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# Use of dermatoscopy in the detection of squamous cell carcinoma in a patient with recessive dystrophic epidermolysis bullosa

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## Case Presentation

Epidermolysis bullosa (EB) is a heterogeneous group of disorders. Inherited EB is classified into EB simplex, junctional, and dystrophic [1]. We present a case of a 33-year-old female patient with severe generalized recessive dystrophic epidermolysis bullosa (RDEB-SG) who, since birth, has received follow-up in our Department and Referral Centre of the Ministry of Health and Social Welfare of the Republic of Croatia for hereditary bullous epidermolysis.

She presented with 5 non-healing lesions on the scalp, which were clinically very suggestive of squamous cell carcinoma (SCC). A year ago, the patient underwent surgical removal of a well-differentiated SCC in the occipital region and moderately differentiated SCC in the left parietotemporal region.

Clinically, in the occipital region, next to the margin of cutaneous flap of previously excised SCC, exophytic lesions and ulcerations were found. In the left parietotemporal region, an erosion measuring 3 cm in diameter with an elevated margin was found (Figure 1). Dermoscopy was performed on 5 regions that clinically presented as ulcerations and revealed a red background. Lesions presented with an amorphous whitish or pinkish background along with polymorphous atypical vessels (Figure 2). In some areas, erosions were clearly seen. Histopathology confirmed diagnosis of moderately differentiated SCC in all 5 lesions.

## Discussion

Inherited EBs are rare disorders that, according to data published in 2016, have an overall incidence and prevalence during a 5-year period of 19.60 and 8.22 in 1 million live births, respectively [1-4]. Recessive dystrophic epidermolysis bullosa (RDEB) is a rare genodermatosis characterized by generalized severe blistering, atrophic scarring, milia formation, pseudosyndactyly, mutilation, and development of severe disability [2]. These patients have multiple comorbidities and their life

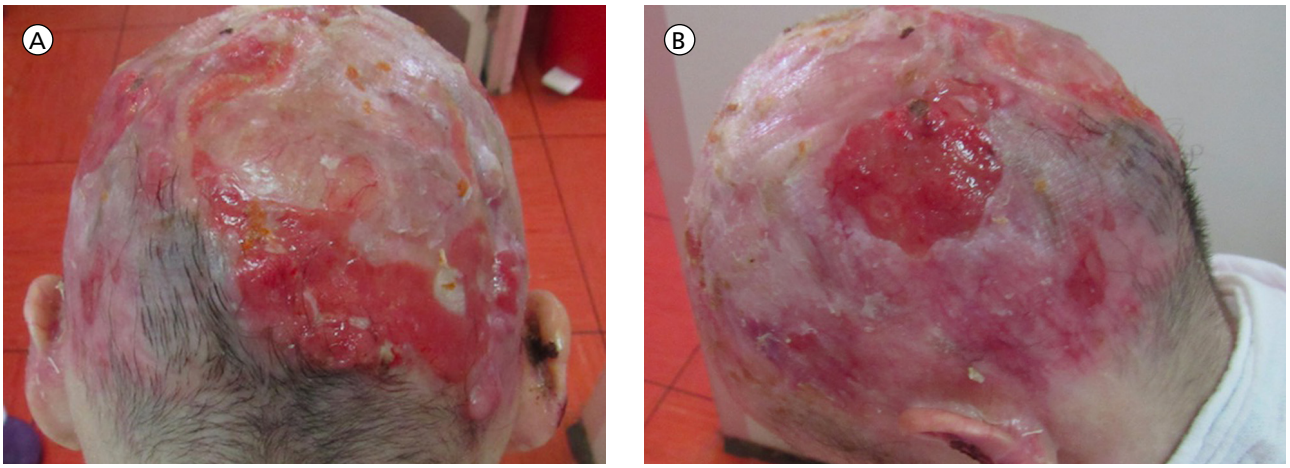

**Figure 1.** Clinical findings. (A) Alopecia of the scalp with exophytic lesions and ulcerations in the occipital region next to the margin of cutaneous flap. (B) Erosion measuring 3 cm in size with elevated margin in the left parietotemporal region. [Copyright: ©2018 Jurakic Toncic et al.]

expectancy is shortened, with mean age of death of 23.35, and median of 22.09 years [3,5].

Death can occur during infancy or early childhood due to sepsis, pneumonia, renal failure, occlusion of the upper airway, or failure to thrive, but the leading cause of death in adults is cutaneous SCC [3,5]. Cutaneous SCC most commonly occurs in RDEB and represents the leading cause of death of these patients [1,5]. These patients have a 51.68% cumulative risk of developing SCC by the age of 30, with cumulative risk of death at 42.26% by that age [3]. EB-associated SCC is more aggressive, has high metastatic potential, and presents a significant cause of mortality and morbidity. These tumors arise in chronic non-healing skin wounds during mid to late adolescence [5]. Death from distant metastases occurs in the majority of patients within 5 years of diagnosis of the primary tumor [3,5].

The pathogenesis of SCC in RDEB is still unknown. These tumors preferentially occur on limbs, especially on bony prominences where the blistering and scarring are the most pronounced [1,2]. There is no obvious relationship to sun exposure, and the most common sites are long-term non-healing wounds or scars [1,3]. Presence of the chronic scar tissue in EB patients cannot itself fully explain this phenomenon because tumors in scars or radiodermatitis are not characterized with such an aggressive biological behavior [3]. To date, there is no convincing evidence that RDEB SCC is different from non-RDEB SCC, but it is speculated that RDEB SCC has a permissive tumor microenvironment [2]. In RDEB, early diagnosis of SCC can be difficult as it can present similarly to typical chronic ulceration with scarring and crusting [1]. In these patients, SCCs, similarly to burn scar tumors, usually start as an ulcer margin, with the possibility that only one portion of the ulcer undergoes malignant transformation, while the rest remains as a non-healing inflamed area [1]. Knowing this, if a RDEB patient presents with non-healing wounds or skin lesions, a biopsy guided by experienced dermoscopist should be performed.

An advantage of dermoscopy is that it is a noninvasive diagnostic tool, and use of non-contact dermoscopy is absolutely preferred. This is important because RDEB patients often suffer from chronic pain. In order to obtain good visualization, persistent crusts should be removed [1]. Dermoscopic criteria for SCC are well established; therefore, dermoscopy and photo documentation should be routinely used in detection of SCC. Dermoscopic features of early and advanced SCC, as well as dermoscopic criteria of well vs poorly differentiated SCC, have been described [6,7]. The most common pattern seen in poorly differentiated SCC is a red predominant color and randomly distributed small vessels, which can be dotted or irregular. Dermatoscopy of invasive well-differentiated SCC shows a white color, presented as an amorphous area or white perifollicular circles, white perivascular halos, and a polymorphous vessel pattern [6-8]. In dermoscopy of undifferentiated SCC, only atypical vessels could be expected, which can help differentiate SCC from surrounding ulcerated skin that is found in patients with RDEB [6].

## Conclusions

Due to the high risk of development of SCC in patients with RDEB, it is recommended to follow-up with these patients on a regular 6-month basis [1]. Although it is time-consuming and inconvenient for the patient (due to discomfort and pain), it is absolutely necessary to remove and reapply all the dressings to complete a full body checkup [1]. Regional lymph node examination is recommended in all patients [1]. Development of multiple primary tumors has been described in more than 60% of the patients with RDEB, therefore meticulous lifelong surveillance for additional SCC is a requisite in

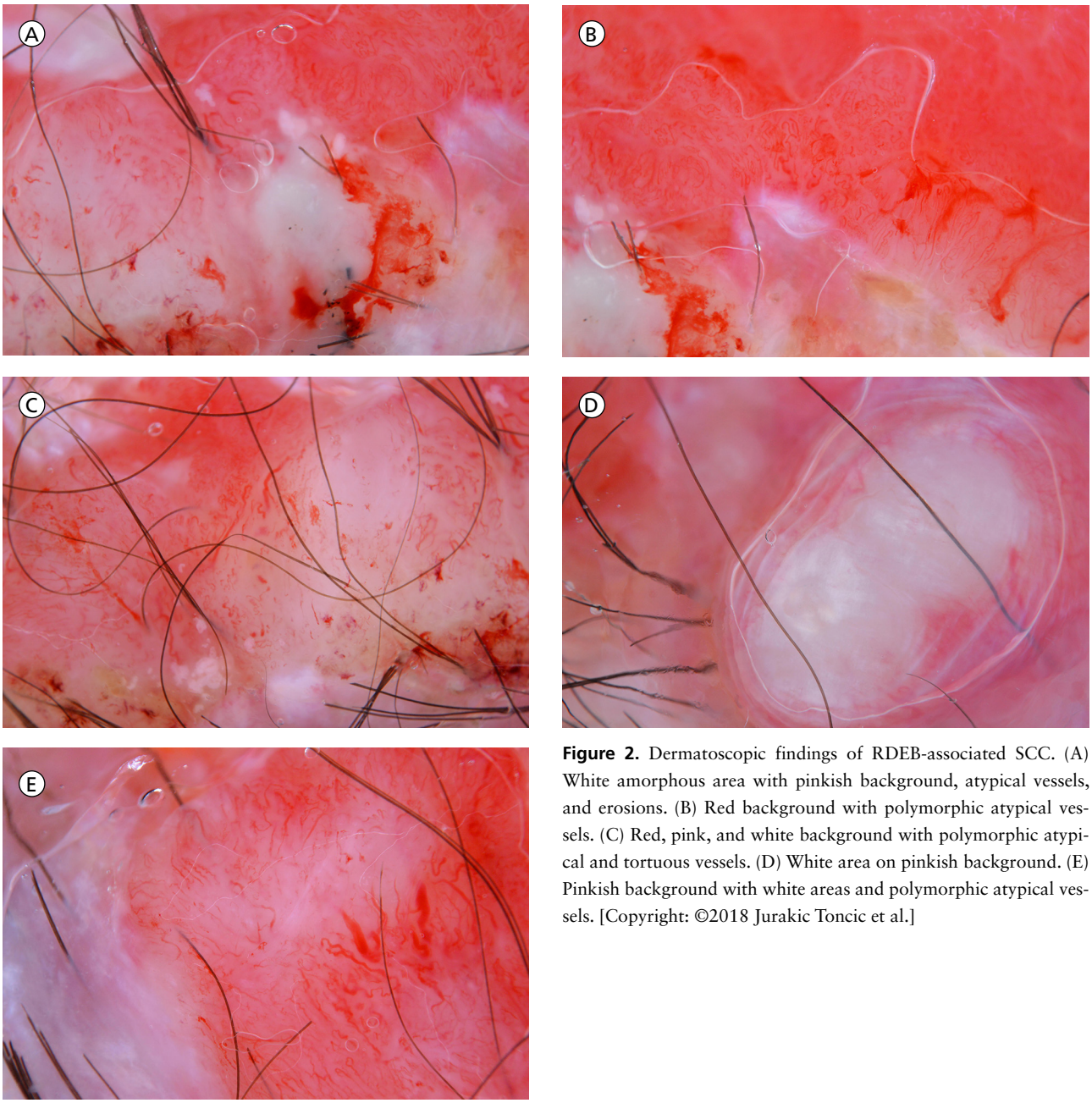


**Figure 2.** Dermatoscopic findings of RDEB-associated SCC. (A) White amorphous area with pinkish background, atypical vessels, and erosions. (B) Red background with polymorphic atypical vessels. (C) Red, pink, and white background with polymorphic atypical and tortuous vessels. (D) White area on pinkish background. (E) Pinkish background with white areas and polymorphic atypical vessels. [Copyright: ©2018 Jurakic Toncic et al.]

all RDEB patients [1,3]. Most EB-associated SCCs are well differentiated; however, it is not possible to predict biological behavior of a tumor simply on the basis of histological grade [1,3]. Because SCCs in this group of patients present with a more aggressive biological behavior, early diagnosis of this type of tumor is mandatory and we strongly encourage the experts dealing with this special group of patients to acquire necessary dermoscopic skills for early recognition of these tumors [3,9].

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