Photodynamic Therapy for Nonmelanoma Skin Cancer of the Genital Area: Our Experience

Intraepithelial cutaneous squamous cell carcinoma (SCCIS) of genital area can be referred to as Bowen's Disease (BD) or erythoplasia of Queyrat (EQ) according to localization and clinical presentation.

BD is an intraepithelial squamous cell carcinoma with the potential to become an invasive carcinoma. It can be localized anywhere on the skin and the genital area, in particular over the vulva, perineum, or the inguinal crease and glans penis. Clinically it usually appears as an erythematous or hyperpigmented, scaling, sharply demarcated plaque.

SCCIS localized on the mucosal or transitional surface of glans penis, also referred to as EQ, is regarded as a premalignancy in the squamous epithelial cell layer of the skin and may develop into invasive carcinoma. The risk of invasive carcinoma is estimated to be higher for EQ, at 10%, in comparison to SCCIS of the skin, which might be linked to mucosal involvement. Clinically it usually appears as an inflammatory plaque (1).

EMPD is an extremely rare form of intraepithelial adenocarcinoma that may have an underlying tumor component (only a few hundred reports are available in the reviewed literature). It affects apocrine gland-bearing areas and most commonly occurs on the perianal zone and nipple (2).

The first choice treatment for these types of skin cancers is surgical excision, which is often difficult due to the cancer location and the extension of the lesion and might require large margins with reconstructive surgery. The use of non-invasive alternative procedures, such as photodynamic therapy, has been considered for treatment, although only a few reports regarding isolated cases or small series exist (3).

Six patients were enrolled in the study with a diagnosis of in situ skin cancer of genital area (Table 1). The case series included 5 men and 1 woman aged 39-75 years (mean age 53 years). The patients were treated during a period from November 2010 to August 2012 in our Dermatological Department. The clinical diagnoses of all 6 patients were confirmed with histopathology before starting the treatment: 4 patients were diagnosed with EQ of glans penis, 1 patient with BD of the perianal zone, and 1 patient with EMPD of inguinal crease (Figure 1). We decided to administer MAL-PDT therapy due to the site and/or the size of the lesions and the age of the patients.

None of the patients reported any known side-effects to the use of PDT. Informed consent was obtained before PDT treatment.

Patients underwent consecutive MAL-PDT sessions: 3 hours after topical application of MAL emulsion (Metvix, GALDERMA, Italy), they underwent illumination with red light (PDT 1200 L, Waldmann W) at a fluency of 75 J/cm^2 for 10 minutes. The light source used with MAL-PDT had a waveband of about 635 nm. During the exposure phase, control of the pain was achieved by infiltrating 1-2 cc lidocaine 2% infiltration in the area that resulted fluorescent using Wood's light. Ventilation and cold water spray was administered to all patients to relieve the burning feeling.

All the patients achieved a complete clinical and dermatological remission. In 2 of the cases with EQ of glans penis and in the case with BD and in the case of EMPD, 3 sessions of MAL-PDT (2 consecutive weekly

Table 1. Description of the population

n	Female/ Mmale	Age	Localization	Histopathology	Topical methylaminolevulinate – photodynamic therapy sessions
1	M	39	Glans penis	EQ	6 sessions
2	M	61	Glans penis	EQ	6 sessions
3	M	30	Glans penis	EQ	3 sessions
4	M	44	Glans penis	EQ	3 sessions
5	F	68	Perianal zone/nipple	BD	3 sessions
6	M	75	Inguinal crease	EMPD	3 sessions

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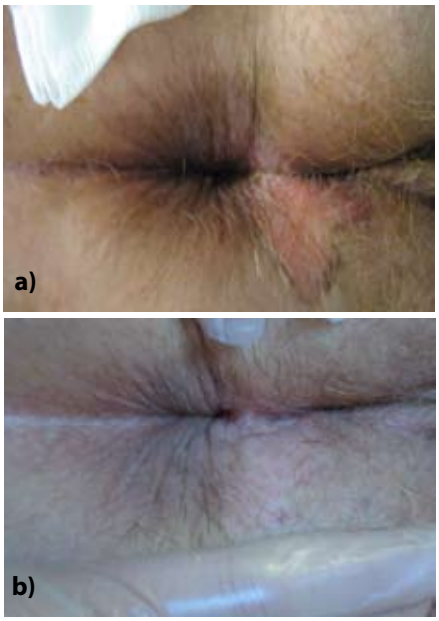

Figure 1. Bowen disease: Before (a) photodynamic therapy (PDT) sessions and after (b) the third session.

sessions and a third session after 2 weeks) were sufficient. The other 2 cases with EQ of glans penis required 6 sessions of MAL-PDT (2 consecutive weekly sessions and a third session after 2 week, repeated twice). The follow-up schedule was checked one month after the end of treatment, and then every six months. The clinical and dermatoscopical follow up demonstrated no sign of recurrence over an average post-treatment period of 9 months (observational FU range 9-24 months).

The case series that we propose is heterogeneous but is interesting because in genital area is always difficult to propose a destructive surgery and more conservative options have to be taken into consideration. Skin preserving and cosmetic result has to be considered in therapeutic choice.

PDT can be considered a valid alternative for cancer control, organ preservation, cosmetics, shorter healing times and functional results (4). According to literature evidence, surgery remains the standard therapy for those cancers, when it is practicable though the rates of recurrence with PDT are comparable to surgery (5-6).

The results of our study, though based on a limited sample of patients, are promising; we obtained complete remission in 100% of the cases but it is essential a long-term follow-up and a final evaluation of the effectiveness of the therapy is for the moment premature. Our data available on relapse rates at 9 months follow-up (FU) show encouraging results.

A surgical approach is still possible as the second stage intervention, if considered necessary.

In the case of patients with multiple and extended lesions, an improvement in number and size reduction may also be considered a good result for the aesthetic outcome since surgery can then be less extensive.

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