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Dear Doctor,

Greetings from Micro Labs. We are happy to bring you "COSMODERMA TIMES" which contains latest and interesting news in the field of Dermatology.

This issue contains:

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Looking forward to your valuable feedback.

Best Regards,

Medical Team, Micro Labs Limited.

Cosmetic Eyebrow Tattoo Removal Using a Picosecond Laser

Introduction:

Over the past several years, there has been an enormous rise in the usage of permanent and semi-permanent eyebrow makeup. It was originated in the United States more than 20 years ago and is now extensively used globally.[1] These include eyebrow shaping, eyeliner, hairline tattooing, areola tattooing post-mastectomy, and lip lining and colouring.[2] There are several ways to treat tattoos, but some of them have substantial disadvantages since they target pigmented tissues rather than the tattoo pigments. Therefore, treatments including dermabrasion (skin resurfacing), chemical removal using caustic agents (such as lactic acid, salicylic acid, and phenol), or the use of electromagnetic waves are linked to side effects like scarring and definitive dyschromia. The gold standard for tattoo removal is laser therapy. Cosmetic eyebrow tattoos can be removed effectively and tolerably using neodymium-doped Yttrium aluminium garnet lasers (1064 nm) and nanosecond (NS) Q-Switched Alexandrite (755 nm) lasers. Recently, picosecond (PS) lasers have become a viable tattoo removal method.[1] This study aimed to examine the effectiveness and safety of a 755/532 nm picosecond laser for the removal of tattoos on the eyebrows.

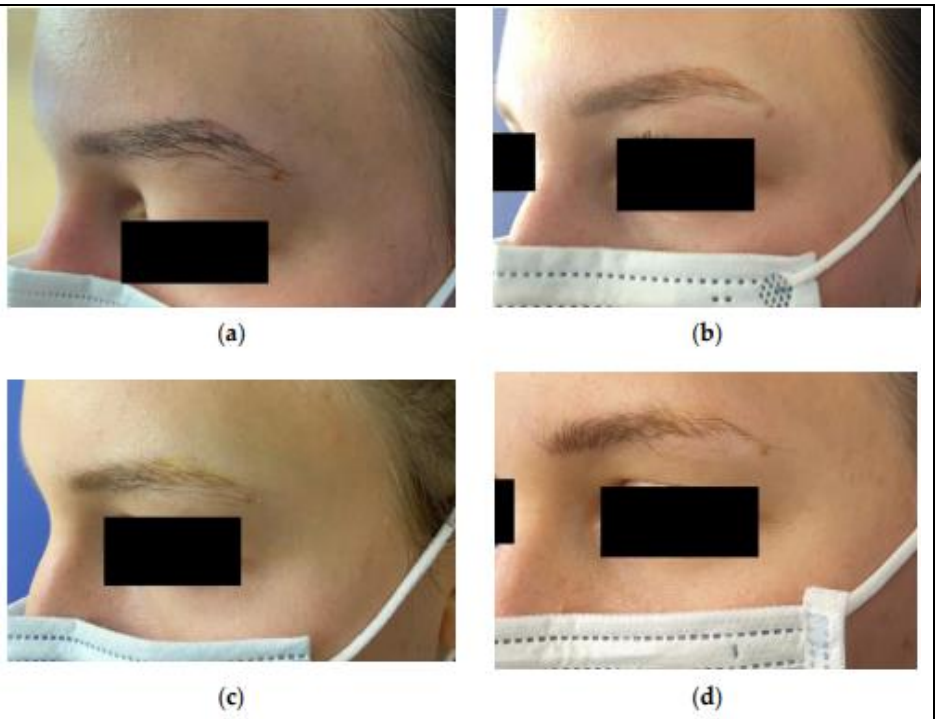

Figure 1. Removal of cosmetic eyebrow tattoos made with a Phibrows ink containing black carbon, orange, and yellow organic pigments: (a) before treatment; (b) after the first laser session, the black pigment was eliminated leading to an orange color; (c) after the second laser session, only the yellow pigment is remaining; (d) after 5 sessions.

Methods:

This retrospective study comprised of 98 patients who visited a healthcare centre for laser treatment of cosmetic tattoos on their eyebrows. During the appointment, detailed information on eyebrow cosmetic tattoos was gathered, such as the types of cosmetic tattoos, when the first and final touch ups were performed, and the presence of red, yellow, or white pigments. Following each laser treatment, a visual evaluation was performed to report any grey discolouration. Patients were treated with a picosecond laser at 755 nm at fluences ranging from 0.69 to 6.37 J/cm2 or at 532 nm at fluences ranging from 0.64 to 1.12 J/cm2. Analysis of Variance (ANOVA, single factor) and comparison tests (F-test) were performed.

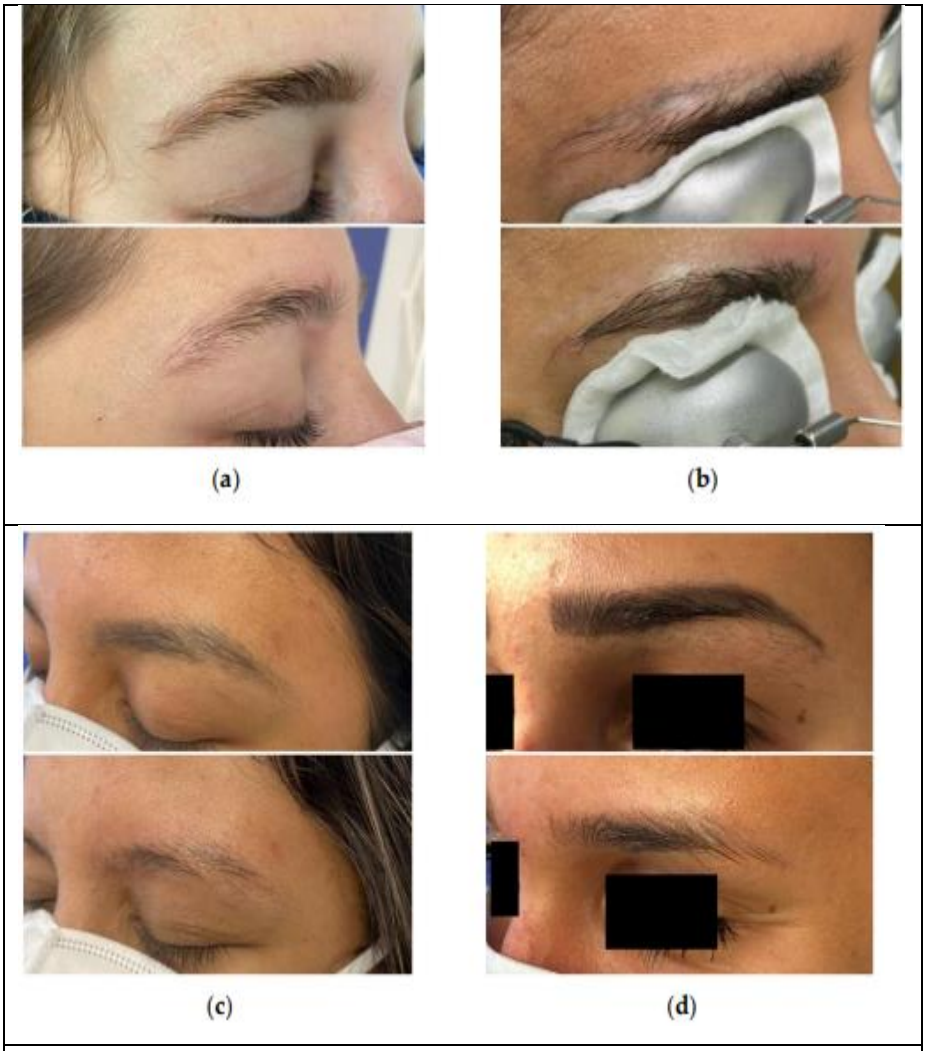

Figure 2. Picosecond laser removal of cosmetic brow tattoos: (a) An aged orange tattoo was erased in three sessions; (b) The patient had hypopigmentation after acid-based therapies. The leftover black pigment was removed in three laser sessions; (c)the black tattoo in one session; and(d) the brow tattoo with black and red colours in six sessions.

Results:

Overall,70 patients completed the entire therapy. In order to meet the patients' goals (complete eradication, attenuation for redo, or correction), an average of three laser treatments was required. The number of sessions increased dramatically when cosmetic tattoos had visible warm colours (red, orange, and yellow). A total of 18 patients exhibited acute grey discolouration, although this was not determined to have a significant impact on the number of laser sessions. Redness, swelling, and bleeding sites were the predominant adverse effects. After receiving laser treatments, one patient instantly developed a bruise.

Discussion:

Laser sessions were completed successfully using 755/532 nm picosecond lasers. For 34% of patients, the wavelength of 532 nm was chosen when red, orange, or yellow pigments did not react at 755 nm. To meet patient objectives, an average of three laser treatments was required [1], which is in consistent with prior work described by Moustafa et al. where four brown and black brow tattoos were cleared 75% to 100% after 1 to 3 sessions with a 1064/532 nm picosecond laser.[3] Furthermore, Hartman et al. demonstrated that cosmetic tattoo removal requires an average of three treatments to get good results.[4]

Conclusion:

The author has demonstrated that complicated cosmetic tattoos may be effectively and safely removed using picosecond laser technology. Assessing the best criteria for processing red and white pigments is still under research.

This study revealed that utilising picosecond laser technology successfully and safely erase complex cosmetic tattoos.

Reference:

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2. Moustafa F, Suggs A, Hamill SS, Friedman PM. Successful treatment of cosmetic eyebrow tattoos in Fitzpatrick III-IV with picosecond (1,064, 532-nm) neodymium-doped yttrium aluminum garnet laser with a perfluorodecalin-infused patch: A pilot study. Lasers in surgery and medicine. 2020 Sep;52(7):586-9.
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Clinical-Pathological Correlation of Novel Dermoscopic Patterns for "Featureless Melanoma"

Introduction:

Melanoma is one of the most aggressive types of malignant skin cancer, caused by altered and aberrant neural crest-derived melanocytes that are mostly found in hair follicles and the basal layer of the epidermidis, as well as in the meninges, choroid, and mucosal surfaces. It makes up around 3% of all skin malignancies detected annually.[1] There are various clinical subtypes of melanoma that have different molecular profiles, presentations, and demography. The most prevalent form of cutaneous melanoma is superficial spreading melanoma (SSM), which is more frequent in fair-skinned people. SSM has a low Breslow thickness and often has a favourable prognosis, however this also relies on how quickly it is detected. Dark-skinned races are more prone to develop acral lentiginous melanoma, which develops from the glabrous skin of the palms, soles, and nailbeds. Melanoma can also develop from mucosal or uveal tissue, which is uncommon and unlikely to be caused by sun exposure. Over 50% of individuals with uveal melanoma progress to stage IV illness, which has a very bad prognosis.[2] The ABCDE criteria (Asymmetry, Border, Colour, Diameter, Evolving) only gives 64% accuracy, pointing out the need for further diagnostic techniques. The 7-point checklist score is a useful method for dermoscopy. Melanoma diagnosis can be challenging due of its phenotypic and histological variability.[1] The purpose of the study was to describe the varied dermoscopic characteristics and their histological association in order to enhance the detection of featureless melanoma (scoring 0–2 on the 7-point checklist).

Methods:

All melanomas excised based on clinical and/or dermoscopic findings were included in the study samples. All lesions were photographed using digital dermoscopy at the dermatology department prior to excisional biopsy. This study only included lesions that had been determined to be melanoma and had high-quality dermoscopic pictures. Single dermoscopic and histological characteristics were taken into consideration for lesions with a score of 2 or below and a diagnosis of melanoma (equivalent to dermoscopic featureless melanoma) after clinical and dermoscopic examination of the 7-point checklist score.

Results:

A total of 691 melanomas were retrieved from the database after meeting inclusion criteria. 19 "negative-featureless" melanomas scored between 0 and 2, 194 lesions scored between 3 and 4, and 478 lesions scored between 5 and 10 were found using the 7-point checklist examination. With a score range from 0 to 2, 8t melanomas did not display any positive dermoscopic hint, 3 had a score of 1, and 8 had a total score of 2. The sole positive criterion in the population with a score of 1 was irregular dots and globules (100%). In the population score 2, the unusual network was the most common characteristic (75%), followed by irregular dots and globules (25%).The most common characteristics in the population with a 7-point checklist score of 3 were irregular dots and globules (84%) and abnormal network (72%), followed by irregular diffuse pigmentation (16%), regression pattern (12%), and blue-whitish veil (12%) (Table 1).

Dermoscopic features	Score 3
Atypical network	18 (72%)
Blue-whitish veil	3 (12%)
Atypical vessels	2 (8%)
Irregular diffuse pigmentation (blotches)	4 (16%)
Peripheral streaks and/or pseudopods	1 (4%)
Irregular dots and globules	21 (84%)
Regression pattern	3 (12%)
TOT	25

Table 1. Frequencies of dermoscopic features in lesions with 7-point checklist score 3.

Discussion:

This study included 19 difficult-to-diagnose melanomas in which just dermoscopic assessment could not be used to make a diagnosis. Anamnesis, the ugly duckling signs, the signature naevus concept, and clinical-dermoscopic follow-up are all important aids in improving melanoma sensitivity and specificity. About three-quarters of the melanoma cases with score 2 had a reticular pattern, whereas the other two lesions had globular patterns with extra regression patches and irregular blotches, respectively. This was an in situ melanoma that arose on a compound nevocytic naevus and had an inverted network as an extra characteristic. In the other two cases, prominent skin markings (linear hypopigmented furrows with an intersecting pattern) were discovered.[1] According to Lallas A et al, the last dermoscopic finding can assist distinguish between an early or in situ melanoma and a benign naevus, especially on sun-damaged skin.[3]

Conclusion:

Dermoscopy is still the most accurate means of detecting melanoma. Because of the algorithm's scoring structure and the decreased number of elements to recognise, the 7-point checklist simplifies ideal pattern analysis.

The best method for identifying melanoma is still dermoscopy. Due to the scoring-based methodology and the smaller number of variables to identify, the 7-point checklist offers a simplification of traditional pattern analysis.

Reference:

1. Lampitelli S, Cantisani C, Rega F, Chello C, Farnetani F, Pellacani G. Identification of Novel Dermoscopic Patterns for “Featureless Melanoma”: Clinical-Pathological Correlation. Dermatology Practical & Conceptual. 2023;13(2):e2023080.
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3. Lallas A, Longo C, Manfredini M, et al. Accuracy of Dermoscopic Criteria for the Diagnosis of Melanoma In Situ. JAMA Dermatol. 2018;154(4):414-419.

Efficacy of Narrowband Ultraviolet B Vs Broadband Ultraviolet B in the Treatment of Chronic Pruritus- A Randomised, Single-blind, Non-inferiority Study

Introduction:

Chronic pruritus (CP) or pruritus lasting more than six weeks, has a lifetime frequency of 22% in the general population and affects more than 50% of patients with skin diseases.[1] Chronic pruritus (CP) has a significant negative influence on a patient's quality of life and is a symptom of several aetiologies. The brain is also involved in pruritus, and mapping of a pruritus matrix in healthy volunteers and patients with CP revealed comparable but distinct neural networks for pruritus and pain. The uncertainty over the neurophysiological processes causing CP is one of the causes for the present inadequate therapy of people with CP.[2] UV phototherapy, or treatment with ultraviolet (UV) light, has long been recognised to be useful in the treatment of pruritic skin illnesses such as psoriasis, atopic dermatitis (AD), and mycosis fungoides. Broadband ultraviolet B (BB-UVB) has almost entirely been replaced by narrow-band ultraviolet B (NB-UVB) in phototherapy equipment and private dermatology practises for the treatment of different skin conditions. NB-UVB has not been compared to BB-UVB in terms of lowering pruritus in people with CP.[1] The current study aimed to compare the efficacy of NB-UVB and BB-UVB in decreasing pruritus in patients with CP, as well as to determine if NB-UVB is less effective than BB-UVB in a non-inferiority trial.

Methods:

This randomised, single-blinded, non-inferiority study compared the effects of narrowband ultraviolet B to those of broadband ultraviolet B. Broadband-UVB or narrowband-UVB was administered to patients with chronic pruritus three times per week for six weeks while the clinical response was recorded before and after each week during and at the end of the 6-week treatment course. The primary outcome was to assess patients' mean pruritus during the previous week using a visual analogue scale (VAS) ranging from 0 (no itch) to 10 (worst possible irritation). While the secondary outcome was patients rated their sleep disruption over the previous week on a scale of 0 (no sleep disturbance) to 10 (worst sleep disturbance). Also, the researchers rated skin excoriations on a 4-point scale (0–3). The treatment impact was measured as the percentage change after 6 weeks compared to the pre-treatment state. The Wilcoxon-Mann-Whitney test was used to assess group differences.

Results:

Data from 39 individuals with CP who had at least one UV treatment session were assessed. Twenty patients received NB-UVB treatment, whereas 19 had BB-UVB treatment. Broadband-ultraviolet B and narrowband-ultraviolet B both demonstrated strong antipruritic efficacy (itch reduction of 48% and 66.4%, respectively). During the treatment period, 1 (2.6%) patient in the BB-UVB therapy group experienced minor regional erythema. BB-UVB decreased pruritus from a mean (±SD) of 6.13± 2.35 to a mean (±SD) of 2.75 ±2.28. NB-UVB decreased pruritus from a mean of 6.09± 2.81 to a mean(±SD) of 2.42 ±2.93. Reduced sleep disruption from BB-UVB VAS decreased from mean (±SD) 3.28 ± 3.31 to mean (±SD) 1.16 ± 2.45. The mean sleep disturbance VAS was decreased by NB-UVB from mean (±SD) 4.1 ±3.06 to 1.73± 2.85. Excoriations were decreased by BB-UVB from a mean (±SD) of 1.25± 0.85 to a mean (±SD) of 0.78± 0.47. The severity of excoriations was reduced by NB-UVB from mean (±SD) 1.59± 0.62 to mean (±SD) 0.90 ±0.43. Narrowband-ultraviolet B was shown to be no worse than broadband-ultraviolet B in treating pruritus in patients with chronic pruritus, assuming a 20% non-inferiority margin (Figure 1).

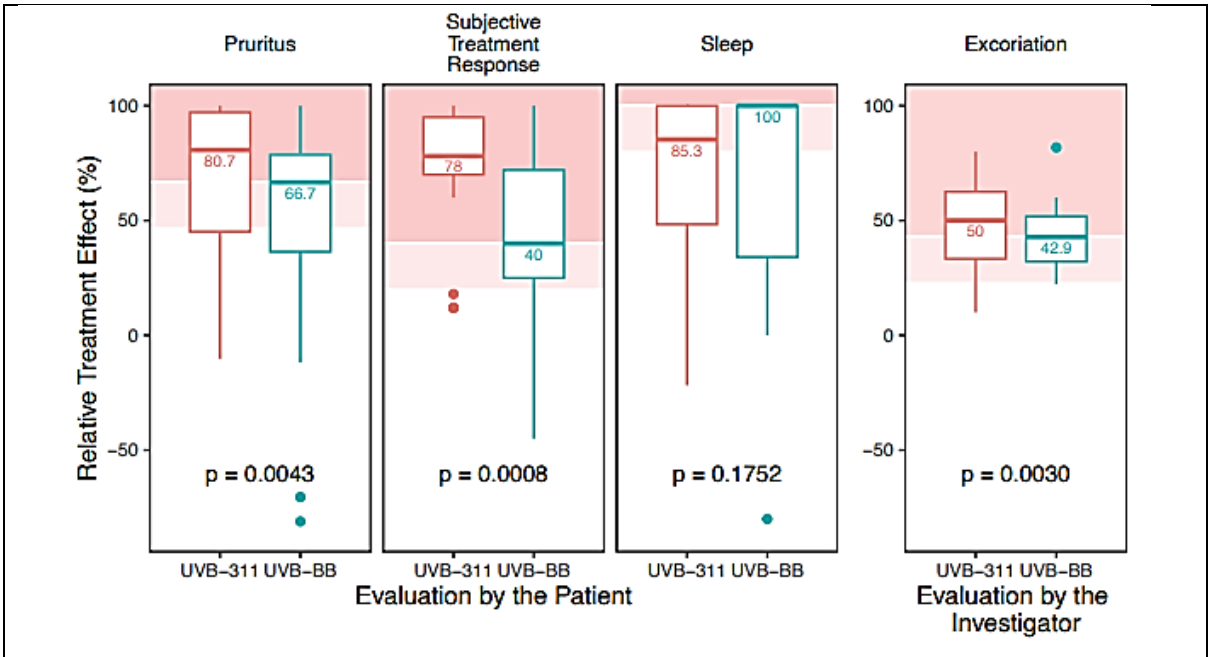

Figure 1. Comparison of narrow-band ultraviolet B (UVB)311 and broadband ultraviolet B (BB-UVB) before and at 6 weeks' treatment.

Discussion:

For many years, UV phototherapy has been utilised as a successful treatment for a variety of irritable skin conditions. At present, NB-UVB is the recommended phototherapy treatment

option and it has demonstrated that it works better than BB-UVB to treat psoriasis, AD, and other pruritic skin conditions. In the current study, the BB-UVB and NB-UVB therapy groups obtained a mean difference in change from baseline pruritus of -3.4 and -3.7 on the VAS during a 6-week period, respectively.[1] In an 8-week trial by Ständer S et al evaluated the safety and effectiveness of the neurokinin 1 receptor antagonist serlopitant in treating CP, individuals receiving serlopitant saw a mean reduction in pruritus from baseline of -1.6 on the VAS (0–10).[3]

Conclusion:

BB-UVB therapy has mostly been superseded by NB-UVB therapy. NB-UVB phototherapy is a useful choice for treating CP of different origins because of its low level of acute adverse effects, low number of contraindications, and ease of combination with other treatment methods.

The minimal amount of acute side effects, limited number of contraindications, and simplicity of conjunction with other treatment modalities make narrow-band ultraviolet B (NB-UVB) phototherapy a good option for treating Chronic pruritus (CP) of various causes.

Reference:

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Delayed Diagnosis of Spinal Dysraphism as Neuropathic Ulcers- A Case Report

Introduction:

Spinal dysraphisms (SDs) are congenital spinal cord abnormalities caused by a disruption in the complex sequence of embryologic processes involved in spinal development. After congenital heart disease, neural tube abnormalities are the most prevalent kind of birth abnormality. SDs are a form of neural tube abnormality, and their incidence is believed to be one to three per 1000 live births. The most prevalent location is the lumbosacral spine, which is implicated in 90% of cases, followed by the thoracic spine (6%-8%) and the cervical spine (2%-4%).[1] One useful sign for SD is the cutaneous markers, which are found in the midline, typically on the lower back. These signs result in the diagnosis of undetected SD in most cases. Further, neuropathy is the cause of the skin problems associated with SD, notably neuropathic ulcers.[2] This is a case study of a 13-year-old child who developed SD in an uncommonly late manner and needed neurosurgical treatment to avoid possibly irreversible brain damage.

Case Presentation:

The 13-year-old male child suffered from recurring painless skin lesions on his foot for five years, and his family took him to the outpatient dermatology clinic. Back discomfort, urinary incontinence, and numbness in his right knee were discovered during a systemic examination. His prior medical history included a lipoma on his lower back, an imperforated anus, and hypopadias from birth onwards; he underwent successful surgery to treat these conditions. After being admitted to the NICU, he had four years of follow-up care. No substantial history of medicine usage or similar cases in the family. The patient recorded having supportive family members and appropriate peer contacts. Upon examination of the skin, many ulcers and erosions over the tips of the toes were seen, mostly affecting the right foot and showing hemorrhagic crusts (Figure 1).

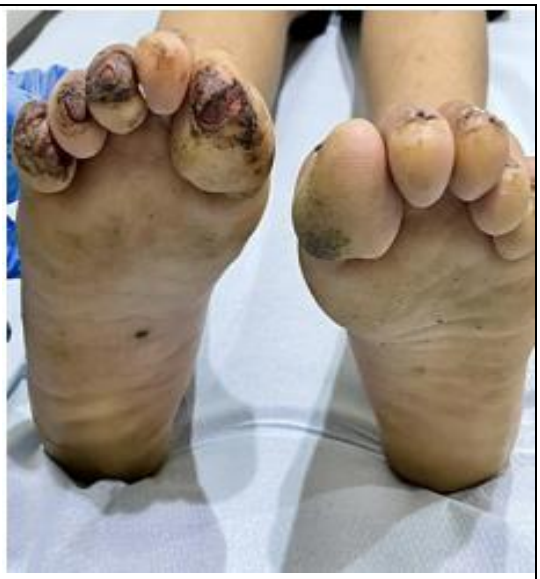

Figure 1. Multiple ulcers and erosions on the tips of the toes, mostly on the right foot, with some hemorrhagic crusts.

There was a straight vertical scar over the lower back, and the nails are weak and brittle. During neurological examination, bilateral power of the lower limbs 5/5 and hypesthesia of the right leg at L5, left leg at L4 and S1 were found. He was diagnosed as having secondary SD-related tethered cord syndrome and peripheral neuropathic ulcers. The diagnosis of transitional lipomyelomenigiocele with tethered cord was confirmed by MRI after he was referred to a neurosurgery facility. There were no difficulties with the diagnosis. He had lipoma excision and cord detethering. Neuropathic ulcers are managed with a two-week course of topical Fusidic acid cream, appropriate wound care, off-loading techniques, and avoiding trauma. During the follow-up sessions, the patient reported strong adherence to management and healing of the neuropathic ulcers without the development of new skin lesions (Figure 2). According to the patient, the overall treatment has a positive influence on his quality of life.

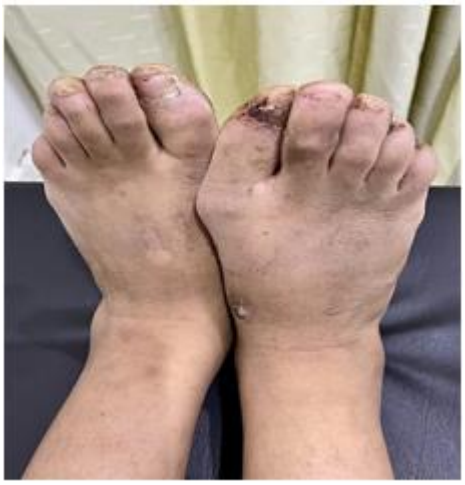

Figure 2. On the post-operative follow-up consultation, the patient reports improvement.

Discussion:

The term "SD" describes the aberrant fusion of dorsal midline components throughout the course of embryogenesis. The two-week topical Fusidic acid cream treatment, appropriate wound dressing, off-loading techniques, and avoiding trauma are the methods used to treat neuropathic ulcers.[2] In a study by DM Eastman et al. demonstrated that neuropathic ulcers must be managed with a dual strategy that addresses both the ulceration and the underlying cause of the neuropathy. To relieve pressure and reallocate stresses to the surrounding tissues, all ulcerations should be offloaded.[3]

Conclusion:

When newborns are found to have defects that have the potential to produce traction and/or pressure on the spinal cord, MRI, careful monitoring, and neurosurgical intervention may be

suggested. This patient underwent surgery in the hopes of preventing illness progression and preventing permanent brain impairment significantly.

When abnormalities in infants are discovered that have the potential to cause traction and/or pressure on the spinal cord, MRI, careful monitoring, and neurosurgical intervention may be recommended.

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