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Panitumumab-Related Eyelash Elongation in a Patient With Metastatic Gastrointestinal Carcinoma

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INTRODUCTION

Monoclonal antibodies targeting epidermal growth receptor factor (EGFR) are widely used in the treatment of diverse types of cancers. Among these drugs is panitumumab, a humanized immunoglobulin specific to EGFR inhibition, approved for the treatment of metastatic colorectal cancer.[1] EGFR inhibitors (EGFRIs), despite the fact that they induce no severe systemic manifestations, may frequently cause cutaneous toxicity.[2] Therefore, even with good systemic tolerance to treatment, some patients may choose to discontinue drug use. In case of toxicity, papulopustular eruptions, xerosis, pruritus, paronychia, hyperpigmentation, and hair alterations may be observed.[2]

Eyelash trichomegaly is an unusual effect of this class of drugs, most frequently associated with cetuximab.[3] We present a case of a 68-year-old female patient undergoing treatment for metastatic colorectal cancer with panitumumab who developed elongation of the eyelashes and nasal hair (vibrissae).

CASE REPORT

A 68-year-old female patient underwent colecystectomy due to severe biliary colic. During surgery, peritoneal lesions suggestive of peritoneal carcinomatosis were observed. A diagnosis of mucinous adenocarcinoma was confirmed by histopathology report.

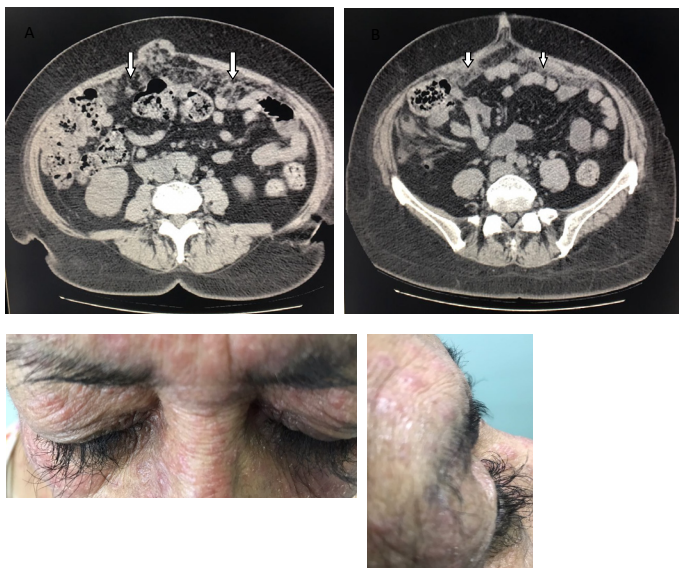
Immunohistochemical evaluation suggested that the tumor originated in the gastrointestinal tract and had a staining pattern consistent with colorectal origin, although no apparent lesions had been detected during colonoscopy or other imaging tests, including CT-scan of the chest, abdomen and pelvis.

Palliative chemotherapy was indicated. Twelve cycles of a 6-month Folfox regimen (5-FU plus oxaliplatin) associated with targeted therapy with bevacizumab, a monoclonal antibody that blocks the action of vascular endothelial growth factor (VEGF), were chosen. Maintenance therapy was subsequently prescribed with the chemotherapy agent 5-Fluorouracil, from the class of antimetabolites. After 3 months of maintenance therapy, there was an increase in CEA tumor marker associated with an increase in peritoneal lesions. Treatment with Folfiri regimen (consisting of folinic acid, 5-Fluorouracil, and irinotecan) associated with panitumumab was then prescribed for 6 months.

At the beginning of panitumumab therapy, the patient developed skin toxicity with overgrowth of the eyelashes and nasal hairs (vibrissae) (Figure). Although it is not a severe or systemic adverse drug reaction, this side-effect caused cosmetic problems and discomfort to the patient and she was managed with eyelash trimming.

The patient had a good performance status, thus, continuous palliative care was indicated using palliative chemotherapy with panitumumab. She achieved a good response with control of cutaneous side-effects using prophylactic oral doxycycline, moisturizer, daily sunscreen, and topical hydrocortisone. The patient maintains regular follow-up visits with a dermatologist.

FIGURE 1. Eyelash trichomegaly in a 68-year-old female patient. Arrows indicate peritoneal carcinomatosis.



DISCUSSION

The patient exhibited elongation of the eyelashes and nasal hairs (vibrissae) secondary to panitumumab therapy. The mechanism behind this effect has still not been fully elucidated, although it is related to EGFR inhibition.[6] It is known that EGFR is expressed in the skin and hair follicles and plays an important role in the normal development of these body parts.[2] Therefore, EFGR inhibition may frequently generate toxicity.

EGFR is a transmembrane glycoprotein found in cells of epithelial origin. It has three components: an extracellular ligand binding domain, a transmembrane region, and an intracellular tyrosine-kinase domain. EFGR inhibitors may function as a monoclonal antibody, acting in the extracellular medium as panitumumab, or in the intracellular medium as tyrosine-kinase inhibitors.[7]

EFGR inhibitors have been associated with side-effects such as hypertrichosis, alopecia, and changes in hair pigmentation, growth, and texture. These effects are not as common as skin manifestations.[7] The severity of skin eruptions may be ameliorated with skin care, topical antibiotics, immunomodulating agents, prophylactic use of tetracyclin and minocyclin, avoiding dose reduction, or discontinuation of drug treatment.[4,5] In contrast, eyelash trichomegaly is not a drug-limiting adverse effect nor does it interfere with drug action.[2]

Eyelash trichomegaly may be congenital or acquired. It has also been observed in patients with Oliver-McFarlane syndrome, oculocutanous type I albinism, systemic infection, or oncologic patients. Furthermore, this adverse reaction has been perceived by patients undergoing oncology treatment with monoclonal antibodies against EGFR, such as cetuximabe or panitumumab.[7]

These drugs inhibit EGFR, which is expressed on hair follicle epithelium. Therefore, it is believed that trichomegaly is attributable to EGFR inhibition, leading to premature maturation of epithelial cells of the hair follicle, resulting in deregulated gene expression of keratin.[7]

This side effect appears after 3 weeks of treatment and may occur up to 8 months after initiatiation of therapy with EGFR inhibitor. The onset of effect occurs at a median time period of 12 weeks.[7]

Elongation of the eyelashes, although not severe, causes a number of problems in a patient's life, such as discomfort during blinking, difficulty when wearing eyeglasses, and even the occurrence of corneal conditions, eg, erosions, irritation, infections, scarring, and ulcers. The condition may be managed cosmetically with trichotomy to improve symptoms experienced by patients. Furthermore, this adverse effect is probably related to a better prognosis, and may be used as a surrogate clinical marker.[2] Trichomegaly is a side-effect that does not contraindicate continuous treatment with EGFR inhibitors.[6,8]

CONCLUSIONS

Eyelash trichomegaly is an unusual side-effect associated with the use of EFGR inhibitors. These drugs are used in the treatment of oncology patients and are represented by humanized monoclonal antibodies or tyrosine-kinase inhibitors. Elongation of the eyelashes may generate discomfort and ocular sequelae, mainly due to cosmetic issues, and can be managed with trichotomy. Nevertheless, when therapy is discontinued, the eyelashes usually cease to grow and often return to their original length.

DISCLOSURES

The authors report no conflicts.

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