

Exacerbation of alopecia areata: A possible complication of sodium tetradecyl sulphate foam sclerotherapy treatment for varicose veins

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Abstract

A 40-year-old woman with a history of alopecia areata related to stress or hormonal changes was treated for bilateral primary symptomatic varicose veins (CEAP clinical score C2S) of pelvic origin, using a staged procedure. Her first procedure entailed pelvic vein embolisation of three pelvic veins using 14 coils and including foam sclerotherapy of the tributaries, using 3% sodium tetradecyl sulphate. Following this procedure, she had an exacerbation of alopecia areata with some moderate shedding of hair. Subsequently, she underwent endovenous laser ablation under local anaesthetic without incident. Seven months after the pelvic vein embolisation, she underwent foam sclerotherapy of leg and labial varicose veins using sodium tetradecyl sulphate. Two days following this procedure, she had a severe exacerbation of alopecia areata with gross shedding of hair. These two episodes of exacerbation of alopecia areata appear to be associated with sodium tetradecyl sulphate foam sclerotherapy of veins.

Keywords

Alopecia, varicose veins, sclerotherapy

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Introduction

In the United Kingdom, the National Institute of Health and Clinical Excellence (NICE) recommends that patients with symptomatic varicose veins should be referred to a vascular service, for investigation with venous duplex ultrasound scan and then offered treatment.¹ These guidelines recommend endovenous thermoablation with foam sclerotherapy as a second line, if endovenous thermoablation is not available or possible.

Foam sclerotherapy is made by mixing one of the detergent sclerosants, sodium tetradecyl sulphate (STS) or polidocanol (POL) with air, or a carbon dioxide and oxygen mixture.^{2,3} The resulting sclerosant foam is injected into a vein to be ablated, displacing blood and hence optimising contact between sclerosant and vein wall.⁴

It is increasingly becoming recognised that pelvic vein reflux (PVR) is associated with primary and recurrent leg varicose veins.^{5,6} In all, 14% of women with primary varicose veins have PVR directly refluxing into leg veins, rising to 20% in women who have previously given birth.⁷

Furthermore, untreated PVR has been shown to be associated with recurrent varicose veins in approximately one-third of women who have previously given birth.⁸ PVR is successfully treated by pelvic vein embolisation (PVE) of the pelvic truncal veins and foam sclerotherapy to ablate varicose tributaries in the pelvis.⁹

Alopecia is a general medical term used for hair loss, with different symptoms and causes associated with it. The classification of alopecia is still a challenge for clinicians (i.e. cicatricial vs non-cicatricial).¹⁰

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Figure 1. Bald patch of right scalp, possibly due to exacerbation of alopecia areata due to sclerotherapy with sodium tetradecyl sulphate (STS).

Case

A 40-year-old woman presented with bilateral symptomatic primary varicose veins and a history of alopecia areata.

Her alopecia started at the age of 13 during considerable family disruption and emotional trauma and concurrently undergoing menarche. She lost all of her scalp and body hair, retaining eyebrows and eyelashes only. She was otherwise fit and well, on no medication, with no alopecia in parents or four siblings. The alopecia responded to steroid injections, with regrowth a year later.

At the age of 19, she went to university and had another traumatic episode in her family's life, reaching national media attention. These stressful events caused a second episode of alopecia, affecting all of her scalp, eyebrows and eyelashes, and most of the hair on arms and legs. She did retain her pubic and axillary hair. She responded to steroid injections, regrowing her hair over 2 years.

At the age of 30, she had the first of three pregnancies, suffering scalp alopecia areata only after the first delivery. She was diagnosed hypothyroid and was given thyroid replacement. Autoimmune thyroiditis was excluded. She responded to steroid injections with regrowth occurring by 6 months. Her subsequent pregnancies passed without any significant hair shedding.

These three major episodes of alopecia were related to stress and/or significant hormonal changes. She has suffered from minor episodes of hair shedding, but no other significant episodes until those reported here.

With regard to her varicose veins, she had bilateral aching and, as per NICE CG 168¹ underwent venous duplex ultrasonography by a clinical vascular scientist. On the right, she had significant reflux in both great saphenous vein (GSV) and small saphenous vein (SSV). The proximal GSV was competent with the major route of venous reflux coming from a para-vulval vein emerging from the pelvis. This was refluxing into an incompetent Giacomini vein, which

was refluxing into the incompetent proximal SSV – the mid and lower part remaining competent. This suggested that the proximal SSV incompetence was secondary to the Giacomini reflux and hence PVR. Three incompetent perforators were emerging from mid Giacomini vein, through fascia, into posterior thigh varicosities.

On the left, there was no deep or superficial truncal reflux. All of the varicosities arose directly from an incompetent left para-vulval vein emerging from the pelvis and one incompetent perforator vein just above the ankle.

A transvaginal duplex ultrasound scan (TVUS) was performed to identify the source of PVR.¹¹ This confirmed the commonest pattern of PVR, left ovarian and both internal iliac vein territories exhibiting gross reflux.¹¹

Planned treated was PVE, followed by endovenous laser ablation (EVLA) of right GSV and SSV with TRansLuminal Occlusion of Perforator (TRLOP)¹² closure of perforators bilaterally and phlebectomies. Any residual varicosities would then be treated with ultrasound-guided foam sclerotherapy.

PVE of the left ovarian and both internal iliac veins was performed using foam sclerotherapy (2 mL 3% STS mixed 1:3 with 50:50 CO₂:O₂ 1:4 giving 8 mL of foam per injection). The total dose was 10 mL of 3% STS liquid.

Despite no immediate complication, the patient noticed moderate hair shedding in the days following the PVE although not significant enough to seek steroid injections.

Six weeks later, she underwent EVLA of right GSV and SSV with bilateral TRLOP closure of perforators and phlebectomies. This is performed under local anaesthetic and passed without complication. Post-operatively, she had no shedding of any hair.

Seven months after the PVE, she had ultrasound-guided foam sclerotherapy of residual varicosities of legs and labial varicosities. In total, she had 3 mL of 1% STS and 5 mL of 3% STS (1:4 foam with 50:50 CO₂:O₂). Two days after the sclerotherapy, she underwent substantial shedding from the scalp (Figures 1 and 2).



Figure 2. Posterior bald patch in same patient.

Discussion/conclusion

Alopecia as a complication of sclerotherapy with bleomycin has previously been described.¹³ However, this was intracavity sclerotherapy into the pleural space in a patient with poor renal function.

Medication causing hair loss is reported as being of two types: telogen effluvium and anagen effluvium.¹⁴ Telogen effluvium is said to be the more common form of drug-induced hair loss with hair regrowing slowly afterwards. Anagen effluvium is reported to be usually due to chemotherapy drugs, whereas telogen effluvium for most other drugs. However, detergent sclerotherapy is not included in the list.¹⁴

In conclusion, we have not proven that STS caused the exacerbation of alopecia areata, although the time course is suggestive that this is the case, particularly as the endovenous laser operation (which did not involve STS) did not result in any shedding. This case is reported in the hope that if this is a rare complication of STS sclerotherapy, other doctors who might only see one such case in a lifetime may be stimulated to report their cases, and so it will become clearer whether this is a rare complication of STS sclerotherapy or not.

Declaration of conflicting interests

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Ethical approval

Our institution does not require ethical approval for reporting individual cases or case series.

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Informed consent

Written informed consent was obtained from the patient(s) for their anonymised information to be published in this article.

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