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Case Report

Telogen effluvium: Long term Covid-19 symptom

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Abstract Telogen effluvium is temporary hair shedding after experiencing huge amount of stress in the form of trauma, shock or illness. We present 2 patients with excessive hair fall around 2 to 3 months after getting coronavirus infection.

Key words
Telogen effluvium, Covid-19, personal protective equipment, post-febrile alopecia.

Introduction

The COVID-19 pandemic caused by the novel coronavirus (SARS-COV-2) continues to reshape the globe. It has now affected 200 plus countries and territories across the world.[1] The COVID-19 pandemic is affecting all aspects of health and society.[2] Almost all medical specialties are faced with very specific problems. Skin being the largest organ of the body has shown various manifestations, including contact dermatitis because of protective gear, couple of skin conditions due to prolonged use of personal protective equipment (PPE), exacerbation of pre-existing skin diseases, vasculitic and vasculopathic skin lesions.[3] Although the list of COVID-19 symptoms from the U.S CDC (US centres for disease control and prevention CDC) does not include hair loss but the link between hair loss and COVID-19 is just starting to be reported from various parts of the world.[4]

Telogen effluvium is a relatively common dermatological condition that entails temporary hair loss from excessive shedding due to a shock to the system, often triggered by a variety of situations, including surgery, major physical or psychological trauma, any kind of long term infection or high fever, extreme weight loss, change in diet and certain diseases like autoimmune and hormonal imbalances.[5]

Acute telogen effluvium is an acute-onset scalp hair loss likely to be related to a specific event or trigger 6-12 weeks earlier. There is premature termination of anagen phase and the follicle is precipitated into catagen and transforms into a resting stage that mimics telogen.[3,6] Hair loss is one of the relatively newer potential findings in the list of long-term sequelae of COVID-19.[6]

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Case reports

Case 1

48 years female with no known co-morbidity, developed mild dry cough, fever of 100 ° F for 3-4 days, abdominal discomfort and diarrhea. Her PCR for COVID-19 turned out to be positive in May 2020. Other investigations including CBC, ferritin, LDH and blood sugar were within normal range. She took nutritional supplements during the illness including zinc, vitamin C, calcium, vitamin D for few weeks. She recovered from all symptoms in 10-14 days, other than fatigue and malaise. She noticed gradually increasing drastic hair fall in last 3

Figure 1

Figure 2

Figure 3

Figure 4

weeks with complaints of shedding of full length hair while brushing and during shower. On scalp examination hair pull test was positive from vertex, with normal club hairs. Diagnosis of acute telogen effluvium was made and patient was guided and counseled regarding treatment **(Figure 1)**.

Case 2

42 years female was tested positive for PCR for COVID-19 after developing loss of taste and smell in first week of June 2020. She did not develop any other symptom at that time but presented with steadily increasing hair fall since last 1 month. She is non-diabetic and non-hypertensive. Her Hb, ferritin and thyroid function tests were within normal range and serum vitamin D 12 ng/ml. Scalp examination showed decreased hair density and positive hair pull test with telogen hairs having a white bulb. She was diagnosed as having acute telogen effluvium and started on treatment **(Figure 2)**.

Case 3

32 years female with no co-morbidity developed high grade fever with dry cough for 4-5 days. Her family members were positive for Covid-19 at that time but her PCR for Covid-19 was negative. Her Ferritin and LDH were mildly raised and serum vitamin D level was severely deficient. Other investigations including CBC, blood sugar, TSH were within normal range. Her Covid-19 IgG after a month was positive when she started noticing excessive hair fall from scalp. Hair pull test was positive with normal club hairs and she was guided on the lines of management of telogen effluvium **(Figure 3)**.

Case 4

Another young 37 year female presented with huge amount of hair loss, 2 months after developing low grade fever, diarrhea and malaise and was tested positive for Covid-19 PCR. She was not diabetic and her haemoglobin, TSH, free T3, T4 and vitamin D levels were within normal range. Gentle hair pull showed numerous telogen hairs specially on vertex. Diagnosis of acute telogen effluvium was made

and patient was counseled regarding treatment **(Figure 4)**.

Discussion

Hair loss can be caused by genetic predisposition, hormonal imbalances, autoimmune diseases, drugs, age, other medical conditions, starvation and stress. Most of the COVID-19 patients are having telogen effluvium which is a non-scarring, temporary hair loss as a result of an abnormal shift in follicular cycling.[6,7] There are several risk factors associated with COVID-19 related hair loss including nutrients deficiency like iron, biotin and vitamin D.[9] One of the major reasons which can lead to hair shedding could be the immense physical and psychological stress on the body. It can also be attributed to poor nutritional intake and loss of appetite in COVID-19 patients. High temperature of coronavirus infection may trigger "post-febrile alopecia". Telogen effluvium can be more common in individuals who have low vitamin D3 and ferritin levels.[3,6,9]

Scalp hair pluck reveals that an average of 86% scalp hair are in anagen, 1-4% in catagen and 10-13% in telogen phase. When facing a major stress or shock, upto 50% of hair can sprint ahead to the shedding phase. Telogen effluvium is mainly a clinical diagnosis based on medical history and scalp & hair examination. Telogen hairs have a white bulb and will not have a gel-like sheath covering around that end of hair. Scalp biopsy is rarely needed for its confirmation in doubtful cases.[5]

The exact cause of COVID-19 related hair loss in not known, but may be linked to genetics, immune system, nutritional status of patient and have been recently linked to seasonal shedding in some parts of the world like USA in a survey by Natalie Lambert and Prashasti Awasthi.[10,11]

In another survey on Survivor Corps Facebook Group in India, 418 respondents indicated extreme hair fall after being diagnosed with COVID-19.[12]

Hair loss is the latest Post COVID-19 symptom to emerge among long haulers. Although it can be extremely distressing but considering the transient nature of the disease, patients can be re-assured to be recovered once the underlying issue has been resolved, through dialing down the stress levels and taking care of nutritional requirements of the body. As long as there are no underlying conditions like male or female pattern hair loss, adrenal fatigue or nutritional problems, telogen effluvium will resolve on its own.[6,10]

COVID-19 pandemic has caused profound psychological impacts on the society as a whole and long term sequelae of this disease is further adding to this agony. Post Covid excessive hair fall could be extremely distressing for the patients and may be a stepping-stone for their mental health.[13]

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