

Familial Disseminated Cutaneous Glomuvenous Malformation: Treatment with Polidocanol Sclerotherapy

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ABSTRACT

Glomuvenous malformations (GVMs) present as asymptomatic multiple pink-to-blue nodules or plaques. Disseminated lesions are rare, representing 10% of all the cases. Familial cases are caused by mutations in the glomulin gene. A young male presented with multiple bluish-to-dusky red-coloured nodules 10–15 in numbers over the trunk, limbs and buttocks since 12 years of age. They ranged in size from 1 to 3 cm, partially to non-compressible and tender on palpation. There was no history of any systemic complaint. His sister and mother had similar lesions but in a limited distribution. Biopsy showed multiple ectatic dilated vascular channels lined by multiple layers of glomus cells consistent with the diagnosis of GVM. The biopsy of the lesions from the mother and sister also showed similar features. Mutation analysis for glomulin gene could not be done because of the unavailability of the facility at our setting. He underwent sclerotherapy with 3% polidocanol every 2 weeks, and there was significant improvement in the lesions after six sessions of sclerotherapy. The patient is under follow-up and there is no recurrence of the lesions over treated sites after 6 months.

KEYWORDS: Disseminated, familial glomuvenous malformation, polidocanol sclerotherapy

INTRODUCTION

Glomuvenous malformations (GVMs), also known as glomangiomas, are malformations composed of cells resembling the modified smooth muscle cells of the glomus body, a specialised form of arteriovenous anastomosis involved in thermal and baroregulation.^[1] Familial cases are caused by mutations in the glomulin gene.^[2] They usually present as pink-to-blue nodules or plaques occurring in childhood and adolescence. Multiple lesions are uncommon, representing <10% of all reported cases.^[3] We report here a case of familial disseminated cutaneous GVMs which was treated with polidocanol sclerotherapy.

CASE REPORT

A 26-year-old male presented with complaints of appearance of bluish-to-dusky red-coloured nodules

over the body since 12 years of age. The lesions first appeared over the left arm with gradual progression to the trunk, buttocks, lower limbs and back. There was scant bleeding from the lesions on trauma. There was no history of any ocular or central nervous system symptom, melena, hematemesis or epistaxis. On examination, there were a total of 10–15 lesions over the trunk, limbs and buttocks in the form of dusky red-to-bluish firm nodules ranging in size from 1 to 3 cm. They were non-compressible and mildly tender on palpation. There was no associated bruit or thrill. Over the left arm, there were grouped papules forming a plaque [Figure 1]. His sister and mother had similar lesions but in a limited distribution [Figures 2 and 3].

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Keeping the possibilities of GVM, blue rubber bleb nevus and venous malformation, a skin biopsy was taken from the nodule. Microscopic examination of the biopsy showed acanthosis, papillomatosis and multiple ectatic dilated vascular channels lined by multiple layers of glomus cells [Figure 4]. These histological features were consistent with the diagnosis of GVM. The biopsy of the lesions from the mother and sister also showed similar features. All the other investigations including hemogram, liver function tests, renal function tests, urine routine microscopy, stool for occult blood and coagulation profile were within normal limits. Colour Doppler of the limbs was also normal. Mutation analysis for glomulin gene could not be done because of the unavailability of the facility at our setting.

He underwent sclerotherapy with 3% polidocanol every 2 weeks. The lesions were injected directly using a 30 gauge needle. Blood was drawn back to ensure intraluminal position of the needle. The lesion was

then compressed to evacuate the intravascular blood. The sclerosant was injected slowly. The end-point of each injection was the mild blanching of the lesion. The average volume of sclerosant was 0.5–0.8 ml per lesion. Cotton balls were applied and the area was compressed using a short stretch compression bandage. The patient was then instructed to maintain the compression for 3 days.

He reported significant improvement in the lesions, with 60% flattening of the lesions and 90% reduction in tenderness after six sessions of sclerotherapy [Figure 5]. The side effects included pain during sclerotherapy and immediately after sclerotherapy. One of the lesions showed fibrotic changes after two sessions of sclerotherapy. This was treated with two injections of intralesional triamcinolone 10 mg/ml at an interval of 2 weeks after which there was significant improvement. The patient is under follow-up and there is no recurrence of the lesions over treated sites after 6 months.

DISCUSSION

GVMs can occur as sporadic and inherited lesions, and 64% of these cases in a series were familial.^[1] The pattern of inheritance for multiple GVMs is autosomal dominant with incomplete penetrance and variable

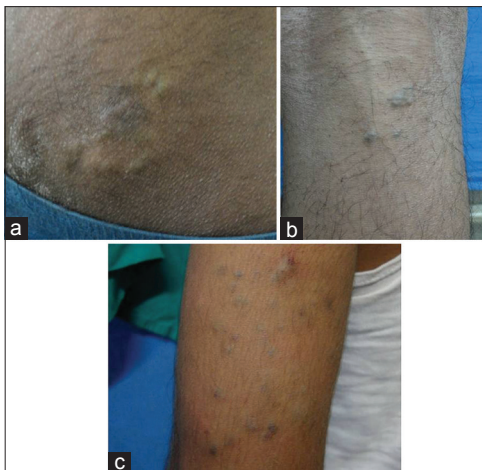


Figure 1: Multiple bluish-to-skin-coloured papules and nodules over (a) buttock (b) popliteal fossa (c) arm of the index patient



Figure 2: Bluish papules and nodules in the mother over face and buttock



Figure 3: Bluish papules over the face and arm in the sister

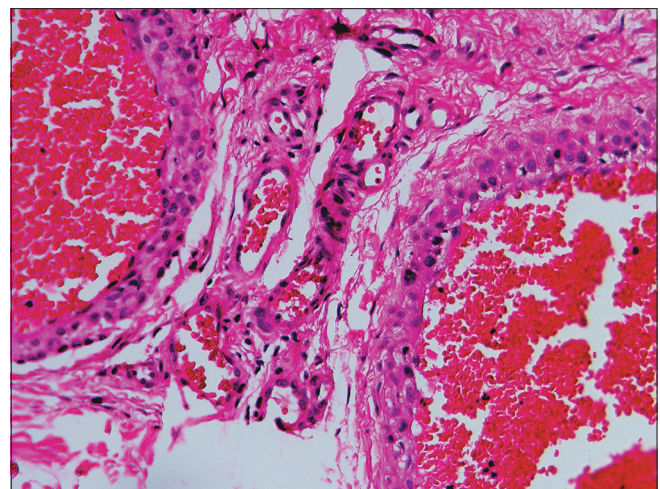


Figure 4: Dilated vascular channels congested with RBCs and lined by multiple layers of glomus cells

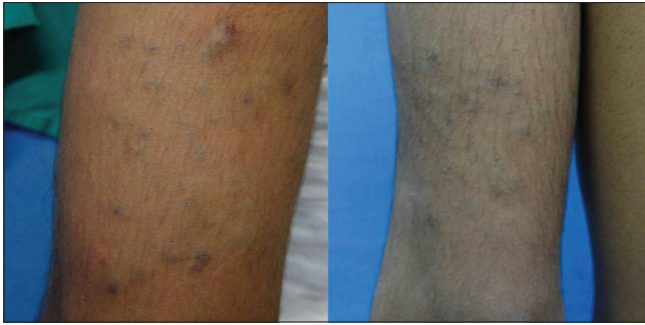


Figure 5: Considerable improvement in the lesions after 6 sessions of polidocanol sclerotherapy

expressivity involves mutations in the glomulin gene.^[2] Multiple GVMs are uncommon and account for <10% of all reported cases.^[3] Unlike solid glomus tumours which usually present in young adults with a predilection for subungual sites, GVMs present with multiple lesions, most often seen in children or adolescence. Furthermore, GVMs can occur in a wide anatomic distribution and are not only restricted to the sites known to contain glomus cells. Histologically, GVMs are less well circumscribed (not capsulated) and contain multiple irregular, dilated, endothelium-lined vascular channels that contain red blood cells. The vascular spaces are larger and they appear less cellular than solitary glomus tumor.^[4]

Our patient had multiple bluish nodules and pink-to-blue plaques in a disseminated pattern which is a rare pattern of presentation in glomangiomas.^[3] They generally present as blue-to-purple partially compressible papules or nodules that are grouped and limited to a specific area, most commonly to an extremity. Other variants are the disseminated type which consists of multiple lesions distributed over the body with no specific grouping and the congenital plaque-like glomus tumors which consist of either grouped papules that coalesce to form indurated plaques or clusters of discrete nodules and is the rarest variant of multiple glomus tumours. In addition, our case was a familial case of GVM with similar lesions in the mother and sister. The prevalence of inherited GVMs varies from 38% to 68% of the cases in various studies and inherited GVMs can present at birth or puberty whereas sporadic GVMs almost invariably diagnosed at birth.^[1]

Internal organ involvement with GVM is rare and has been reported to involve the gastrointestinal tract, trachea, nerve, bone, liver, pancreas and ovary.^[5-8] However, there appears no specific association with multiple cutaneous lesions and internal organ involvement. Our patient did not have any systemic complaint; hence, imaging studies for systemic involvement was not done. Malignant transformation (glomangiosarcomas) within glomus tumours is extremely rare and typically represents a

locally infiltrative malignancy; however, metastases have been described and are associated with a very poor prognosis.^[9] Size larger than 2 cm, rapid growth and deeper soft tissue involvement are the clues to suspect malignant transformation.^[9]

The treatment modalities reported for treatment of multiple glomangiomas are surgical resection, sclerotherapy, argon and carbon dioxide laser therapy, electron-beam radiation, etc., Excision may be difficult because of their poor circumscription, multifocal nature and large number of lesions. Hence, excision should be limited to symptomatic lesions only. Periodic observation of asymptomatic lesions is usually required.^[10] The prognosis for patients with glomangiomas is excellent, and most patients never experience any related medical problem.

Sclerotherapy involves introduction of a sterile solution into the lumen of a blood vessel or a vascular lesion to induce permanent endofibrosis and ablation of the vessel. Sclerotherapy has been used in treatment of lower limb varicose veins and telangiectasia, facial telangiectasia, pelvic and ovarian varicosities, vascular anomalies, oesophageal varices and haemorrhoids. Agents used in the treatment of glomangiomas and vascular anomalies have included absolute alcohol, hypertonic saline and sodium tetradecyl sulphate (STS). STS and polidocanol have an affinity for the lipid bilayer of the endothelium and unlike osmotic agents produce mural denaturation immediately on contact and hence are preferred agents for sclerotherapy.

We used polidocanol sclerotherapy in our patient with satisfactory results. Studies have shown that sclerotherapy is less effective in GVM than for venous malformations.^[11,12] Parsi and Kossard used STS with concentrations varying from 0.2% to 3% for a patient with multiple familial glomangiomas at 2 weekly intervals with remarkable improvement after an average of two sessions.^[13] One other study showed an excellent response of a plaque-like glomangioma with two sessions of 1% STS.^[14] Sclerotherapy with STS, polidocanol and hypertonic saline has been reported to be effective in patients with multiple GVMs that are located on the extremities, whereas sclerosants including polidocanol, pure ethanol and Ethibloc® (a mixture of zein, sodium amidotrizoate tetrahydrate, oleum papaveris and propylene glycol) were unsuccessful in a series of seven patients with large facial GVMs.^[15,16]

CONCLUSION

We hereby report a rare case of familial disseminated cutaneous GVM which was successfully treated with polidocanol sclerotherapy.

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Conflicts of interest

There are no conflicts of interest.

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