous epidermal naevus.[12] None of these observations turns a benign hamartoma into a premalignant lesion, and none of them justifies prophylactic surgery on oncological grounds alone in a preschool child. They do, however, argue strongly that when a lesion is removed it should be removed completely and submitted in its entirety for histopathological examination, rather than debulked or ablated without a specimen.

Where the lesion sits determines how difficult the operation will be. Keratinocytic naevi of the head and neck are well represented in the published literature, and involvement of the auricle, the periauricular skin and the lateral neck poses a reconstructive problem out of proportion to the size of the defect. The auricle is a thin, mobile, three-dimensional aesthetic subunit with a delicate vascular supply and with a contour that the observer's eye compares directly against the contralateral side. The lateral neck immediately below it is a mobile field crossed by relaxed skin tension lines that run obliquely, and it tolerates a longitudinal scar poorly. The reconstructive literature for this territory is well developed but is drawn almost entirely from adult oncological surgery: single-stage transposition flaps have been described for defects of the concha cavum, incisura, antitragus, antihelix and lobule;[13] the posterior pull-through flap has been used to reconstruct the anterior ear;[14] the chondrocutaneous conchal transposition flap has been revived for auricular reconstruction;[15] and inferior pedicle,[16] full-thickness[17] and other local flap designs[18] have each been reported for earlobe defects. Comparative work consistently favours local flaps over grafts when contour and colour match matter: a cohort study of non-melanoma skin cancer reconstruction found better functional and aesthetic outcomes with local flaps than with grafts,[19] and a comparison of local flaps against skin grafts in a small contour-critical facial region reached the same conclusion.[20] Paediatric data are much thinner; the vertical transposition flap has been applied to large facial soft-tissue defects in children with good results, but the series is small.[21]

The novelty of the present report lies at the intersection of these two literatures. Reports of verrucous epidermal naevus concentrate on diagnosis, on molecular characterisation and on non-surgical treatment, and rarely describe the reconstruction in operative detail. Reports of earlobe and periauricular flap reconstruction concentrate on adults with malignant tumours, in whom oncological margins rather than developmental considerations drive the design. We are not aware of a previous description of a congenital verrucous epidermal naevus spanning both the earlobe and the lateral neck in a preschool child that was removed by full-thickness excision and reconstructed in a single stage with an earlobe-based transposition flap, and that was documented with paired clinical and dermoscopic imaging, an operative photographic sequence, histopathological correlation and follow-up long enough to capture the scar as well as the flap. The aim of this report is therefore threefold: to describe the clinical, dermoscopic and histopathological features that allowed a confident diagnosis of verrucous epidermal naevus and the confident exclusion of inflammatory linear verrucous epidermal naevus and epidermal naevus syndrome; to set out the reasoning behind the choice of full-thickness excision with an earlobe-based transposition flap over the graft-based and ablative alternatives; and to draw attention to a histological detail in this specimen — vacuolated cells within the granular and spinous layers — whose recognition carries a genetic counselling implication that extends beyond the child in front of us.

2. Case Presentation

2.1. Patient information

A 3-year-old boy was referred from a district hospital to the Oncology and Skin Surgery Division of a tertiary dermatology department on 15 October 2025 with a brown linear verrucous lesion extending from the right earlobe to the right side of the neck. The lesion had been present since birth as a dark patch confined to the ear and had extended gradually onto the neck as the child grew. Over the three months preceding referral it had thickened progressively and had become intermittently painful, particularly when touched. There was no history of pruritus, spontaneous bleeding, ulceration,

discharge or secondary infection at any point. The child was active and able to follow commands, and had no fever, cough or other systemic complaint. Growth and developmental milestones were appropriate for age. No drug or food allergy was reported. Prenatal, birth and family histories were unremarkable, and in particular no family member carried a similar lesion. The complete chronology, from birth through referral, operation and follow-up, is set out in Figure 1, which serves as a graphical summary of the narrative that follows; Figure 1 also records the day numbering used throughout this report, in which the day of excision is designated day 0.

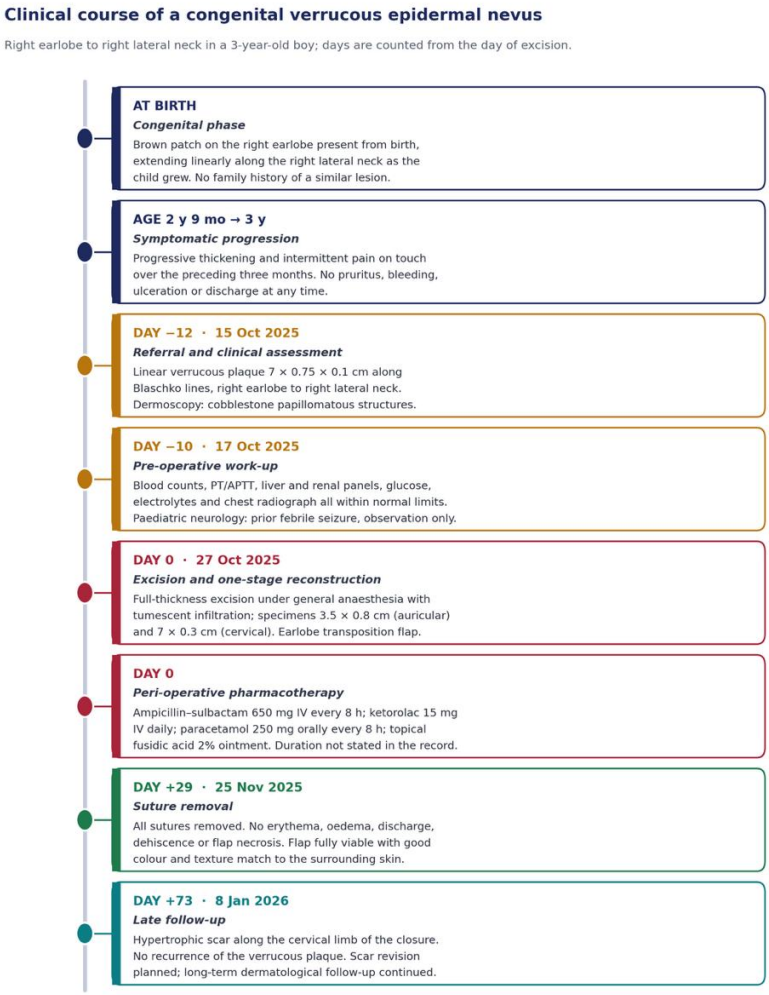

Figure 1. Clinical course of the congenital verrucous epidermal naevus, from birth to postoperative day 73. Day numbering is relative to the day of excision (day 0). The upper two cards summarise the congenital phase and the three months of symptomatic progression that preceded referral; the amber cards cover referral and pre-operative evaluation; the crimson cards cover the operation and the peri-operative pharmacotherapy; and the green and teal cards cover suture removal and the late follow-up visit at which the hypertrophic scar was identified.

2.2. Clinical findings

On examination the patient was alert, cooperative and comfortable, with stable vital signs and with weight and height appropriate for age; he was systemically well, and the description of moderate general condition recorded in the notes reflects the local clinical convention for a child admitted for elective surgery rather than any systemic compromise. Systemic examination disclosed no abnormality. Dermatological examination showed a localised, well-defined linear verrucous plaque following the lines of Blaschko, arising on the right earlobe and running inferiorly and anteriorly onto the right lateral neck, and measuring approximately 7 × 0.75 × 0.1 cm. The plaque was firm and, on the day of examination, non-tender to light palpation; the pain reported in the history was intermittent and provoked by contact rather than constant, which is why the examination finding and the history are not in conflict. Its surface was composed of coalescent brown papillomatous papules that gave it a cobblestone texture. Figure 2A shows the plaque in close-up with a ruler in the field, demonstrating the abrupt transition from the raised earlobe component to the narrower, beaded cervical component, and Figure 2B shows the same lesion in a wider view that captures its full craniocaudal extent along the lateral neck. The plaque was not hair-bearing on clinical inspection. There was no surrounding erythema, no scale of psoriasiform type, no excoriation and no evidence of secondary infection. The contralateral ear and neck were normal, and no other cutaneous lesion was found on full-body examination. Hair, nails and oral mucosa were normal.

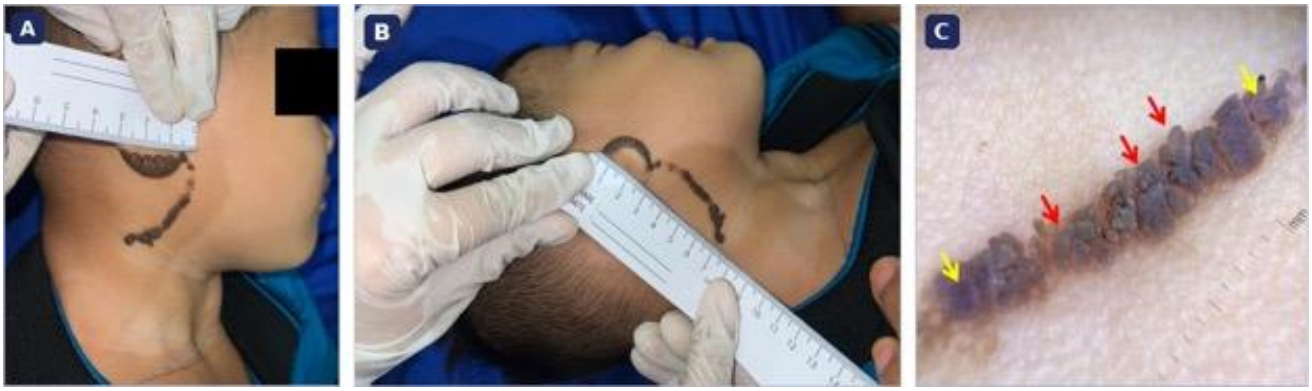

Figure 2. Clinical and dermoscopic findings at referral (day −12). *(A)* Close-up of the linear verrucous plaque with a ruler in the field, showing the abrupt transition from the raised earlobe component to the narrower, beaded cervical component; the coalescent brown papillomatous papules give the surface a cobblestone texture. *(B)* Wider view of the same lesion demonstrating its full craniocaudal extent along the right lateral neck, measuring 7 × 0.75 × 0.1 cm overall. *(C)* Polarised dermoscopy (DermLite 4, ×40) showing a linear arrangement of well-demarcated verrucous and papillomatous structures forming a plaque (red arrows) with brown to bluish-grey pigmentation (yellow arrows), and neither a melanocytic network nor prominent vascular structures. The periorbital region has been redacted in panels A and B to protect patient identity. Panels A and B were captured on different devices and differ in resolution; panel C is reproduced at the native resolution of the dermatoscopic capture.

2.3. Diagnostic assessment

Dermoscopic evaluation was performed with a polarised handheld dermatoscope (DermLite 4, 3Gen, San Juan Capistrano, California, United States) at ×10 for screening and at ×40 for detailed examination of the areas of interest. This two-step protocol reflects what was performed; the legend supplied with the source image recorded only the magnification at which the reproduced capture was made. Dermoscopy demonstrated a linear arrangement of multiple well-demarcated verrucous and papillomatous structures forming a plaque, with brown to bluish-grey pigmentation and an overall cobblestone pattern. Neither a melanocytic pigment network nor prominent or atypical vascular structures were seen. Figure 2C shows these features, with the papillomatous structures indicated by the red arrows and the brown to bluish-grey pigmentation by the yellow arrows. The dermoscopic picture was consistent with marked epidermal hyperplasia and argued against a melanocytic lesion.

On the basis of the congenital onset, the blaschkoid distribution, the verrucous surface and the dermoscopic findings, a working diagnosis of verrucous epidermal naevus was made. Four further blaschkoid conditions were considered and set aside on morphological grounds at the bedside: linear porokeratosis, excluded by the absence of an annular hyperkeratotic border and of the peripheral ridge that corresponds to a cornoid lamella; lichen striatus, excluded by the absence of flat-topped lichenoid papules, by the congenital rather than acquired onset and by three years of persistence in a condition that is characteristically self-limiting; naevus comedonicus, excluded by the absence of grouped comedo-like openings and follicular plugging; and segmental Darier disease, excluded by the absence of greasy keratotic papules and by a distribution that did not follow the seborrhoeic areas. Two differential diagnoses were then formally worked up: inflammatory linear verrucous epidermal naevus, and epidermal naevus syndrome. Table 1 sets out the discriminating features used at the bedside, column by column, together with the specific finding recorded in this patient for each feature. As detailed in Table 1, the complete absence of pruritus and of any inflammatory component throughout a three-year course argued strongly against inflammatory linear verrucous epidermal naevus, while the absence of any neurological, ocular, skeletal or other extracutaneous abnormality, combined with a solitary lesion of limited extent, argued against epidermal naevus syndrome.

2.4. Pre-operative evaluation

A structured pre-operative work-up was arranged and completed on 17 October 2025, ten days before surgery (day −10). It comprised a full blood count, prothrombin time and activated partial thromboplastin time, liver function tests, renal function tests, blood glucose concentration and serum electrolytes, together with a chest radiograph. All results were within normal limits for age, and the chest radiograph was reported as normal. Referrals were made to the departments of paediatrics, paediatric neurology and anaesthesiology. Paediatrics confirmed fitness for surgery. Paediatric neurology recorded a history of febrile seizure, judged it to require observation only, and identified no focal deficit, no developmental delay and no indication for neuroimaging; this assessment is reported here because a seizure history is one of the features that raises the question of epidermal naevus syndrome, and its benign febrile character in this child was part of the reasoning that excluded that diagnosis. Anaesthesiology cleared the child for general anaesthesia.

Table 1. Bedside discriminators between verrucous epidermal naevus, inflammatory linear verrucous epidermal naevus and epidermal naevus syndrome, with the corresponding finding recorded in the present patient.

Feature	Verrucous epidermal naevus	Inflammatory linear verrucous epidermal naevus	Epidermal naevus syndrome	Finding in this patient
Age at onset	Present at birth or in early childhood	Usually early childhood; may follow the naevus by months to years	Cutaneous component congenital; systemic features may declare later	Present at birth on the right earlobe; extension onto the neck during the first three years
Distribution	Blaschko-linear, unilateral, segmental[1]	Blaschko-linear, most often a single limb or trunk band[22]	Often extensive or systematised, may be bilateral[4]	Single blaschkoid band, right earlobe to right lateral neck, 7 × 0.75 × 0.1 cm
Pruritus	Characteristically absent	Intense and characteristic; the principal discriminator[23]	Depends on the naevus subtype	Absent throughout three years
Erythema and scale	Absent; the plaque is skin-coloured to brown	Erythematous, scaly, psoriasiform[24]	Variable	Absent; no surrounding erythema and no psoriasiform scale
Surface morphology	Coalescent verrucous papillomatous papules, cobblestone texture	Erythematous verrucous plaque with adherent scale	As for the constituent naevus type	Coalescent brown papillomatous papules with cobblestone texture
Dermoscopy	Well-demarcated papillomatous structures, brown to bluish-grey pigment, no melanocytic network[25]	Papillomatous structures with diffuse erythema, scale and dotted vessels[24]	As for the constituent naevus type	Cobblestone papillomatous structures, brown to bluish-grey pigment, no network, no atypical vessels (Figure 2C)
Histopathology	Hyperkeratosis, acanthosis, papillomatosis, focal hypergranulosis	Alternating ortho- and parakeratosis with psoriasiform hyperplasia and agranulosis[23]	As for the constituent naevus type	Hyperkeratosis, acanthosis, papillomatosis, focal hypergranulosis and suprabasal vacuolation (Figure 5)
Extracutaneous involvement	None by definition	None, although arthropathy has been described	Central nervous system, ocular, skeletal[26–28]	None; normal development, systemic examination, laboratory panel and chest radiograph
Neurological assessment	Not indicated in an isolated lesion	Not indicated	Indicated where the naevus is extensive or systematised[29]	Simple febrile seizure only; no focal deficit, no developmental delay, imaging not indicated
Molecular basis	Post-zygotic *KRAS*, *HRAS*, *FGFR3*, *KRT1* or *KRT10* mosaicism[1,3]	Post-zygotic gain-of-function *TRPM4*[2]	*HRAS*, *KRAS* and related pathways[4,30]	Not analysed; keratin gene sequencing recommended (see Discussion)
Response to ablative or topical therapy	Surface clears, clone persists, recurrence common[5,6]	Often refractory; inflammation recurs	As for the constituent naevus type	Not attempted; full-thickness excision performed as the definitive option[8]

Notes: *The final column is the evidence on which the diagnosis and the two exclusions were based.*

2.5. Parental counselling

Before the operation the parents were counselled in detail. They were told that verrucous epidermal naevus is a benign, non-contagious overgrowth of the outer layer of the skin, usually present at birth or appearing in early childhood, that it typically enlarges proportionately as the child grows and does not resolve spontaneously, and that mild discomfort or pain may occur where the lesion is subject to friction or trauma while itching and bleeding are uncommon. They were told that treatment depends on the size, the site, the associated symptoms and the cosmetic burden of the lesion, that surgical excision is generally recommended for localised lesions in visible areas, and that the excised tissue must be submitted for histopathological examination to confirm the diagnosis. The reconstructive plan was explained: that after removal the defect would be closed with a transposition flap, which offers a better colour and texture match and a lower risk of tissue necrosis than a skin graft. The risks were set out explicitly and included infection, flap necrosis, hypertrophic or keloid scarring, and injury to adjacent nerves or blood vessels, together with the caution that although treatment is effective, recurrence may occur and complete cure cannot be guaranteed. The parents were instructed on postoperative care: attendance for wound dressing twice weekly, keeping the dressing clean, dry and intact rather than removing it at home, avoiding scratching or repeated trauma to the area, maintaining skin hygiene, and reporting rapid regrowth, persistent pain, bleeding, ulceration or signs of infection. The importance of long-term dermatological follow-up to monitor healing, to detect recurrence and to optimise the functional and cosmetic result was emphasised.

2.6. Surgical planning

The definitive procedure was performed on 27 October 2025, twelve days after referral. Planning began with the lesion in the awake child, positioned so that the earlobe and the lateral neck were both in view. Figure 3A shows the lesion outlined in blue with the planned line of transposition marked in red, and Figure 3B shows the same outline photographed from a slightly different angle so that the cervical extension of the plaque can be followed in its entirety. The design was drawn so that the donor limb of the flap lay in the postauricular and periauricular skin, where the resulting scar would be concealed by the auricle — a clinical observation made at follow-up rather than one illustrated here, since no postauricular view was taken at the day 73 visit — and so that the cervical component of the closure lay as close as the geometry allowed to the direction of the relaxed skin tension lines of the lateral neck.

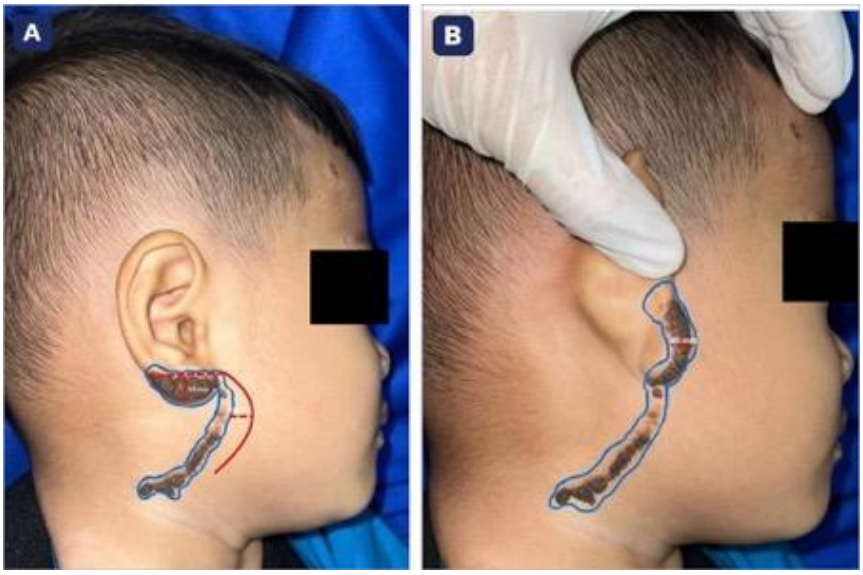

Figure 3. Pre-operative marking and flap design on the day of surgery (day 0). *(A)* The lesion outlined in blue with the planned line of transposition marked in red, showing how the donor limb was placed in the periauricular and postauricular skin so that the donor scar would be concealed by the auricle. *(B)* The same outline photographed from a slightly different angle so that the cervical extension of the plaque can be followed in its entirety. The on-image callipers are the operator's own digital annotations made during planning. The periorbital region has been redacted in both panels.

2.7. Operative technique

The child was placed supine with the head turned to the left, exposing the right periauricular field, and general anaesthesia was induced with a supraglottic airway; the positioning, the draping and the monitoring are shown in Figure 4A. After skin preparation, a tumescent solution containing adrenaline was infiltrated into the subcutaneous plane of the periauricular and cervical field to produce hydrodissection and vasoconstriction before incision. Full-thickness excision was then carried out along the marked outline, beginning in the periauricular region and continuing inferiorly along the right lateral neck. Figure 4B shows the excision in progress at the auricular end of the lesion, and Figure 4C shows the dissection extending onto the cervical component with the assistant retracting the auricle. Two specimens were removed: an auricular specimen measuring 3.5 × 0.8 cm, and a cervical specimen measuring 7 × 0.3 cm. The excised tissue was submitted in its entirety for histopathological examination. The flap is defined here once and precisely: an inferiorly based periauricular transposition flap, raised from the postauricular and infra-auricular skin, pivoting on an inferior pedicle at the lobulo-cervical junction and transposed antero-inferiorly into the lobular and periauricular defect. The short form *earlobe-based transposition flap*, used in the title, the abstract and elsewhere in this report for readability, refers throughout to the flap as defined in this sentence. Figure 4D shows the elevation and mobilisation of that flap after adequate undermining of the surrounding skin, Figure 4E shows the flap being transposed into the auricular defect with the tip inset first, and Figure 4F shows the completed inset with the suture line running along the postauricular sulcus. Undermining was carried far enough to allow the flap to sit without tension, which is the single most important technical determinant of survival in this territory. The secondary defect created by rotating the flap was closed primarily after further local undermining, and the cervical defect was closed as a simple linear closure without additional advancement. Because the lesion itself crossed the boundary between the auricular and the cervical aesthetic subunits, the excision necessarily crossed it too; the subunit principle was deliberately subordinated to complete clearance. The operative note does not record the dimensions of the defect after excision, the dimensions of the flap or the ratio of its length to its base, the position of the pivot point, the extent of undermining in centimetres, the suture material and gauge, the layer-by-layer closure, the volume and concentration of the tumescent solution, the operative time or the estimated blood loss, and none of these is therefore reported here. The complete operative record, the specimen dimensions and the peri-operative pharmacotherapy are collected in Table 2.

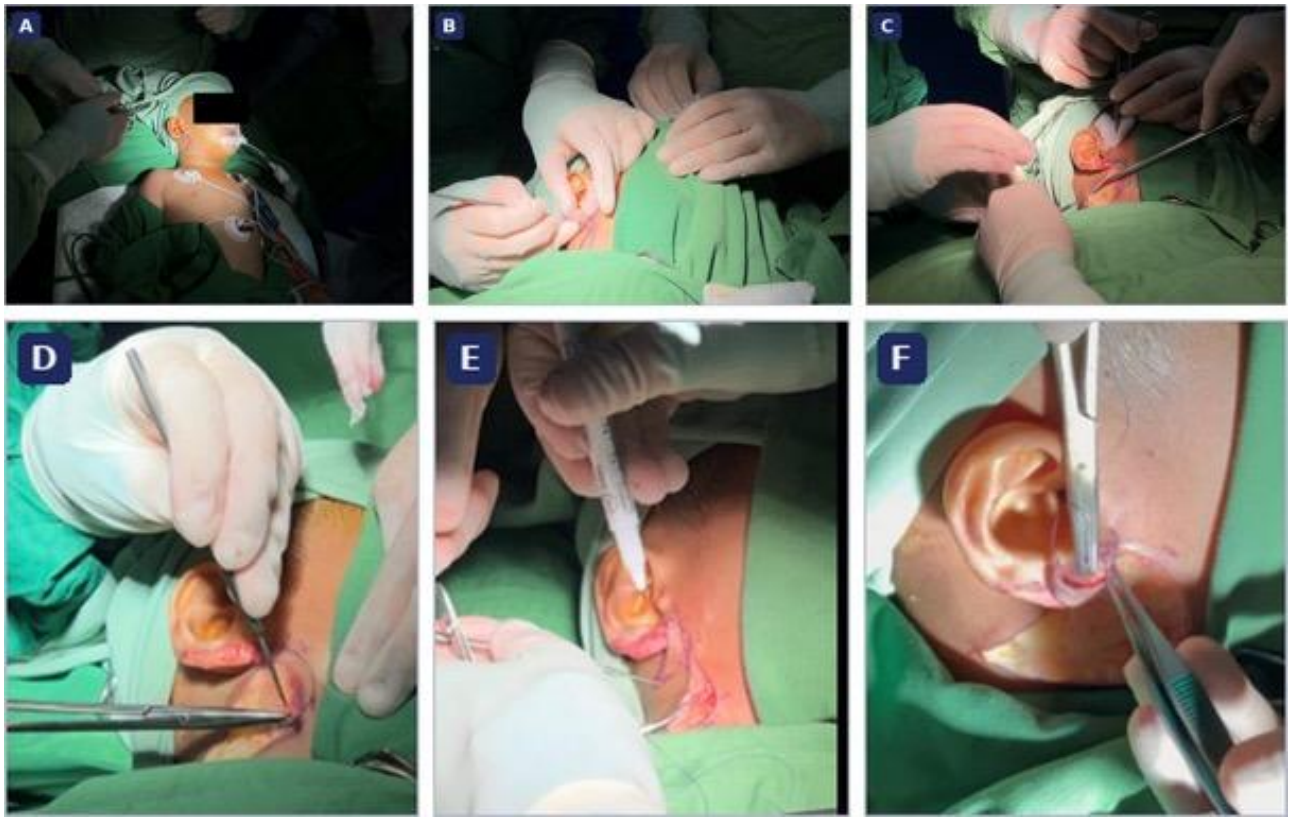

Figure 4. Intra-operative sequence (day 0). *(A)* Positioning, draping and monitoring: the child supine with the head turned to the left, exposing the right periauricular field. *(B)* Full-thickness excision in progress at the auricular end of the lesion. *(C)* Dissection extending onto the cervical component with the assistant retracting the auricle. *(D)* Elevation and mobilisation of the earlobe-based transposition flap after wide undermining of the surrounding skin. *(E)* Transposition of the flap into the auricular defect with the tip inset first, so that the least well-perfused part of the flap lies under the least tension. *(F)* Completed inset with the suture line running along the postauricular sulcus. Panels D to F are reproduced from a lower-resolution source than panels A to C. The periorbital region has been redacted in panel A.

2.8. Peri-operative pharmacotherapy

Systemic treatment consisted of ampicillin–sulbactam 650 mg intravenously every eight hours, ketorolac 15 mg intravenously once daily and paracetamol 250 mg orally every eight hours. Topical treatment was fusidic acid 2% ointment applied to the suture line postoperatively. The doses and the routes are reproduced in Table 2 exactly as recorded in the operative and ward notes; Table 2 also carries the three outcome milestones.

2.9. Histopathological findings

The specimen was received as two fragments of whitish-brown skin tissue of firm and elastic consistency, measuring 2.7 × 2.5 × 1 cm in aggregate, with a whitish-brown cut surface, and was submitted in two cassettes with no residual tissue. Microscopic examination showed skin comprising epidermis, dermis and a small portion of subcutaneous tissue. The epidermis was lined by keratinised stratified squamous epithelium showing hyperkeratosis, acanthosis and papillomatosis with flat vertical peaks, together with focal hypergranulosis and basal layer hyperpigmentation. Several vacuolated cells were observed within the granular and spinous layers. The dermis contained adnexal structures and showed mild to moderate inflammatory infiltrates composed predominantly of lymphocytes and plasma cells, distributed mainly in periadnexal and perivascular locations. Figure 5A shows the characteristic architecture at low power, with church-spire papillomatosis, compact orthokeratotic hyperkeratosis and regular acanthosis of the rete ridges above a sparse superficial dermal infiltrate. Figure 5B shows an adjacent field at higher power in which the papillomatous epidermis is seen in continuity with a preserved pilosebaceous unit, and in which the granular layer is thickened focally. The reported conclusion was that the microscopic features of the skin biopsy from the right earlobe were consistent with and supportive of verrucous epidermal naevus. No cytological atypia, no dysplasia and no evidence of secondary neoplasia were identified in either fragment, and the deep and lateral margins were free of lesional epidermis.

Table 2. Operative record, specimen dimensions and peri-operative pharmacotherapy, reproduced from the operative note, the histopathology report and the ward record. Day numbering is relative to the day of excision (day 0).

Parameter	Recorded value
Timing and setting	
Referral to the skin surgery division	15 October 2025 (day −12)
Pre-operative evaluation completed	17 October 2025 (day −10)
Definitive procedure	27 October 2025 (day 0)
Age at operation	3 years
Lesion and defect	
Clinical dimensions of the plaque before excision	7 × 0.75 × 0.1 cm, right earlobe to right lateral neck
Distribution	Blaschko-linear, unilateral, right side
Dermatoscope and magnification	DermLite 4, polarised; ×10 for screening and ×40 for detailed examination
Anaesthesia and haemostasis	
Anaesthetic technique	General anaesthesia, supine, head turned to the left
Local adjunct	Tumescent infiltration containing adrenaline before incision[31]
Reconstruction	
Excision	Full-thickness, periauricular extending onto the right lateral neck
Flap	Earlobe-based transposition flap, one stage, donor limb in periauricular and postauricular skin
Cervical defect	Primary closure
Number of operative stages	1
Specimen and histopathology	
Auricular specimen	3.5 × 0.8 cm
Cervical specimen	7 × 0.3 cm
Macroscopic description of the received specimen	Two fragments of whitish-brown skin, firm and elastic, 2.7 × 2.5 × 1 cm in aggregate, submitted in two cassettes with no residual tissue
Microscopic findings	Hyperkeratosis, acanthosis, papillomatosis with flat vertical peaks, focal hypergranulosis, basal hyperpigmentation, vacuolated cells in the granular and spinous layers; periadnexal and perivascular lymphoplasmacytic infiltrate
Margins	Free of lesional epidermis; no atypia, dysplasia or secondary neoplasia
Peri-operative pharmacotherapy	
Ampicillin–sulbactam	650 mg intravenously every 8 hours
Ketorolac	15 mg intravenously once daily
Paracetamol	250 mg orally every 8 hours
Fusidic acid ointment	2% applied topically to the suture line postoperatively
Outcome milestones	
Day 0	Flap pink and well perfused; no venous congestion, pallor or haematoma
Day +29 (25 November 2025)	Sutures removed; no erythema, oedema, discharge, dehiscence or flap necrosis; flap fully viable
Day +73 (8 January 2026)	Hypertrophic scar along the cervical limb of the closure; no recurrence of the verrucous plaque; scar revision planned

Notes: *The single adverse outcome is the hypertrophic scar recorded at day +73.*

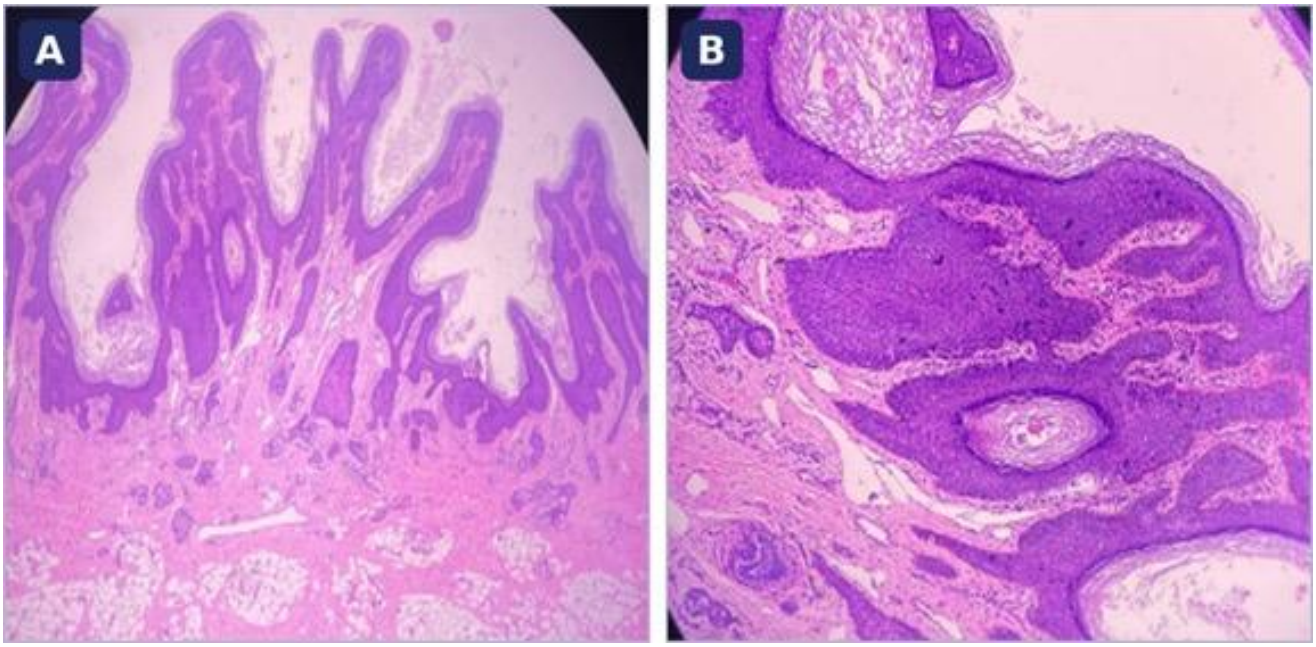

Figure 5. Histopathology of the excised specimen (haematoxylin and eosin). *(A)* Low power view showing church-spire papillomatosis with compact orthokeratotic hyperkeratosis and regular acanthosis of the rete ridges, above a sparse superficial dermal infiltrate. *(B)* Adjacent field at higher power in which the papillomatous epidermis is seen in continuity with a preserved pilosebaceous unit and the granular layer is focally thickened. No cytological atypia, dysplasia or secondary neoplasia was identified in either fragment. The panels are reproduced at the native resolution of the images supplied with the histopathology report, at which the vacuolated granular and spinous cells described in that report are not resolvable; that finding is reported from the pathologist's description and is not demonstrated in these panels.

2.10. Postoperative course and follow-up

The immediate postoperative appearance is shown in Figure 6A, taken on the day of surgery, in which the transposed flap is seen inset along the earlobe and postauricular sulcus with an interrupted suture line running from the auricular defect down onto the lateral neck; the flap was pink and well perfused, with no venous congestion, no pallor and no haematoma. As the green card in Figure 1 records, the child was reviewed on 25 November 2025, postoperative day 29. He reported no pain in the surgical area, was comfortable and had no other complaint. General condition was described as mild illness with full consciousness and cooperation, and general physical examination was within normal limits. All sutures were removed at that visit. The excision site showed no erythema, no oedema and no purulent discharge, and there was no dehiscence and no flap necrosis; the flap was fully viable with a colour and texture match that was already close to the surrounding skin. Figure 6B shows the healed field at that visit, with a fine linear scar running from the earlobe onto the neck and with the auricular contour preserved.

The child was reviewed again on 8 January 2026, postoperative day 73. He again reported no pain and no other complaint, and general examination remained normal. At this visit the excision site showed a hypertrophic scar, most evident along the cervical limb of the closure, without erythema, oedema or discharge. There was no clinical recurrence of the verrucous plaque at the excision site or at its margins; seventy-three days is, however, far too short an interval to exclude recurrence after excision of a keratinocytic naevus, and this observation describes the state of the wound rather than a durable outcome. Day numbering throughout this report counts elapsed days from the day of excision, which is why the visit recorded in the clinical notes as postoperative day 30 appears here as day 29. Figure 6C shows the operated right auricular and periauricular region at this visit, in which the raised, pale, slightly irregular scar can be followed along the neck while the earlobe itself retains its contour, and Figure 6D shows the unoperated left ear photographed in the same session for direct comparison, demonstrating that auricular height, projection and lobular shape are symmetrical between the two sides. A scar revision was planned, and long-term dermatological follow-up was continued.

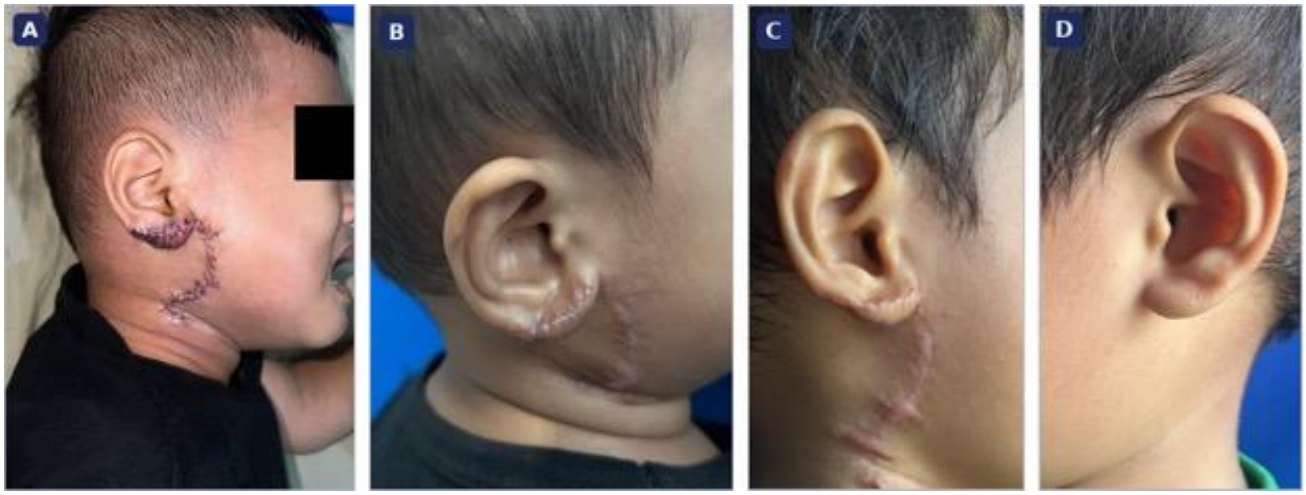

Figure 6. Postoperative course. *(A)* Day 0, immediately after inset: the transposed flap lies along the earlobe and postauricular sulcus with an interrupted suture line running from the auricular defect onto the lateral neck; the flap is pink and well perfused, with no venous congestion, pallor or haematoma. *(B)* Day +29, at suture removal: a fine linear scar runs from the earlobe onto the neck and the auricular contour is preserved, with no erythema, oedema, discharge, dehiscence or necrosis. *(C)* Day +73, operated right auricular and periauricular region: a raised, pale, slightly irregular hypertrophic scar is visible along the cervical limb of the closure while the earlobe retains its contour, and there is no recurrence of the verrucous plaque. *(D)* Unoperated left ear photographed in the same session for comparison, showing that auricular height, projection and lobular shape are symmetrical between the two sides. The periorbital region has been redacted in panel A.

2.11. Prognosis

Read against the eight milestones set out in Figure 1, the prognosis was recorded at discharge in the four-quadrant format used locally: *quo ad vitam* bonam, *quo ad sanationam* dubia ad bonam, *quo ad functionam* dubia ad bonam and *quo ad cosmeticam* dubia ad bonam. In plain terms, survival was not in question, while complete cure, functional recovery and cosmetic outcome were each judged likely but not certain. The reservation attached to the last three reflects the recognised possibility of recurrence after excision of a keratinocytic naevus, the mobility of the cervical field, and the scar burden that a linear closure in this territory imposes on a growing child.

2.12. Parental perspective

No verbatim statement from the child or the parents was recorded in the clinical notes, and none is therefore reproduced here. What the record does document is that the parents' principal concerns before surgery were the progressive enlargement of the lesion, the intermittent pain that had appeared in the three months before referral, and the visibility of the lesion on the ear and neck; that they accepted the reconstructive plan after counselling; that they complied fully with the twice-weekly dressing schedule; and that at both follow-up visits they reported the child to be comfortable and without complaint. Their remaining concern at the day 73 visit was the appearance of the raised scar on the neck, which is the reason a scar revision was offered.

2.13. Ethical approval and consent

The care described here was routine clinical care delivered in a tertiary dermatology department, and the report was conducted in accordance with the Declaration of Helsinki. Written informed consent for publication of the clinical details and photographs was obtained from the child's parents on the journal's Patient Consent for Publication form. All facial photographs reproduced in this article have been redacted across the periorbital region, and no name, date of birth, medical record number or other identifier appears in any image or in the text.

3. Discussion

3.1. Establishing the diagnosis at the bedside

The diagnosis of verrucous epidermal naevus in this child rested on four converging observations, each of which is worth stating separately because each carries independent weight. The lesion was present at birth, which places it among the congenital mosaic disorders rather than among acquired keratotic lesions. It followed the lines of Blaschko, which is the clinical fingerprint of post-zygotic mosaicism and which no acquired condition reproduces faithfully. Its surface was composed of coalescent brown papillomatous papules without scale, erythema or excoriation, which is the morphology expected of a keratinocytic rather than an inflammatory or melanocytic proliferation. And it had thickened progressively rather than waxing and waning, which is the natural history of a hamartoma whose cells continue to divide in step with the surrounding epidermis. The retrospective study of twenty-two Chinese patients with keratinocytic epidermal naevus provides the most useful recent frame of reference for this constellation, both because it confirms that the clinical phenotype is broad and because it shows that molecular confirmation, where it is available, tends to follow rather than lead the clinical

diagnosis.[1] Published single-patient descriptions reinforce that breadth: a case series of five patients with verrucous epidermal naevus documented presentations unusual enough to be reported in their own right,[32] a recent clinical image records the classical appearance,[33] a hemiscrotal lesion in a child extends the recognised distribution well beyond the head and neck,[34] and comedo-like lesions have been observed developing within an established verrucous epidermal naevus.[35] Our patient sits comfortably within this described spectrum while occupying a site — the earlobe with cervical extension — that is under-represented in it.

3.2. The contribution of dermoscopy

Dermoscopy is easy to underuse in a lesion that already looks characteristic, and in this child it did two things that inspection alone could not. It excluded a melanocytic proliferation, because no pigment network, no globules and no atypical vascular pattern were present; and it demonstrated positively the cobblestone arrangement of well-demarcated verrucous and papillomatous structures with brown to bluish-grey pigmentation that corresponds histologically to papillomatosis, hyperkeratosis and acanthosis, as illustrated in Figure 2C. The most directly applicable published evidence available to us, although it is a single study rather than a body of work, is a retrospective diagnostic study of one hundred and twenty-one pathologically confirmed cases of common verrucous proliferative skin diseases examined by dermoscopy and reflectance confocal microscopy, which characterised precisely the features that separate this group of lesions from one another at the bedside.[25] A paediatric report of naevo-blaschkoid seborrhoeic keratosis is a useful reminder that a blaschkoid keratotic plaque in a child is not automatically an epidermal naevus and that dermoscopic and histological correlation is what settles the question.[36] In our patient the dermoscopic findings raised diagnostic confidence sufficiently to justify proceeding directly to definitive excision under general anaesthesia rather than performing a preliminary incisional biopsy in a 3-year-old, which would have required a separate anaesthetic and would have delayed treatment without changing it.

3.3. Excluding inflammatory linear verrucous epidermal naevus

Verrucous epidermal naevus and inflammatory linear verrucous epidermal naevus are neighbours on the keratinocytic naevus spectrum and share the blaschkoid distribution and the early onset, but they diverge in the features that matter clinically. Pruritus is the discriminator on which most clinicians rely, and its complete absence over three years in this child was the single most important negative finding. The evidence base for that distinction has strengthened considerably. Inflammatory linear verrucous epidermal naevus is now understood as a spectrum of inflammatory mosaic disorders rather than as a single entity, and a paediatric case in which the differential lay specifically between linear psoriasis and inflammatory linear verrucous epidermal naevus illustrates how narrow that distinction can become at the bedside.[22] A comparative study combining clinical characterisation with lesional proteomics identified objective differences between inflammatory linear verrucous epidermal naevus and its mimics, moving the distinction beyond the purely descriptive.[23] The dermatoscopic and reflectance confocal microscopy features of widespread inflammatory linear verrucous epidermal naevus have been described in detail and include the erythema and scaling that our patient conspicuously lacked.[24] Most decisively, whole-exome sequencing of lesional tissue has identified a post-zygotic gain-of-function variant in *TRPM4* in inflammatory linear verrucous epidermal naevus, establishing that the two conditions are genetically as well as clinically distinct.[2] A recent clinical image of inflammatory linear verrucous epidermal naevus shows at a glance the inflammatory morphology that our patient did not have.[37] Taken together, and as summarised feature by feature in Table 1, the absence of pruritus, the absence of erythema and scale, the absence of a psoriasiform histological pattern and the presence instead of a bland papillomatous epidermis made inflammatory linear verrucous epidermal naevus untenable in this child.

3.4. Excluding epidermal naevus syndrome

The second differential is more consequential, because an epidermal naevus syndrome commits the child to systematic surveillance rather than to a single operation. The syndromes are defined by the coexistence of epidermal naevi with extracutaneous abnormalities, and the reported associations span several organ systems. Ocular involvement is well documented: a series of thirteen patients described the ophthalmological manifestations of organoid naevus syndrome in detail.[26] Central nervous system involvement can be severe, as an autopsy case of linear naevus sebaceous syndrome with a *KRAS* G12D mutation demonstrates,[30] and the association of Schimmelpenning syndrome with a high-grade astrocytoma illustrates the worst-case neurological outcome.[27] The skeletal arm of the spectrum is represented by cutaneous–skeletal hypophosphataemia syndrome, for which targeted treatment is now available.[28] *HRAS*-related epidermal naevus syndromes broaden the phenotype further.[4] Against this background our patient had a solitary lesion of limited extent, normal growth and development, a normal systemic examination, normal laboratory indices and a normal chest radiograph, and no ocular, skeletal or neurological abnormality on assessment. The one feature that required explicit thought was the history of febrile seizure. Paediatric neurology characterised it as a simple febrile seizure requiring observation only, with no focal deficit, no developmental concern and no indication for imaging. That judgement is supported by the best available paediatric evidence on when to investigate mosaic skin disease neurologically: a retrospective cohort study of children with pigmentary mosaicism found low rates of neurological abnormality overall and argued against reflexive neuroimaging in the absence of clinical indications.[29] We therefore concluded that this child has an isolated verrucous

epidermal naevus rather than an epidermal naevus syndrome, while noting that the conclusion is clinical rather than molecular and that continued developmental surveillance remains appropriate.

3.5. A histological detail with implications beyond this patient

One finding in this specimen deserves more attention than the pathology report gave it. Alongside the expected hyperkeratosis, acanthosis and papillomatosis shown in Figure 5A, and the focal hypergranulosis visible in Figure 5B, the microscopic description records several vacuolated cells within the granular and spinous layers. The limitation must be stated before the inference. A fully developed epidermolytic pattern comprises perinuclear vacuolisation, coarse and irregular keratohyalin granules, indistinct cellular boundaries and compact hyperkeratosis; what this specimen shows is several vacuolated cells together with focal hypergranulosis. Those changes are suggestive of that pattern rather than diagnostic of it, and the report describes neither the granular abnormality nor the cellular boundary change that would complete it. With that stated, the observation still merits attention, because vacuolar change at these two levels of the epidermis, accompanied by hypergranulosis, is the histological hallmark of epidermolytic hyperkeratosis, and a keratinocytic naevus in which the full pattern is present is classified as an epidermolytic epidermal naevus. That distinction is not academic. Epidermolytic epidermal naevi arise from post-zygotic mutations in the suprabasal keratin genes *KRT1* and *KRT10*; a genital epidermolytic epidermal naevus caused by a mosaic *KRT10* mutation has been reported,[38] a child with an epidermolytic verrucous epidermal naevus has been described in whom hypopigmented lesions were admixed with verrucous papules,[39] and naevoid follicular epidermolytic hyperkeratosis has been documented within a blaschkoid epidermal naevus.[40] The clinical consequence follows from where in the embryo the mutation occurred. If the mutant clone extends into the gonad, the affected individual can transmit the mutation in the germ line, and the offspring will inherit it in every cell — producing not a localised naevus but generalised epidermolytic ichthyosis. This is not a theoretical risk. Epidermolytic ichthyosis has been reported in a child arising from parental cutaneous–gonadal *KRT10* mosaicism, and the authors framed their report explicitly as a call for prospective genetic diagnosis in such families.[41] The burden that the generalised disease imposes is substantial, as a large German cohort of patients with epidermolytic ichthyosis has quantified across the clinical spectrum.[42] We did not perform lesional genotyping in this child, and neither the histological description nor any other datum in this record permits us to state that this is an epidermolytic epidermal naevus rather than a conventional verrucous epidermal naevus with focal incidental vacuolar change; the possibility is advanced here as a hypothesis with a defined clinical action attached, not as a diagnosis. What we can state, and what we believe merits emphasis for readers managing similar patients, is that the histological finding of suprabasal vacuolation in a keratinocytic naevus should prompt a request for keratin gene sequencing on lesional tissue and, if a *KRT1* or *KRT10* variant is identified, referral for genetic counselling about reproductive risk long before the patient reaches reproductive age. In our patient this recommendation has been added to the follow-up plan.

3.6. Why definitive excision rather than an ablative or topical alternative

The therapeutic choice in this child was between removing the mutant clone and reducing the visible surface. Both are legitimate goals and the published evidence supports both, but they are not equivalent. The non-surgical options are real: a verrucous epidermal naevus has been flattened effectively with topical flumethasone–salicylic acid,[5] a pruritic facial lesion has responded to photodynamic therapy,[6] and ablative laser has been used for a systematised epidermal naevus.[7] Each of these achieves cosmetic improvement without removing the abnormal keratinocyte clone, and each therefore accepts the possibility of regrowth. Full-thickness excision, by contrast, removes the clone and yields a specimen: a recent case report and literature review of a verrucous epidermal naevus treated by full-thickness skin excision makes precisely this argument.[8] In a preschool child with a lesion that was thickening progressively, that had become painful, and that occupied two visible aesthetic units, we judged that definitive removal in a single anaesthetic was preferable to a course of repeated ablative sessions, each of which would itself have required sedation or anaesthesia in a child of this age. The retrospective experience of nine hundred and forty-six children undergoing naevus surgery in a dermatological surgery centre supports the feasibility and the safety of that approach in this age group and documents the histopathological yield that justifies submitting the specimen.[9] The oncological argument, as noted in the Introduction, is supportive rather than decisive: basal cell carcinoma arising from an epidermal naevus,[10] secondary malignancy within naevus sebaceus,[11] and neoplasia complicating inflammatory linear verrucous epidermal naevus[12] are each uncommon, but they are sufficient reason to insist that whatever is removed is examined.

3.7. The reconstructive decision

Having decided to excise, the question became how to close a defect that crossed from the earlobe onto the mobile lateral neck. Table 3 sets out the options that were considered, the published evidence for each and the reason each was accepted or rejected in this particular child.

Table 3. Reconstructive options considered for a full-thickness defect crossing the right earlobe and the right lateral neck in a 3-year-old child, the published evidence for each and the reason each was accepted or rejected.

Option	Tissue match and contour	Stages / anaesthetics	Published evidence	Decision in this patient
Healing by secondary intention	Poor; heals by contracture, which deforms a free lobular margin	0 further	No supporting evidence for a free auricular margin in a child	Rejected: predictable lobular notching and cervical banding
Primary linear closure alone	Excellent where tissue is available, but the earlobe has no reserve	1	Standard technique; not applicable across a free margin	Rejected for the auricular component; used for the cervical defect
Full-thickness skin graft	Colour and texture mismatch, contour depression, late depigmentation and contraction	1, plus a donor-site wound	Local flaps outperform grafts on function and aesthetics after facial tumour excision[19,20]	Rejected: second wound, risk of partial take on a mobile bed, inferior contour
Serial excision	Good final scar, but the intermediate result is visible for months	2–3, each under general anaesthesia	Established for large congenital naevi, not required for a defect of this width	Rejected: repeated anaesthetics unjustified in a preschool child
Earlobe-based transposition flap	**Closest tissue match of the options considered; like-for-like skin, preserved lobular contour, donor scar hidden postauricularly**	**1**	**Single-stage transposition flaps for conchal, antitragal and lobular defects;[13] inferior pedicle and full-thickness earlobe designs;[16–18] paediatric transposition flaps for large facial defects[21]**	**Chosen: one anaesthetic, no donor-site wound, contour preserved (Figure 4D–F)**
Postauricular island or pull-through flap	Excellent colour match; requires a wider postauricular dissection	1	Posterior pull-through flap for anterior ear reconstruction;[14] chondrocutaneous conchal transposition flap[15]	Held in reserve: unnecessary once the transposition design covered both units

Notes: *No head-to-head comparative data exist for flap versus graft reconstruction of a periauricular defect in a preschool child; the comparative citations in this table concern adult facial reconstruction after tumour excision.*

As Table 3 shows, primary linear closure alone was not feasible across the earlobe without distorting the lobular contour, secondary intention would have healed by contracture in precisely the direction that deforms an earlobe, and serial excision would have required repeated anaesthetics in a preschool child. The realistic choice therefore lay between a full-thickness skin graft and a local flap. The comparative literature favours the flap where contour and colour match matter: a cohort study of reconstruction after non-melanoma skin cancer excision found better functional and aesthetic outcomes with local flaps than with grafts,[19] and a comparison of local flaps against skin grafts in a small contour-critical facial region reached the same conclusion.[20] A graft would also have required a second wound at a donor site, would have carried a risk of partial take on a mobile bed, and would predictably have contracted and depigmented relative to the surrounding skin; those are the three objections recorded against that option in Table 3, whose footnote also states plainly that no head-to-head comparative data exist for this indication in a child of this age.

Within the family of local flaps, and as the final two rows of Table 3 set out, the earlobe-based transposition design used here has direct precedent. Single-stage transposition flap reconstruction has been described for defects of the concha cavum, incisura, antitragus, antihelix and lobule.[13] The posterior pull-through flap has been used for anterior ear reconstruction,[14] and the chondrocutaneous conchal transposition flap has been revived for auricular reconstruction.[15] For the earlobe specifically, an inferior pedicle flap design,[16] a full-thickness earlobe defect reconstruction[17] and a further earlobe defect reconstruction[18] have each been reported. The paediatric evidence is thinner, but the vertical transposition flap has been applied successfully to large facial soft-tissue defects in children.[21] The technical principles that emerge consistently from these reports are the ones we applied, and they can be read directly off the pre-operative marking in Figure 3A: design the donor limb where the scar will be concealed, orientate the closure along the relaxed skin tension lines wherever the geometry permits, undermine widely enough that the flap sits without tension, and inset the tip first so that the least well-perfused part of the flap is placed under the least tension. The angle between the marked transposition arc in Figure 3A and the long axis of the cervical component of the plaque in Figure 3B is the geometric compromise that this lesion imposed, and it is the same compromise that produced the scar discussed below. The published rate of surgical site complications and unplanned reoperation after flap reconstruction in a national multi-institutional analysis provides the benchmark against which our uncomplicated course should be read.[43]

3.8. Tumescent infiltration as an adjunct

The use of a tumescent solution containing adrenaline before incision deserves comment because its role is often assumed rather than argued. In this field it does three things: it produces hydrodissection that opens the subcutaneous plane and makes flap elevation both faster and safer around the delicate vascular pedicle of the earlobe; it produces vasoconstriction that reduces intraoperative bleeding and improves visualisation in a small, deep, mobile field; and by

reducing bleeding it lowers the risk of the postoperative haematoma that is the commonest early cause of flap failure in this territory. The most directly relevant published evidence is a study of tumescent local anaesthesia for the surgical therapy of congenital naevi in the first year of life, which demonstrated that the technique is applicable to naevus surgery in very young children.[31] As recorded in Table 2, in our patient it was used as an adjunct to general anaesthesia rather than as a substitute for it, and the flap remained pink and well perfused throughout, with no haematoma and no venous congestion at any point.

3.9. The hypertrophic scar, and what it tells us

The single adverse outcome in this case was a hypertrophic scar confined to the cervical limb of the closure, evident at postoperative day 73 as shown in Figure 6C, at a time when the auricular limb of the same closure remained flat. That distribution is informative rather than incidental. The lateral neck is a mobile field subject to repeated stretch with every movement of the head, and its relaxed skin tension lines run obliquely, so a closure that follows the line of the excised lesion inevitably crosses them to some degree. A large series examining whether the position and orientation of facial scars matter concluded that both do,[44] and the same point applies from the planning side: where a lesion's axis and the local tension lines conflict, the tension lines should prevail wherever the anatomy allows. In this child the shape of the lesion, not the surgeon's preference, dictated the axis of the cervical closure, and the hypertrophic response followed. That attribution is an inference from the regional anatomy and from the distribution of the scar, which spared the auricular limb of the same closure, and not a measured observation: the pre-operative marking shown in Figure 3A did not include tension-line marking, and no angle between the closure and the local tension lines was recorded. A retrospective cohort used to develop and validate a risk assessment model for post-surgical scar formation in paediatric melanocytic naevus surgery identifies the variables that predict this outcome and is directly transferable to naevus surgery of other types.[45] The consequences are not merely cosmetic: eye-tracking work has quantified how noticeable different characteristics of paediatric facial scars are to observers, which is the objective counterpart of the parents' concern at the day 73 visit.[46]

Management options for this scar are supported by paediatric-specific evidence. Tangential excision combined with intralesional injection and laser-assisted drug delivery has been reported as a paediatric scar management strategy,[47] and a prospectively randomised split-scar trial of fractional carbon dioxide laser for paediatric hypertrophic scars, although terminated prematurely, provides the most rigorous available data on that modality.[48] The revision offered to this family will therefore be planned around re-orientation of the cervical limb of the scar rather than simple re-excision along the existing axis, with adjunctive intralesional therapy as required. It is worth stating plainly that the appearance of a hypertrophic scar at day 73 does not represent a failure of the reconstruction: the flap survived completely, the auricular contour was preserved, the lesion was cleared, and the scar is a treatable sequel of closing a mobile field.

3.10. Novelty, strengths and limitations

The novelty of this report is the combination rather than any single element: a congenital verrucous epidermal naevus spanning two aesthetic units in a preschool child, removed by full-thickness excision with a specimen, reconstructed in one stage with an earlobe-based transposition flap, and documented with paired clinical and dermoscopic imaging, a six-panel operative sequence, histopathological correlation and follow-up to day 73. To place that claim on a defensible footing we searched PubMed for combinations of the terms verrucous epidermal naevus, keratinocytic epidermal naevus, earlobe, auricular, periauricular, transposition flap and paediatric, and found reports of each element separately but none that combined a congenital keratinocytic naevus of the earlobe and lateral neck with a one-stage earlobe-based transposition flap in a child of this age. The second contribution is the observation about suprabasal vacuolation and its counselling implication, which we believe is under-recognised in the surgical literature on these lesions.

The limitations are equally clear and should temper the conclusions. First, no molecular analysis was performed, so the driver mutation is unknown and the question of whether this is an epidermolytic epidermal naevus remains open; the recommendation for keratin gene sequencing is therefore prospective advice rather than a completed investigation. Second, follow-up extends only to postoperative day 73. Recurrence after excision of a keratinocytic naevus, when it occurs, is usually recognised over months to years rather than weeks, so the absence of recurrence at this point is reassuring but not conclusive, and the hypertrophic scar has not yet been treated or followed to its endpoint. Third, no validated instrument was used to score either the scar or the family's satisfaction; the assessments reported here are clinical and photographic. The Patient and Observer Scar Assessment Scale will be applied at the revision consultation and at subsequent visits so that later reports of this technique carry a comparable endpoint. Fourth, no histological measurement of the excision margin in millimetres was recorded, so the completeness of excision is supported by the pathologist's statement that the margins were free of lesional epidermis rather than by a measured clearance. Fifth, the pre-operative laboratory panel was reported as within normal limits without numerical values in the source record, so individual analyte concentrations cannot be reproduced here and are deliberately not tabulated. Finally, this is a single patient, and no inference about comparative effectiveness between flap and graft reconstruction in this territory can be drawn from it; the comparative claims in this discussion rest on the cited cohort studies, not on our own data.

4. Conclusion

Verrucous epidermal naevus is a benign congenital keratinocytic hamartoma that arises from post-zygotic somatic mutation and follows the lines of Blaschko, and it does not resolve spontaneously because the abnormality resides in the basal keratinocyte rather than in the hyperkeratotic surface. This report describes a localised verrucous epidermal naevus measuring 7 × 0.75 × 0.1 cm that spanned the right earlobe and the right lateral neck of a 3-year-old boy, an anatomically complex and cosmetically exposed territory in which the reconstructive problem is out of proportion to the size of the defect. The diagnosis was established clinically from the congenital onset, the blaschkoid distribution and the verrucous morphology, was supported by dermoscopic findings of cobblestone papillomatous structures with brown to bluish-grey pigmentation and no melanocytic network, and was confirmed histopathologically by hyperkeratosis, acanthosis and papillomatosis with focal hypergranulosis. Inflammatory linear verrucous epidermal naevus was excluded by the complete absence of pruritus and inflammation over three years, and epidermal naevus syndrome by a solitary lesion, normal development and a normal systemic and neurological assessment.

Full-thickness excision with immediate one-stage reconstruction using an earlobe-based transposition flap achieved complete clearance, delivered a specimen for histopathological confirmation, preserved auricular contour and symmetry, and avoided both a donor-site wound and the repeated anaesthetics that serial excision or staged ablation would have required. Healing was uneventful and the flap remained fully viable, but a hypertrophic scar developed along the cervical limb of the closure by postoperative day 73 and required a planned revision, which underlines that in this territory the mobility of the neck, and not the survival of the flap, is the factor that governs the final aesthetic result.

Two points deserve emphasis for clinicians managing similar patients. The first is that a keratinocytic naevus crossing the auricular and cervical units can be treated definitively in a single stage in a preschool child, and that the reconstructive plan should be drawn around the relaxed skin tension lines of the neck rather than around the outline of the lesion wherever the geometry permits. The second is that suprabasal vacuolation reported in the histology of a keratinocytic naevus should not be dismissed as an incidental finding: it raises the possibility of an epidermolytic epidermal naevus driven by mosaic keratin gene mutation, and if confirmed by lesional sequencing it carries a reproductive counselling implication for the patient that extends well beyond the operation performed in childhood. Long-term dermatological follow-up remains essential to detect recurrence, to manage the scar and to revisit that counselling question as the child grows.

Declarations

Ethical Approval. This report describes routine clinical care delivered in the Oncology and Skin Surgery Division of the Department of Dermatology, Venereology and Aesthetics, and was conducted in accordance with the Declaration of Helsinki. In accordance with institutional policy, single-patient reports of routine care that contain no identifying information are exempt from full ethics committee review; the report was reviewed and approved by the head of department before submission. Written informed consent for the publication of the clinical details and photographs was obtained from the child's parents on the SJDV Patient Consent for Publication form. Every facial photograph reproduced in this article has been redacted across the periorbital region, and no name, date of birth, medical record number or other identifier appears in any image or in the text. The report was prepared in accordance with the CARE (CAse REport) guideline and the completed checklist accompanies this submission.

Conflict of Interest. The authors declare no conflict of interest. No author has any financial or proprietary interest in 3Gen Inc. or in any other manufacturer named in this report; products are named for reproducibility only and their mention does not constitute an endorsement.

Funding. This case report received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Author Contributions. *RA*: conceptualization, investigation, data curation, visualization, writing – original draft. *EA*: supervision, methodology, validation, writing – review and editing. *IIS*: formal analysis, validation, writing – review and editing. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

Data Availability. All data generated or analysed during this case are included in this published article, principally in Table 1, Table 2 and Table 3 and in Figures 1 to 6. The underlying clinical photographs, operative note and histopathology report are held in the patient's clinical record and are available from the corresponding author on reasonable request, subject to the removal of identifying information and to parental consent.

Use of Artificial Intelligence. No clinical image was generated, synthesised or enhanced by artificial intelligence, and no image content was altered other than by cropping, scaling, panel labelling and the addition of opaque redaction bars. All clinical data, all interpretation and all conclusions are the authors' own; the authors reviewed and verified every statement and every reference and take full responsibility for the content of the article.

Acknowledgements. The authors thank the patient and his parents for permitting publication of this report, and the operating theatre, anaesthetic and histopathology staff who contributed to the care described.

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