

Intralesional cryosurgery in benign vascular lesions: a good option for cherry angioma and hamartomas over port-wine stain

Criocirurgia intralesional em lesões vasculares benignas: boa opção para angioma rubi e hamartomas sobre mancha vinho do Porto

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ABSTRACT

Cryosurgery is a technique widely known and used among dermatologists. Intralesional application is already used to treat keloids and has the advantage of restricting the zone of action of low temperatures of liquid nitrogen. The use of contact cryosurgery in vascular lesions is well reported in the literature, but there are no intralesional technique publications on these types of lesions. Here, we report two cases, one of port-wine stain hamartomas in a 61-year-old patient and another of a cherry angioma in a 70-year-old patient, safely and satisfactorily treated with intralesional cryosurgery.

Keywords: Cryosurgery; Cryotherapy; Hamartoma; Hemangioma; Vascular malformations

RESUMO

A criocirurgia é uma técnica de vasto conhecimento e uso entre dermatologistas. A aplicação intralesional já é utilizada no tratamento de queloides e tem como vantagem restringir a zona de ação das baixas temperaturas do nitrogênio líquido. O uso da criocirurgia de contato em lesões vasculares é relatado, mas não há publicações sobre a técnica intralesional nesses tipos de lesões. Aqui, relatamos dois casos: 1- Hamartomas sobre mancha vinho do Porto em um paciente de 61 anos; e 2 - Angioma rubi em um paciente de 70 anos, ambos tratados de forma satisfatória e segura com criocirurgia intralesional.

Palavras-chave: Criocirurgia; Crioterapia; Hamartoma; Hemangioma; Mancha Vinho do Porto

INTRODUCTION

Vascular lesions are a reason for dermatological consultation for bleeding prevention or aesthetic motives. They can be congenital or acquired and are classified into tumors and malformations.^{1,2}

The port-wine stain (PWS) is a congenital vascular lesion presented as solid stains and unilateral plaques, with segmental distribution and demarcation in the midline. They can also present as small stains in any body region, varying in size, shape, and different shades of pink, red, and violet. In some cases, epithelial or mesenchymal hamartomas may develop over PWS.^{1,2}

Cherry angioma is a benign vascular lesion, acquired and extremely common, presenting as asymptomatic red papules, from 1 mm to 15 mm, usually on the trunk, arms, and head. They have slow growth and may be associated with advanc-

How I do?

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ing age, diabetes, high temperatures, exposure to chemicals, liver transplantation, graft-versus-host disease, pregnancy, and climacteric.^{3,4}

We can mention pulsed dye laser, Nd-YAG laser, electro-surgery, surgical excision, and open probe or contact cryosurgery among vascular lesions treatments.^{2,5} There are no published reports of cutaneous vascular lesions treatment with intralesional cryosurgery.

Cryosurgery is a treatment modality that uses low temperatures of liquid nitrogen to achieve tissue effects. It causes cell membrane rupture because of the intracellular ice crystals formation, endothelial cell junctions damage, and blood stasis, producing microthrombi, vascular injury, and, finally, tissue necrosis.^{6,7} Its use in an intralesional form has been applied to hypertrophic scars and keloids.⁶⁻⁹ When liquid nitrogen passes through the needle, a lethal zone is created around the device inserted in the dermis. It differentiates intralesional cryotherapy from contact cryotherapy, which forms a lethal zone located mainly on the epidermis.⁷

This report aims to suggest intralesional cryosurgery as a therapeutic option for vascular lesions with a tumor component, reporting the method and the evolution of two cases: a hamartoma on a PWS and a cherry angioma.

METHODS

We used a similar technique in both cases. The lesions were subjected to antisepsis with 0.5% chlorhexidine digluconate alcohol solution and infiltrative local anesthesia with lidocaine 2% and epinephrine 1:200,000. Then, with an 18G (40x1.2mm) gauge disposable needle, the lesion was transfixed, and the cryosurgery device was coupled. To prevent the spray jet from causing damage to the patient or applying doctor, a shield, for example, a gauze, can be placed a few centimeters from the needle's piercing orifice. The freezing time was 30 to 60 seconds. Complete thawing was conducted, and the needle was removed. At this stage, compression for 5 to 10 minutes can easily control the bleeding.

The first patient was a 61-year-old man, smoker, who presented PWS in his right arm and forearm since birth. Approximately five years ago, asymptomatic tumors and erythematous-purple nodules of up to 1.3 cm appeared on the stain, causing discomfort with the friction of the clothes on the lesions. We selected three lesions for treatment with intralesional cryosurgery and submitted each one separately to a continuous freeze cycle of 30 seconds, awaiting the complete thawing of the lesion to remove the needle (60 to 70 seconds). An occlusive dressing, maintained for 24 hours, completed the procedure.

The second patient was a 70-year-old man, ex-smoker for 22 years, with controlled hypertension, who presented an erythematous-violaceous nodule of 1 cm in the right temporal region for four years. The lesion had slow growth and was asymptomatic but had a history of repeated trauma when combing the hair. After antisepsis and anesthesia, the lesion was transfixed, and then the cryosurgery device was attached. A continuous freeze cycle of 60 seconds was performed, and complete thawing of the lesion was awaited to remove the needle (190 seconds). After thawing, there was local bleeding, contained with compression for 5 minutes. An occlusive dressing, maintained for 24 hours, completed the procedure.

RESULTS

In the first patient, the lesions evolved with necrosis (Figure 1) and detachment approximately ten days after the procedure. The sites showed no pain or secondary infection. There was slight and minor residual hypochromia after complete healing (Figures 2A, B, C, and D).

In the second case, the lesion evolved with the formation of a slight crust after ten days and total healing in 20 days, with only a small residual hypochromic stain remaining on the site.



FIGURE 1: Necrosis of the lesion in the right forearm of the first patient, observed seven days after application of intralesional cryosurgery

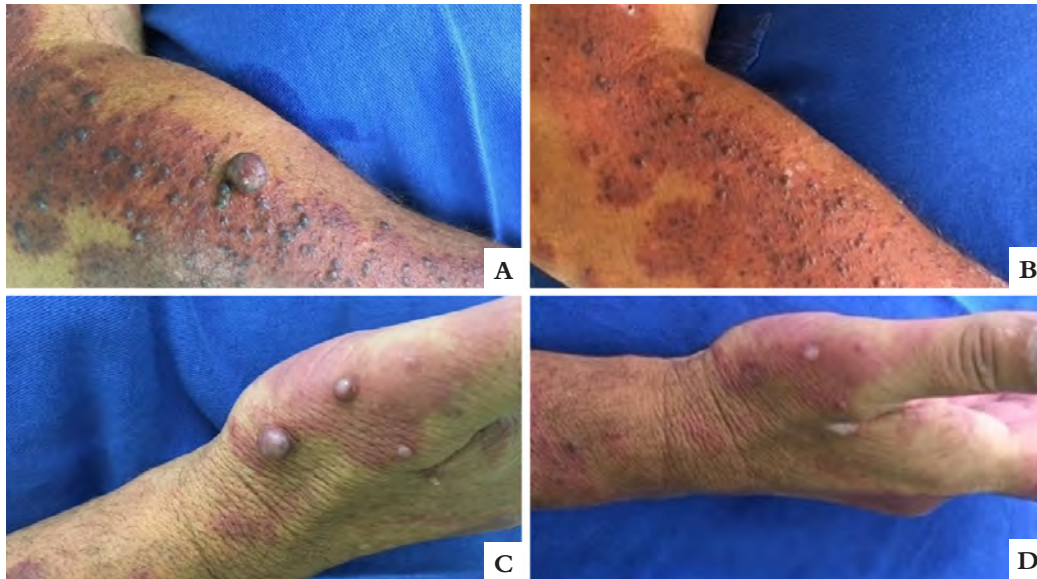


Figure 2: A - Lesion in the right forearm before application.
 B - Lesion in the right forearm 30 days after application.
 C - Lesion in the right hand before application.
 D - Lesion in the right hand 30 days after application

DISCUSSION

Cryosurgery is a simple, safe, inexpensive procedure that produces aesthetically acceptable results. It can be used to treat several benign, pre-malignant lesions and well-defined malignant tumors.⁵ Cold intolerance, Raynaud's disease or phenomenon, cold urticaria, cryoglobulinemia, pyoderma gangrenosum, autoimmune disorders, and active infections at the site are absolute contraindications for cryotherapy.⁵

Vascular lesions are susceptible to destruction by cryosurgery. The low temperature promotes vasoconstriction and stasis. From -15°C to -40°C , it can cause endothelial damage. With thawing, microthrombi formation, edema, erythema, and tissue necrosis occur. The mechanism of cell necrosis occurs by direct damage, through lower temperatures observed in the center of the lesion, and by indirect damage, through damage to blood vessels.⁵

The intralesional form of cryosurgery has already been described for keloid therapy, squamous cell carcinoma, and basal cell carcinoma.⁶⁻¹⁰ With this method, freezing is initiated at the core of the lesion and spreads to its surface. It contrasts with the contact or spray cryosurgery mechanism, which freezes the lesion from the skin surface. In the first weeks after treatment, there may be edema, mild to moderate local pain, blistering, and superficial necrosis.⁹

The advantage of this procedure is its speed, the possibility of conducting it under local anesthesia, excellent cost/benefit, easy care for the surgical wound, quick learning by the doctor, and great tolerability by the patient.^{7,10} Another advantage is the smaller scar area and less hypopigmentation generated with the intralesional method than contact cryotherapy.^{7,9,10}

As a disadvantage, the technique prevents histological confirmation in doubtful cases or those requiring verification of the surgical margin.⁹

CONCLUSION

In this report, we successfully applied intralesional cryosurgery to treat two types of vascular lesions: hamartomas on PWS and cherry angioma. After the procedures, there was edema and a halo of erythema in the first 48 hours, evolving with necrosis and darkening in the next seven to ten days. The detachment of the lesions occurred around the tenth day, with total healing between 20 and 30 days. Hypo or achromia and mild atrophy at the site were perceived sequelae.

The intralesional cryosurgery technique for vascular lesions treatment, such as those reported here, in addition to being simple, fast, and inexpensive, has good resolution, low risk, few scar sequelae, and aesthetically satisfactory results. ●


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Approval of the final version of the manuscript; study design and planning; preparation and writing of the manuscript; data collection, analysis, and interpretation; active participation in research orientation; intellectual participation in propaedeutic and/or therapeutic conduct of studied cases; critical literature review; critical revision of the manuscript.

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