Stoma Complications: Corticosteroid and Silver Nitrate-Resistant Inflammation Successfully Treated with Topical Tacrolimus

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Dear Editors,

Stomas following colorectal surgery have a significant incidence of complications including chronic inflammation. Potent topical steroids and silver nitrate applications represent the standard treatment, but a considerable number of cases remain unresponsive. We would like to illustrate the case of a 65-year-old female patient who was referred to our Dermatology Department by the Hospital's Stoma Care and Colorectal Services for a persistent severe rash of her ileal stoma, consequent to a procto-colectomy that required 10 years ago for ulcerative colitis. From the time of the operation, despite a number of treatment attempts and a couple of revisions to the ileostomy, the stoma remained inflamed and the patient experienced consistent discomfort with significant impact on her quality of life. Silver Nitrate and several corticosteroid preparations were used topically for years without success. On clinical examination, the stoma presented

some slightly raised, friable and oozing plaques and the patient described the area as always being very uncomfortable, painful and sometimes bleeding (Fig. 1a). A patch test excluded a contact dermatitis to any of the components of the stoma pouch material or to other related accessories and cleansing products. Even if carcinoma arising at an ileostomy is a rare occurrence [1], we performed biopsies on the glandular mucosa on the external side of the stoma, which confirmed the absence of any dysplastic change or malignancy. Histology confirmed the presence of florid inflammation and ulceration with fibrino-purulent slough, in keeping with severe ileitis also with ulcerative changes (Fig. 2a, b). Considering the lack of efficacy of the standard treatments, we decided to prescribe tacrolimus 0.1% ointment to the patient for twice daily application to the stoma, in conjunction with the change of the stoma pouch during the day. The symptoms com-

pletely disappeared in around 4 weeks from the beginning of the treatment (Fig. 1b). After more than 1 year, using the same treatment throughout, the stoma was found to be softer and no signs of inflammation were present. The surrounding skin appeared clear. No recurrences or further bleedings have been documented and, more importantly, the pain and discomfort resolved completely and the patient started enjoying a normal life. The most common stoma complications reported in literature are hernia, muco-cutaneous separation, necrosis, retraction, stenosis, prolapse, laceration, infection, abscess and fistula formation [2]. Furthermore, up to 73% of stoma patients have been reported to experience peristomal skin conditions related to pouching problems. Lastly, granulomas develop often on the stoma, as a result of over-healing of damaged stoma surface, possibly due to friction from the bag, prolonged faecal irritation, irritative or allergic

Fig. 1. a Stoma at presentation with inflamed plaques at the base of the stoma present for many years (bleeding was common and the constant pain was heaving a serious impact on the patient's life). **b** Stoma after 12 weeks of topical treatment with tacrolimus

0.1% ointment twice daily. The mucosal surface is clear and the ulcerated nodules covered with fibrin material, visible in the previous picture have disappeared. Discomfort and pain have also resolved.

Fig. 2. a Low magnification shows atrophic ileal mucosa, with diffuse inflammation of the submucosal tissue and the presence of focal ulceration (EE, $\times 20$). **b** Higher magnification demonstrates

the presence of both granulocytic and lymphocytic florid infiltrate in the submucosal tissue. Eosinophils are abundant. The overlying epithelium appears atrophic and partially ulcerated (EE, $\times 40$).

reaction to the pouch, tight clothes over the stoma, causing pain and discomfort [3, 4]. Tacrolimus is an immunosuppressive macrolide isolated from a *Streptomyces* that inhibits T-helper lymphocyte (CD-4) activity and Interleukin-2 transcription [5]. In its topical form, it is mainly used for the treatment of atopic eczema but also found to be helpful in other inflammatory conditions driven by T-lymphocytic reaction.

Recent studies conducted on large cohorts of patients confirmed its safety, also for long-term use [6]. Topical tacrolimus has been used on parastomal dermatitis in particular for pyoderma gangrenosum, present in 2% of inflammatory bowel diseases, such as ulcerative colitis or Crohn's disease [7–9]. We believe that this case may be of interest to colorectal surgeons and health care professionals involved in stoma care as

the direct use of topical tacrolimus to successfully treat inflammatory changes of a stoma, to our knowledge, has never been reported before.

Disclosure Statement

The authors declare no conflicts of interest for this article.

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