

## Extensive Cutaneous Ulceration of the Scalp – Unknown Disease Entity or Dermatitis Artefacta?

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**ABSTRACT** Psychological disturbances and emotional stress events may elicit a wide spectrum of skin disturbances which are classified as dermatitis artefacta. This diagnosis should be taken into consideration when symptoms coexist in a bizarre pattern or indicate at least several distinct skin pathologies while laboratory tests remain inconclusive. We present a case of dermatitis artefacta which produced very extensive loss of the scalp. Our intention was to show difficulties in diagnostic management of this recurrent and complex psychiatric disorder which may inconvenience clinicians. Neither laboratory tests (including bacteriology) nor X-ray of the skull identified any significant pathology. Although histopathology excluded skin malignancy, it showed an unspecific pattern not attributable to the most probable skin conditions like pyoderma gangrenosum or infection. Psychiatric consultation was inconclusive. Despite undetermined diagnosis, the patient was eligible for reconstructive surgery, which restored his scalp coverage. Different skin conditions may share very similar spectra of clinical symptoms, and even deep medical investigation does not always enable us to define the observed condition. However, both laboratory and imaging tests are necessary to exclude infections or potential malignancies before the diagnosis of dermatitis artefacta is established, whereas psychiatric consultation may or may not identify mental issues.

**KEY WORDS:** ulceration, cutaneous ulceration, dermatitis artefacta

### INTRODUCTION

Ulceration is a loss of skin or mucous membrane which penetrates beneath the epidermis or the epithelium into deeper soft tissue. Both mechanical injuries or local inflammatory conditions can act as causative factors, with secondary presentation of severe pain or infection (1). An investigation of causative factor is of crucial significance. Palpa-

tion and ultrasound imaging are typically sufficient to identify impairment of blood supply. Laboratory tests are needed when there is a suspicion of autoimmune or infection-related causation (2). Overall, self-injury appears to be the most elusive causative factor, frequently demanding expensive medical investigation to exclude structural disturbances. One



Figure 1.

must remember that psychological disturbances and emotional stress events may elicit a wide spectrum of skin lesions termed as dermatitis artefacta (3). This diagnosis should be taken into consideration when symptoms coexist in a bizarre pattern or refer to at least several distinct skin pathologies. In such cases, skin lesions arise typically in body areas within easy reach of the patient's hand and do respond to common dermatological treatments (4). We present case of dermatitis artefacta which produced extensive loss of the skin, requiring reconstructive plastic surgery.

### CASE REPORT

In September 2016, a 71-year-old male smoker was admitted to the Department of Dermatology at the School of Medicine in Katowice, Poland, due to an extensive ulcer in the frontoparietal scalp which had arisen four months earlier. The lesion was 15x8 cm in size and was initially covered with a thick scab (Figure 1). Debridement revealed a sharply demarcated scalp ulcer with the skull seen in the bottom (Figure 2). The man reported neither pain nor injuries of the head within the previous year.



Figure 2.

Comorbidities comprised arterial hypertension and hyperlipidemia, treated with low dose of acetylsalicylic acid, indapamide, simvastatin, amlodipine, and ramipril. The patient experienced a stroke in 2011, but without clinically significant palsy.

Skin biopsy taken from the margin wall of the ulcer showed non-specific histology, but without cancer cells. Fungal test was negative. Bacterial smear test showed a growth of *Staphylococcus epidermidis*, not requiring treatment. X-ray of the skull, ENT, and surgical consultations did not find any pathologies. No lymphadenopathy was detected. Laboratory tests, including tumor markers (PSA, CEA), remained within normal ranges (Table 1). Psychiatric consultation identified neither a suspicion of mental disturbances nor tendencies towards self-mutilation.

Table 1. Results of laboratory and imaging tests

Test	Outcomes
Laboratory tests (complete blood count, ESR, <sup>a</sup> electrolytes, creatinine, glucose, protein, bilirubin, aminotransferases, test for syphilis, urinalysis)	Within normal range except of accelerated ESR (46 mm/h)
Tumor markers (CEA, <sup>b</sup> tPSA <sup>c</sup> )	Within normal range
Bacteriology smear	<i>S.aureus</i> <sup>d</sup> +++, abundant MSSA <sup>e</sup>
Fungal test	No growth
Histopathology	Lymphocytic inflamed infiltration, no evidence of tumor growth or abscess-inflamed infiltration
X-ray of the skull	No abnormalities detected

a: Erythrocyte sedimentation rate; b: carcinoemryonic antigen; c: total prostate-specific antigen; d: *Staphylococcus aureus*; e: methicillin-sensitive *Staphylococcus aureus*



**Figure 3.**

The patient was referred to further treatment in the Department of Plastic and Reconstructive Surgery at St. Barbara's Hospital in Sosnowiec, Poland, where he was submitted to series of reconstructive procedures. The periosteum was drilled to stimulate a regrowth of fibroblasts, vascularity and a formation of granulation tissue from the bone marrow cavity as a substrate for a possible graft. Then the external lamina was chiseled to remove the necrotic tissue of parietal bone and finally the graft in donor site was applied to cover the lacking area of the skin. Figure 3 presents the patient after a series of surgical interventions at two-month follow-up.

## DISCUSSION

Almost half of patients receiving dermatological care manifest psychiatric disturbances that are either primary or secondary to skin disease (5). Mood disorders, especially depressive disorders, suicidal tendencies, anxiety disorders, obsessive-compulsive disorders, and delusional disorders, are the most common psychiatric disturbances diagnosed in a dermatological setting (6). Aktan et al. found that almost 1/3 of patients seeking dermatological help needed concomitant psychological or psychiatric care (7).

Dermatitis artefacta is a psychocutaneous disorder observed more commonly by dermatologists than psychiatrists. It is 4 to 8 times more prevalent in women than men, and prevalence is not affected by patient age. Many of these patients develop self-induced skin lesions that can be attributed to obsessive-compulsive disorders. One must remember that the patient often cannot recall any self-injury and remains unaware of their tendency towards self-mutilation (8).

This represents a significant challenge in establishing the diagnosis of dermatitis artefacta, requiring a detailed interview with the patient and a follow-up within the next few months. Self-inflicted skin lesions arise on areas within easy reach of the patient's dominant hand, sparing the middle part of the back. Their outlines are typically irregular, but lesions of bizarre shapes are usually clearly demarcated from the surrounding intact skin (8-10).

Time-consuming and multidisciplinary management is necessary to achieve clearance of self-inflicted lesions. Occlusive dressings may prevent from progression of dermatosis by limiting the patient's access to lesional skin. In fact, some patients may need more extensive treatment for their mental distress than for the dermatoses. Intensive psychotherapy may be required in severe cases with borderline personality disorder. Antidepressants and low-dose atypical antipsychotics are very helpful as adjunctive therapies (8). Alternatively, oral N-acetylcysteine (1200-2400 mg daily) has been shown to be a very effective treatment for patients with trichotillomania, which is another clinical variant of dermatitis artefacta (11).

## CONCLUSIONS

Different skin conditions may share very similar spectra of clinical symptoms and even deep medical investigation do not always enable to define the observed condition. However, both laboratory and imaging tests are necessary to exclude infections or potential malignancies before the diagnosis of dermatitis artefacta is established, whereas psychiatric consultation may or may not identify the causative factor of skin lesions.

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