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Abdominal Cerebriform Intradermal Nevus in A 22 Years Old Female in the Eastern Region of Democratic Republic of Congo, a Psychodermatological Case Report

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Abstract

Cerebriform intradermal nevi (CIN) are a rare subtype of intradermal melanocytic nevi, distinguished by their characteristic surface morphology that resembles the gyri and sulci of the human brain. Typically presenting as benign skin lesions, these nevi occur predominantly as congenital formations, often evident at birth or during early childhood. Females are more affected. CINs generally manifest in areas such as the scalp and face and can be mistaken for malignant conditions due to their distinctive appearance and potential for growth, which may be influenced by hormonal changes, particularly during puberty and pregnancy.

An early diagnosis is crucial due to the associated risk of malignant melanoma, with lifetime incidence rates of melanoma in CINs ranging from 6.3% to 12%. Diagnosis is primarily clinical, supported by dermoscopy and, in uncertain cases, histopathological examination. Treatment options depend on factors such as cosmetic concerns and suspicion of malignancy, with complete excision being the most common intervention.

This case report details a 21-year-old female patient with a cerebriform lesion on her flank, exacerbated by postpartum hormonal changes. The report highlights the psychological impact of such skin conditions, as the patient experienced anxiety and depression related to her lesion. Following a successful excisional biopsy and psycho-educational support, her mental health improved significantly. This case emphasizes the importance of recognizing the psychological implications of CINs and adopting a biopsychosocial approach to patient management to ensure optimal outcomes and patient satisfaction.

Keywords: Nevus, Intradermal, Cerebriform, Abdominal and Psychodermatology

Introduction

Cerebriform intradermal nevi are a rare subtype of intradermal melanocytic nevi, characterized by their distinctive surface morphology resembling the gyri and sulci of the human brain [1]. These nevi typically present as benign, noncancerous skin lesions and are classified within the broader category of melanocytic nevi, which result from the proliferation of melanocytes in the dermis [2]. Cerebriform intradermal nevi predominantly occur as congenital lesions, often present at birth or arising in early childhood [3]. Regarding sex predilection, women are more affected than males [4].

The cerebriform appearance is due to an exaggerated surface architecture, often caused by the hypertrophy of the dermal components [3,5]. These nevi are generally asymptomatic, although their unusual texture and appearance may draw attention and prompt medical evaluation [5]. They can vary in size and pigmentation, often appearing as raised, soft, or firm lesions with a flesh-colored, brown, or darker hue [3]. Cerebriform intradermal naevus are most commonly observed on the scalp or face but rarely may occur in other locations [6]. While they are benign, their unique morphology can occasionally mimic malignant conditions, necessitating careful clinical assessment to rule out malignancy [7]. Clinically it presents as asymmetric, skin-colored or slightly pigmented tumor usually localized commonly over the scalp and rarely on the trunk and lower limb [8]. Over the years, it slowly enlarges and becomes more prominent and well demarcated with a cerebriform surface. Its size varies from 2 × 3 cm to 25 × 22.5 cm, and at times affects one half to three quarters of the scalp. Progressive alopecia is common, with hair being particularly sparse over the convolutions, and tufts emerging from the sulci. Patients may also have pruritus, tenderness, burning, recurrent infection, bleeding and a fetid and or musty odor [1].

These nevi are typically static or slow-growing. Pregnancy, hysterectomy, surgical exploration, and hormonal activity may induce a growth spurt of CIN [9]. It is suggested that increased hormonal activity may potentiate the growth of these lesions, as growth spurt is often noted at puberty [1]. Early diagnosis and treatment of CIN is important as the risk of development of malignant melanoma is high [7]. The life-time incidence of melanoma arising in a giant nevus or in smaller nevi is 6.3% and 12% [4]. The melanoma may be present at birth, or it may arise in infancy or later in life. The mortality of such lesions is high [10]. Diagnosis is typically clinical, supplemented by dermoscopy, and in uncertain cases, histopathological examination is performed. Histological examination shows intradermal nevus cells present in the full thickness of the dermis which can be well delineated or irregular. Nevus cells contain varying amounts of melanin. Neuroid transformation can be present in the deeper parts of the lesion with increased collagen fibers simulating those observed in neurofibroma. The nests and nevus cells are observed merging with the neuroid tissue. Hair follicles may appear atrophied, with nevoid tissue densely abutting them [1,2,9]. They may require treatment only for cosmetic reasons, irritation, or suspicion of malignancy. Options include surgical excision and plastic reconstruction, sometimes involving tissue expansion techniques, or laser therapy, depending on the size, location, and patient preference, in cases where excision is not possible, close follow-up of the lesion is mandatory [4,10-12].

Although studies have not described cases of cerebriform intradermal nevi associated with mental disorders, a link has been established between disfiguring skin conditions and certain mental disorders, such as depression [13]. Many individuals associate unusual or irregular skin lesions with melanoma due to widespread awareness campaigns. The dramatic appearance of cerebriform intradermal nevi may amplify this fear. Patients might experience anxiety, insomnia, or even depression while awaiting diagnostic clarification. Persistent fear of recurrence or malignancy may linger even after a benign diagnosis.

Understanding the characteristics and management of cerebriform intradermal nevus is essential for clinicians to distinguish early these benign lesions from potentially harmful dermatological conditions [6]. This helps to calm and reassure patients with these lesions and to avoid unnecessary excisions. This case report aims to present not only a typical case of intradermal cerebriform nevus with a particular location and good evolution after excision which confirms the existing literature in the field, but also the psychological impact of this skin conditions and the effectiveness of biopsychological approach in the management of patients with skin conditions [14].

Description of the Case

A 21-year-old female, from BENI (KIVU), married, with 2 children (the last born is 3 months old, female) presented with complaints of a black mass on the skin of her left flank. The patient also complained of a feeling of permanent fear, anxiety, and insomnia during the last 4 weeks due to the postpartum increase in the size of the mass because the lesion was first noticed at birth and gradually increased in size with age and more after the birth of her second male child. She

reported no family history of skin disorders.

On examination, an ovoid nodule with a long oblique axis (5x3 cm), rough to the touch, well demarcated in relation to the surrounding healthy skin, irregular edges in some areas. The surface was irregular with convolutions and depressions, the area was hairless upon inspection, no itching or painful sensation, no fetid odor (Figure 1) and no other dermatological lesions in other parts of the body. The patient had a preserved general condition, without any significant findings in examination of other systems.

The Hopkins Symptom Checklist-25 (HSCL-25) was administered to the patient to measure symptoms of anxiety and depression and screened positive for depression and anxiety (For Depression: $32/15 = 2.13 > 1.75$ cut-off; For Anxiety $21/10 = 2.10 > 1.75$ cut-off).

Psycho-education about the condition was administered to the patient and the care taker and to allow them to understand the procedure and the good prognosis of the condition and a written informed consent was obtained from the patient. A total excisional biopsy of the nodule by taking over 2 cm of healthy skin beyond the nodule and in depth (Figure 2) on local anesthesia (lidocaine 2% plus 1mg of adrenaline) showed a cerebriform mass lined by benign keratinizing squamous epithelium. The underlying dermis was diffusely infiltrated by Type A melanocytes (epithelioid large with distinct cell borders and melanin pigment) in superficial dermis and Type B melanocytes (smaller with less pigment) in the intermediate dermis. No mitoses, necrosis or marked atypia seen. These features were suggestive of a cerebriform intradermal nevus (Figure 4). The wound was sutured in two planes, the deep plane with absorbable suture (vicryl 2.0) and the superficial plane with non-absorbable suture (Nylon 2.0) (Figure 3) and the wound covered with a dried cotton dressing.

The post-operative follow-up was done on an outpatient basis. She was put on amoxicillin 1 gram 3 times per day for 7 days and paracetamol 1 gram 2 times per day for 2 days. On the 10th day post incision, the sutures were removed with good wound healing, proper closure, any signs of complications like infection, swelling, pain, or discharge. (Figure 5).

The Hopkins Symptom Checklist-25 (HSCL-25) was administered to the patient on the day 10th to measure symptoms of anxiety and depression and screened negative for depression and positive for anxiety yet the patient had no previous history of mental disorders (For Depression: $24/15 = 1.6 < 1.75$ cut-off; For Anxiety $18/10 = 1.8 > 1.75$ cut-off). Psycho-education was administered to the patient about the condition and the prognosis.

The patient was reviewed after 3 and 12 months, screened negative for Anxiety and Depression using the same instrument (HSCL-25). There were no excessive scarring, such as hypertrophic scars or keloids, no any pain, discomfort, or restricted movement due to the excision site, no signs of residual nevus tissue or recurrence (Figure 6,7). The patient was satisfied with the cosmetic result.

The patient received psycho-education about the condition and given an appointment for review after 6 months and encourage to consult any time in case of any change of color or any symptoms occurring on the site of excision or any part of the skin on the body.



Figure 1: Asymmetric, Skin Hyperpigmented Tumor with Cerebriform Morphological Characteristics on The Skin of the Left Flank

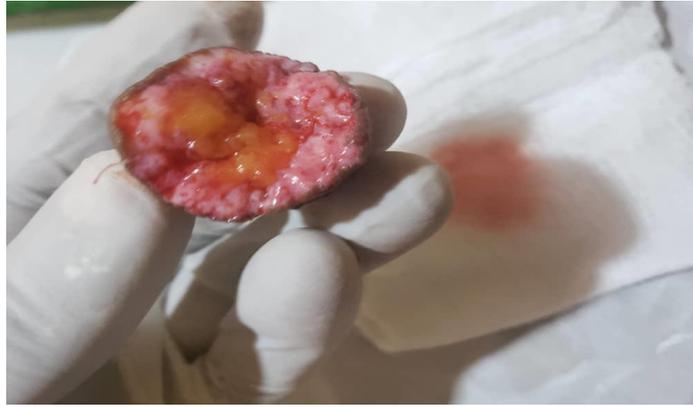


Figure 2: Excised Tumor After Operation



Figure 3: Suture with Nylon 2.0 after Excision of the Tumor

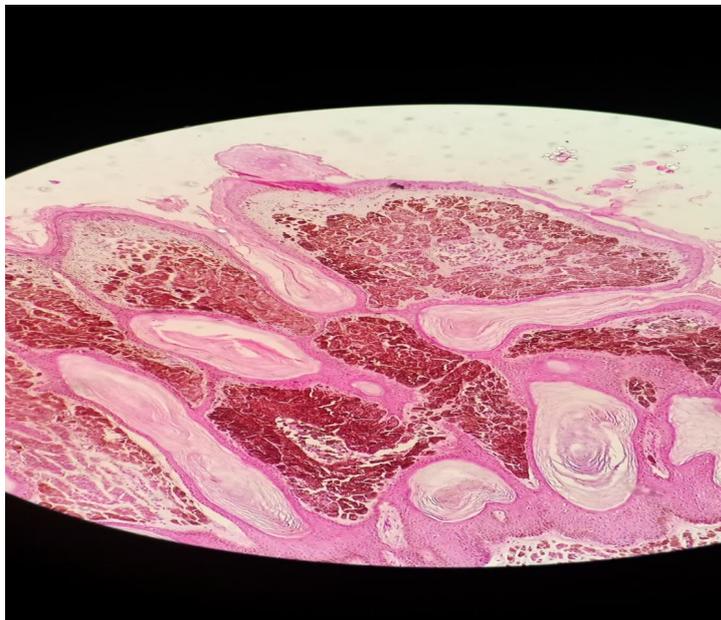


Figure 4: Anatomopathological Aspect of the Lesion



Figure 5: 10 Days Later, Sutures Removal



Figure 6: Follow-up 3 Months Later



Figure 7: Follow-up 12 Months Later

Conclusion

Cerebriform naevus is a rare condition that can appear not only on the scalp but also in other areas of the body. It tends to grow larger during puberty and is influenced by hormonal changes. The growth in size, changes in its appearance, and the patient's awareness of its potential for malignant transformation can impact their mental health. Complete excision, along with psychological support and regular monitoring, can help achieve the best possible outcome.

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