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Weight Loss Surgery Induced Telogen Effluvium (We Loss SITE) Management – Our Experiences

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Abstract

Telogen effluvium, a condition of non-inflammatory, no-scarring, diffuse hair loss after weight loss surgery. A through history taking and videodermatoscopy is an effective tool for evaluation of a patient with weight loss surgery-induced teleogen effluvium (We Loss SITE). Cyclical nutritional therapy, low level laser therapy, autologous platelet rich plasma are effective treatments for telogen effluvium. This case report shares our experience in the management of a patient with weight loss surgery-induced telogen effluvium. An OPD visit was made by a 23-year-old male patient from Calicut, Kerala, who works as a driver and has had hair loss for two years following bariatric surgery. Since childhood, the patient has been obese. When she became pregnant, his mother had uncontrolled diabetes. At nine months old, she had a caesarean section because of macrosomia. When the patient was delivered, their weight was 6 kg. With age, he began to put on weight gradually. It might be challenging to differentiate between female pattern hair loss and telogen effluvium, a non-inflammatory, widespread hair loss disorder. The entire scalp usually experiences hair loss, albeit on occasion the temporal regions show the most signs of it. The hair-pull test is positive, with increased shedding of telogen hairs when telogen effluvium is active. In our patient with weight loss surgery induced telogen effluvium, videodermatoscopy was helpful for diagnosis. Autologous platelet-rich plasma therapy, low-intensity laser therapy, and cyclical nutritional therapy all contributed to the restoration of better hair.

Keywords: Weight loss surgery, bariatric, videodermatoscopy, low-level laser, cyclical nutritional therapy, platelet rich plasma, telogen effluvium

INTRODUCTION

A non-scarring form of alopecia called telogen effluvium causes diffuse scalp hair loss about three months after a trigger factor. Surgically induced telogen effluvium (SITE) is a postoperative complication. There have also been sporadic descriptions of weight loss-induced telogen effluvium (We Loss SITE), which causes excessive hair loss because of anagen follicles connected to the procedure entering the telogen phase too soon [1, 2].

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MATERIALS AND METHODS

In a South Indian tertiary care hospital, this study is being conducted. An OPD visit was made by a 23-year-old male patient from Calicut, Kerala, who works as a driver and has had hair loss for two years following bariatric surgery. Since childhood, the patient has been obese. When she became pregnant, his mother had uncontrolled diabetes. At nine months old, she had a caesarean section because of macrosomia. When the patient was delivered, their weight was 6 kg.

With age, he began to put on weight gradually. When he played badminton in the tenth grade, his

weight was 120 kg. After having surgery on his left knee joint, which left him bedridden for seven months, his weight rose even more. At age 20, he weighed 175 kg. He underwent weight loss surgery at our facility in 2019. He had a sleeve gastrectomy done under a laparoscope. After surgery, his weight gradually dropped till it is currently 83 kg. His scalp hair was thick and dense prior to surgery (Figure 1). Nevertheless, he started to experience scattered hair loss seven weeks after surgery.

Figure 1. Before the treatment of telogen effluvium.

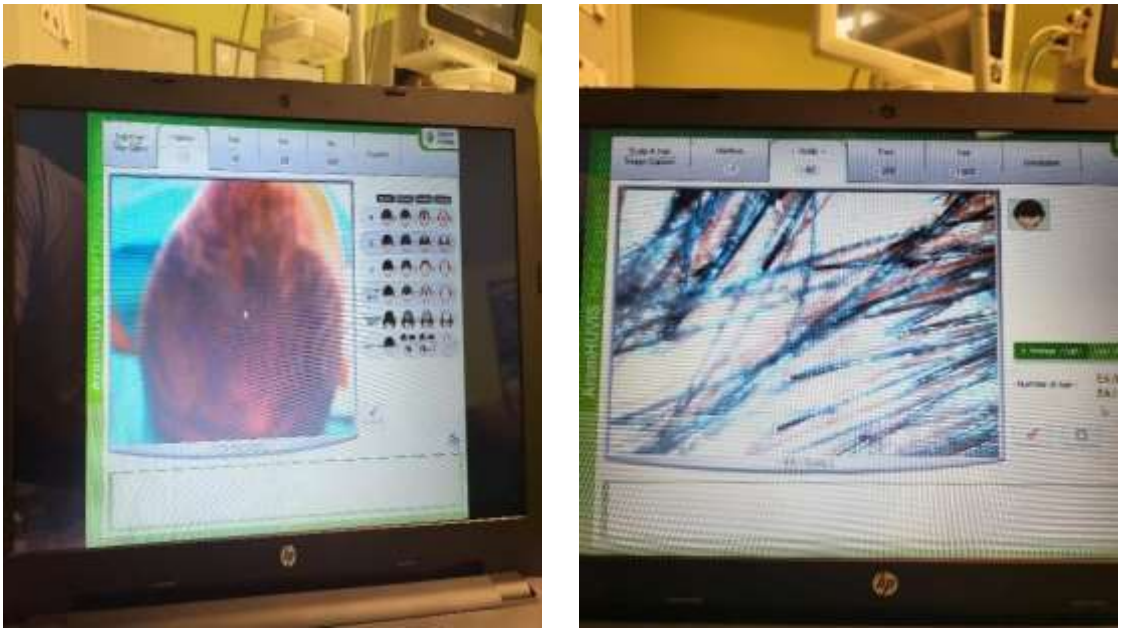

Figure 2. (a) Videodermatoscopy -1x magnification to grossly assess hair loss,
(b) Videodermatoscopy -60x magnification to assess scalp.

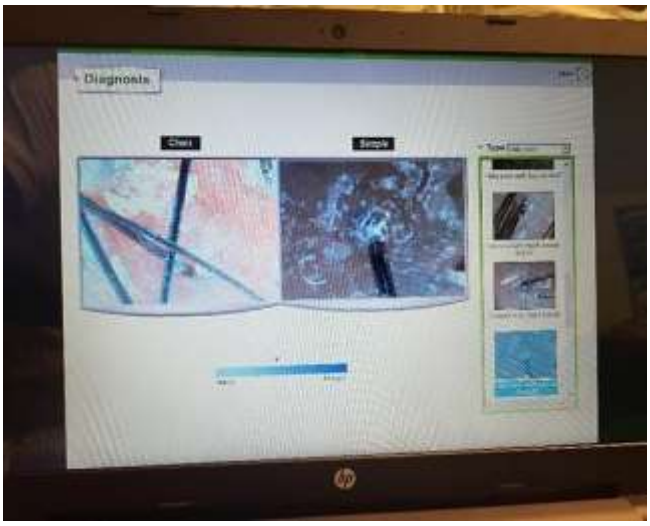

Figure 3. Videodermatoscopy -200x magnification to assess pores.

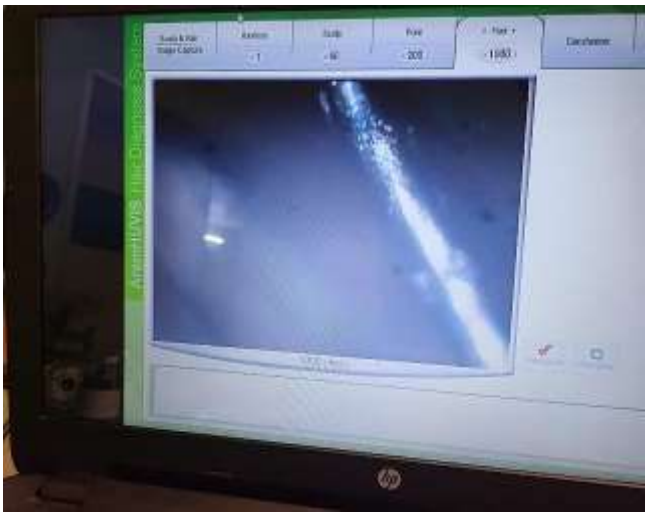

Figure 4. Videodermatoscopy -1000x magnification to assess hair follicles.

Telogen hair loss has increased in the hair pull test, which is positive.

A comprehensive laboratory assessment was conducted, encompassing calcium, ferritin, folate, iron, and vitamins (A, B1, B6, B12, and D 25-hydroxy). There were no abnormalities found in the examinations. Eleven months after the operation, a follow-up clinical evaluation showed that his hair loss had lessened in both rate and extent. His clinical appearance and medical history were correlated, which led to the diagnosis of telogen effluvium. His hair loss was caused by the linked causal event of bariatric surgery. His routine laboratory investigations ruled out hair loss related to nutritional deficiencies.

A videodermatoscopy (computerized folliscope measurement) study with 1x, 60x, 200x, and 1000x magnification was performed to observe scalp skin and hair shown in Figures 2, 3, and 4. The study revealed diversity in hair diameter, perifollicular pigmentation, and lack of scarring, which consists of with the diagnosis of telogen effluvium.

He received low-level laser therapy shown in Figure 5, autologous platelet-rich plasma shown in

Figure 6, and cyclical nutritional therapy shown in Figure 7 for his care.

Figure 5. low level laser therapy.

Figure 6. Autologous platelet rich plasma therapy.

Figure 7. After treatment with cyclical nutritional therapy, LLLT, APRP.

Table 1. Cyclical nutritional therapy.

Days of the Week	Supplement Combinations
Monday and Thursday	Antioxidant, calcium, vitamin D3, and magnesium.
Tuesday and Friday	Iron, folic acid, vitamin C, and omega 3.
Wednesday and Saturday	Essential amino acids, B-complex, and biotin.
(Sunday-no medicines)	

2% ketoconazole and zinc pyrithione shampoo wet your hair, massage the shampoo into the scalp, and keep for 3 minute and wash once in every 3 days, as shown in Table 1.

Minoxidil 2% solution-1 mL morning and 1 mL evening – everyday.

Results

In our patients with weight loss surgery-induced telogen effluvium, videodermatoscopy was helpful for diagnosis. Autologous platelet rich plasma therapy, low-intensity laser therapy, and cyclical nutritional therapy all contributed to the restoration of better hair.

Discussion

It might be challenging to differentiate between female pattern hair loss and telogen effluvium, a non-inflammatory, widespread hair loss disorder. Since telogen effluvium typically occurs several months before psychological stress, childbirth, weight loss, or medication (e.g., interferons, antihyperlipidemic medicines, derivatives of retinol, anticoagulants), a complete medical history is crucial [3]. The entire scalp usually experiences hair loss, albeit on occasion the temporal regions show the most signs of it. The hair-pull test yields a positive result because telogen effluvium is active and causes more telogen hair shedding [4].

Videodermoscopy

A non-invasive method for examining the scalp's skin and hair is called videodermoscopy, which is helpful in evaluating hair loss for differential diagnosis and prognosis assessment [5–6]. The videodermoscopy equipment can take high-resolution digital pictures (up to 1000x magnification) and save them for comparison later. It features four different magnification levels: 1x for assessing hair loss, 60x for assessing the scalp, 200x for assessing the pores, and 1000x for assessing the ass hair. It is a pre-biopsy procedure that is used in conjunction with trichoscopy to help the dermatologist determine where to extract a skin sample [6].

Cyclical Nutritional Therapy

Recent studies by Irwig [7] and Traish et al. [8] highlight the point that long-term use of anti-androgens increases the possibility of negative side effects that may also be irreversible. As a result, strengthening hair roots, giving cells a toxin-free environment, and encouraging hair development are more advantageous from a scientific standpoint than attempting to address unproven theories. Supplements including vitamins, minerals, and other nutrients can help strengthen hair and encourage growth, which will benefit overall health and wellness as well as hair development. The natural stock hair roots on the scalp that are responsible for falling hair gradually deteriorate. By strengthening these roots, the primary source of falling hair can be stopped and additional hair loss can be avoided. It would lessen the quantity of hair that falls during each cycle, in a way. Antioxidants can inhibit the effects of dihydrotestosterone (DHT). An all-natural alternative approach is preferred since hair care programs have long-term practical applications. Hair growth requires many nutrients, including antioxidants, amino acids, vitamins, minerals, and fatty acids, as the cellular turnover and metabolic activity in hair follicles is comparable to that of bone marrow and intestinal epithelium [9]. The utilization of many supplements has been shown to disrupt the absorption and efficacy of individual supplements during nutrient analysis. When administered simultaneously, calcium and iron can chelate one another and reduce absorption [10]. Frequent iron consumption can form mucosal barriers to iron absorption [11];

yet iron excesscan undergo the Fenton reaction and become pro-oxidant [12, 13]. Overabundance of calcium in the cells might cause them to die [14]. Increased blood levels of vitamin C are not guaranteed by high vitamin C consumption [15]. Antioxidants that are consumed in excess counteract this benefit and become pro-oxidants [16]. So effective cyclical nutritional therapywas planned to maximize the nutrient supplement benefit and minimize the side effects of supplement interaction.

Platelet-Rich Plasma

A form of autologous plasma that contains platelets, growth factors, and cytokines is called platelet-rich plasma. Initially, it was applied during hair transplant treatments, with varying degrees of success. Its usage in isolation to treat telogen effluvium and pattern hair loss has been investigated recently. Platelet-rich plasma may help with hair regeneration, according to preliminary data [17]. Redness, discomfort, and pinpoint bleeding are some of the side effectsat the injection site.

Low-Level Laser Therapy

An FDA-approved treatment for telogen effluvium and pattern hair loss is low-level laser therapy. Although the exact method by which it reduces hair loss is unknown, several theories include stimulating keratinocytes or follicular stem cells, promoting mitosis, increasing blood flow, boosting cell metabolism, and having anti-inflammatory properties [18]. Over the course of 24 to 26 weeks, low-level laser therapy was shown to enhance hair density in two double-blind, sham device-controlled, randomized studies. However, in one of the trials, the differences in overall improvement evaluations were not statistically significant [19].

CONCLUSIONS

A through history taking and videodermatoscopy is an effective tool for evaluation of a patient with weight loss surgery-induced teleogen effluvium (We Loss SITE) therapy. Autologous platelet rich plasma is an effective treatment for telogen effluvium with low- level laser therapy is cyclical nutritional therapy.

REFERENCES

1. Thiedke CC. Alopecia in women. Am Fam Physician. 2003;67(5):1007–1014.
2. Mounsey AL, Reed SW. Diagnosing and treating hair loss. Am Fam Physician. 2009;80(4):356–362.
3. Malkud S. Telogen effluvium: a review. J Clin Diagn Res. 2015;9(9):WE01–WE03. doi:10.7860/JCDR/2015/15219.6492.
4. Rebora A. Telogen effluvium: a comprehensive review. Clin Cosmet Investig Dermatol. 2019;12:583–590. doi:10.2147/CCID.S200471.
5. Ross EK, Vincenzi C, Tosti A. Videodermoscopy in the evaluation of hair and scalp disorders. J Am Acad Dermatol. 2006;55(5):799–806. doi:10.1016/j.jaad.2006.04.058.
6. Bernstein RM, Rassman WR. Densitometry and video-microscopy. Hair Transplant Forum Int. 2007;17(2):41–51. doi:10.33589/17.2.0041.
7. Irwig MS. Persistent sexual side effects of finasteride: could they be permanent?. J Sex Med. 2012;9(11):2927–2932. doi:10.1111/j.1743-6109.2012.02846.x.
8. Traish AM, Hassani J, Guay AT, Zitzmann M, Hansen ML. Adverse side effects of 5α-reductase inhibitors therapy: persistent diminished libido and erectile dysfunction and depression in a subset of patients. J Sex Med. 2011;8(3):872–884. doi:10.1111/j.1743-6109.2010.02157.x.
9. Rajput Rajendrasingh RR. The concept of cyclical nutritional therapy for hair growth which can be applied for wellness. J Nutr Food Sci. 2017;7(4):615. doi:10.4172/2155-9600.1000615.
10. Roughead ZK, Zito CA, Hunt JR. Inhibitory effects of dietary calcium on the initial uptake and subsequent retention of heme and nonheme iron in humans: comparisons using an intestinal lavage method. Am J Clin Nutr. 2005;82(3):589–597. doi:10.1093/ajcn.82.3.589.
11. Brown Jr EB, Dubach R, Moore CV. Studies in iron transportation and metabolism. 11. Critical

analysis of mucosal block by large doses of inorganic iron in human subjects. J Lab Clin Med. 1958;52:335–355.
12. Halliwell B. Antioxidants in human health and disease. Annu Rev Nutr. 1996;16(1):33–50. doi:10.1146/annurev.nu.16.070196.000341.
13. Halliwell B. The antioxidant paradox. Lancet. 2000;355(9210):1179–1180. doi:10.1016/S0140-6736(00)02075-4.
14. Wang L, Li Q, Duan XL, Chang YZ. Effects of extracellular iron concentration on calcium absorption and relationship between Ca2+ and cell apoptosis in Caco-2 cells. World J Gastroenterol. 2005;11(19):2916–2921. doi:10.3748/wjg.v11.i19.291.
15. Meydani M. Antioxidants in the prevention of chronic diseases. Nutrition in clinical care: an official publication of Tufts University. 2002;5(2):47–49. doi:10.1046/j.1523-5408.2002.00002.x.
16. Rutkowski M, Grzegorczyk K. Adverse effects of antioxidative vitamins. Int J Occup Med Environ Health. 2012;25(2):105–121. doi:10.2478/S13382-012-0022-x.
17. Schiavone G, Raskovic D, Greco J, Abeni D. Platelet-rich plasma for androgenetic alopecia: a pilot study. Dermatol Surg. 2014;40(9):1010–1019. doi:10.1097/01.DSS.0000452629.76339.2b.
18. Jimenez JJ, Wikramanayake TC, Bergfeld W, Hordinsky M, Hickman JG, Hamblin MR, et al. Efficacy and safety of a low-level laser device in the treatment of male and female pattern hair loss: a multicenter, randomized, sham device-controlled, double-blind study. Am J Clin Dermatol. 2014;15(2):115–127. doi:10.1007/s40257-013-0060-6.
19. Kim H, Choi JW, Kim JY, Shin JW, Lee SJ, Huh CH. Low-level light therapy for androgenetic alopecia: a 24-week, randomized, double-blind, sham device–controlled multicenter trial. Dermatol Surg. 2013;39(8):1177–1183. doi:10.1111/dsu.12200.

