

# Beard alopecia caused by deoxycholic acid for the treatment of submental fat

*Alopecia em barba causada por desoxicolato para tratamento de gordura submentoniana*

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## ABSTRACT

Second case report in the literature regarding beard alopecia observed after the third session of injections of 1% deoxycholic acid for reduction of submental fat.

**Keywords:** alopecia; subcutaneous fat; deoxycholic acid

## RESUMO

*Segundo relato de caso da literatura de alopecia em região de barba observada após terceira sessão de injeções de desoxicolato a 1% para redução de gordura submentoniana.*

**Palavras-chave:** alopecia; gordura subcutânea; ácido desoxicólico

A report describing alopecia after ATX-101 injections for submental fat reduction was recently published, calling attention for the possibility of this aesthetic side effect, which was detected in a study of a single case in the post-marketing period, phase IV of the Kybela® product (Allergan, USA), in the United States of America. The study described a one-year follow-up period of permanent alopecia after a single session of the substance.<sup>1</sup> Despite the number of patients studied in the pre-sales period in a controlled environment, the actual safety profile of a medication becomes evident with the continued vigilance, based on voluntary reports of adverse effects.<sup>2</sup> Case reports are extremely important for the detection of side effects not covered by the designs of phase II and III studies, promptly alerting the industry to actively assess the actual risk of the event: in the present case, in a male patient with beard in the submental area. There is also the need to include this possible side effect in the physician's practice's terms of consent.

A very similar case occurred at the private practice of the author of the present report (Figure 1), observed by the patient himself one month after the third 1% deoxycholate injections session. The injection was prepared in a sterile vial containing 22ml of distilled water with 0.9% benzyl alcohol (Bacteriostatic Water 30ml, Hospira), adding up 1ml of 2% lidocaine with 1:200,000 epinephrine (Xylestesin, Critália, São Paulo, Brazil), 6.1ml of 4.75% deoxycholate (sodium deoxycholate, Pineda®, São Paulo, Brazil). The injection was carried out with a 3ml syringe (Luer Lok™, Becton Dickson) and 0.3x13mm

## Case report

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**FIGURE 1:** Alopecia in the area treated with 1% deoxycholate

needle (30G 1/2, Becton Dickson), and a volume of 0.2ml per point in the pre-platysmal fat (needle inserted between 2/3 and its complete length, perpendicularly to the skin, pinched and tractionned with the opposite hand). The marking of the points is performed every 1cm in an area limited by the following anatomical landmarks: upper margin at 1.5cm caudally from the mandibular margin, lower margin at 1cm cranially from the hyoid bone, lateral margins at 1cm medially to the platysmal band that inserts into the area termed “jowl”. Despite the fact that the submental alopecia persisted on each return for a new session in the previous three months, the patient decided to continue the treatment due to the excellent progressive results in the reduction of submental fat. Alopecia was also observed in the Adam’s apple region, however it was not injected.

Given that none of the reported cases underwent biopsy, it is only possible to speculate about the possible mechanisms of

this apparently non-cicatricial alopecia. The diffusion of deoxycholate solution in the subcutaneous tissue can promote its direct chemical reaction on the cellular walls of the bulbs and follicular papillae in the superficial subcutaneous tissue. The inflammation and subcutaneous fibrosis triggered by lyses of adipocytes could also affect the hair cycle. There is also possibility of diffuse alopecia areata, triggered by the inflammation of the underlying chemical panniculitis. The possibility of inadvertent injection of medical silicone, which lubricates the plungers of the syringes for decreasing the attrition with the inner wall of the tubes, is not ruled out. Since the position of the syringe during the submental injection is tilted upwards, in case of the solubilization of the silicone, due to its lower density relative to that of the water, it may migrate to the upper portion of the liquid to be injected. The lubricant used in syringes, when injected into the subcutaneous tissue, can cause fibrosing lipogranuloma with resulting alopecia.

The product ATX-101 (Kybella®/Belkyra®) is not yet available in Brazil and the only products containing deoxycholate are purchased from dispensing pharmacies specializing in injectable substances, with a heightened concern about higher potential risk of mycobacterial infection as compared with that relative to large scale industrialized products. Unfortunately, Brazilian dermatologists who pioneered the field of the effectiveness of injections containing deoxycholate for treating fatty deposits<sup>3,4</sup> still await for the responsible laboratory to make the product commercially available.

Taking into consideration the possibility of alopecia in patients who wear facial beard or those who do not tolerate the edema caused by the deoxycholate, there is the alternative of indicating the “cosmetic lipoatrophy”, proposed in 2009 by Hexsel,<sup>5</sup> using minimal quantities of triamcinolone as the active substance, with lasting effect, nevertheless apparently momentary, and with capillary growth as a possible side effect. ●

#### PARTICIPATION IN THE ARTICLE:

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