

Case Report

Azathioprine induced anagen effluvium: a rare case report

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ABSTRACT

Anagen effluvium occurs due to an agent or event that drastically reduces the metabolic activity of the matrix cells of the hair follicle. At any given time more than 80% of scalp hair is in the anagen phase of the hair cycle. Hence the resulting hair loss is abrupt and extensive. In majority of the cases, it occurs in association with cancer chemotherapy and radiation, other causes being rare. Here we report a case of a middle aged female suffering from Atopic dermatitis that was put on treatment with Azathioprine for the same. Treatment with Azathioprine was followed by a diffuse and extensive hair loss from the scalp associated with painful oral ulcers and marked leucocytopenia within a month of administration. The hair grew back within four months of stopping Azathioprine. This case report is an attempt to highlight a rare but extremely distressing side effect of Azathioprine which is a commonly used drug in dermatology.

Keywords: Anagen effluvium, Azathioprine, Atopic dermatitis

INTRODUCTION

Normal human hair can be classified according to the three phases of their growth cycle: anagen, catagen, and telogen. Anagen hair is in a growing phase, during which the matrix cells of the hair follicle undergo vigorous mitotic activity. Of the 100,000 hair on the average scalp, 10-15% is in the catagen or telogen phase at any time. Most hair follicles are in the anagen stage at any given time.¹ The average length of the anagen phase on the scalp is 1000 days. Anagen effluvium results from an insult that impairs the mitotic or metabolic activity of the matrix cells of the hair follicle. The hair loss is extensive and diffuse and is usually the result of an exposure to chemotherapeutic agents and some inflammatory diseases.²

CASE REPORT

A 35 year old female presented to the Dermatology outpatient department of a tertiary care hospital with the

complaint of diffuse hair loss from the scalp over a short period of five days. Concurrently with the onset of hair loss, the patient developed painful oral ulcers over the palate. The patient was a known case of Atopic dermatitis and had been put on tablet Azathioprine 50 mg twice a day for 15 days initially which was further extended for 15 more days. The patient developed these adverse effects 24 days after the start of treatment.

On examination of the scalp, a diffuse non-scarring alopecia was seen. It was more on the vertex and the frontal region than on the temporal and the parietal regions (Figure 1 and 2). There were no signs of any inflammation, scaling or atrophy. On performing a hair pull test, hair came off in massive clumps with relatively little effort (Figure 3). The oral mucosa revealed several ulcers on the hard palate (Figure 4). The patient's complete blood count revealed marked leucocytopenia with a total leucocyte count of only 900 per cubic millimeter with the differential neutrophil count being 7 percent. Her liver and renal function tests were within

normal limits. The anti-nuclear antibody test was negative.



Figure 1: Azathioprine induced non-scarring alopecia over the frontal region.



Figure 2: Azathioprine induced non-scarring alopecia over the vertex.



Figure 3: Clumps of anagen hair obtained on performing the hair pull test.

Azathioprine was immediately stopped. The patient was administered Filgrastim (recombinant human colony stimulating factor) at a dose of 300 µg subcutaneously once daily for 3 days. The leucocyte count began to normalize over a week. Subsequently the patient's hair grew back to full length and volume within 4 months.

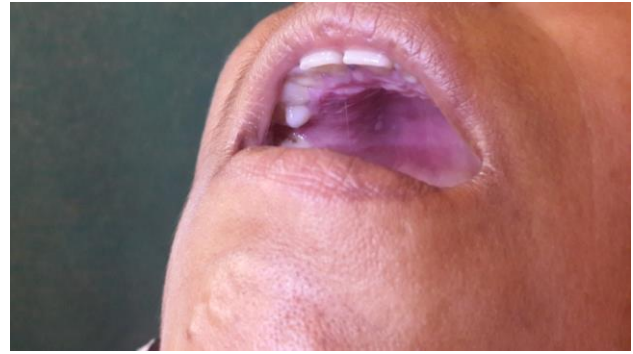


Figure 4: Azathioprine induced oral ulcerations seen on the hard palate.

DISCUSSION

Anagen effluvium is the abrupt loss of hair that are in their growing phase (anagen) associated with chemotherapy and radiation to the head and neck.³ Apart from these, it can also be caused by severe protein energy malnutrition, pemphigus vulgaris,⁴ alopecia areata (AA), and exposure to toxic agents like mercury, boron, etc.^{2,5,6} Other medications that can rarely cause anagen effluvium include bismuth, levodopa, colchicine and cyclosporine.³ Hair shedding usually begins 1 to 3 weeks after this incident. It is usually reversible within 1 to 3 months after stopping the offending agent.⁷

Anagen Effluvium is considered synonymous with chemotherapy-induced alopecia and other causes are rarely considered. Azathioprine is not commonly known to cause anagen effluvium. After a thorough literature search, we could find very few reports of azathioprine-induced anagen effluvium. In one of these cases, the patient was put on azathioprine for treating leukocytoclastic vasculitis, the other case involved its administration for concomitant plica neuropathica with pancytopenia and the third was for a patient of unstable vitiligo.⁸⁻¹⁰

Hence we report this case to bring forth a rare but significant side effect of Azathioprine which is a common immunosuppressive treatment modality in various dermatological diseases.

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