A Rare Case of Penile Lymphangioma Circumscriptum Treated with the Split-Thickness Skin Grafting Technique

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ABSTRACT

Lymphangioma circumscriptum (LC) is an uncommon type of microcystic lymphatic malformation involving the skin and mucosa caused by saccular dilatation of lymphatic channels. Patients may suffer from edema, vesiculopustular lesions and lymphatic leakage. There are many treatment methods for the management of lymphangioma circumscriptum. In this paper, we present a 10-year-old patient who had penile edema treated with split-thickness skin grafting technique.

Key Words

Penile edema, lymphangioma circumscriptum, split-thickness skin graft

Case Presentation

A 10-year-old boy was admitted with a history of penile edema (Figure 1a). The patient had a history of circumcision and bilateral orchiopexy 2 years ago. Edema was recognized at the 6th month of surgery and increased by time. Penile biopsy was performed and the lesions were histopathologically confirmed to be LC.

Introduction

Lymphangioma circumscriptum (LC) is a rare benign, hamartomatous developmental anomaly of the lymphatic vascular system that presents as translucent vesicles of varying size with a pink, red, or black hue. LC causes cosmetic problems besides refractory rupture, infection, lymphorrhoea, and bleeding (1). These lesions may occur on any part of the body, but the axillary folds, shoulders, neck, proximal limbs, and buccal mucosa are the most common sites. LC is an unusual entity in the anogenital region and may be clinically indistinguishable from genital warts; consequently, biopsy from such lesions may be necessary to both confirm the diagnosis and formulate an appropriate treatment plan. Additionally, these lesions must be treated properly because they may act as a portal of entry for infections, be cosmetically embarrassing, and, if large, cause functional impairment (1,2).
complications and abnormality on the penis skin (Figure 1c). After complete surgical excision and the primary reconstruction, the cosmetic result was satisfactory.

Discussion

Lymphangiomatous lesions consists of dilated, superficial, lymphatic channels, which may occur either following damage to previously normal lymphatics or as a result of a congenital abnormality of the deep dermal and subcutaneous lymphatics. However, the clinical and histological features of these two types do not differ in their etiology (3). LC is generally localized at the axillary folds, neck and the chest and, rarely, at the genital area. LC is a widespread problem in the adult female population, but rare in the childhood (2). Different treatments, such as surgical excision, electrocoagulation, lasers, topical imiquimod, radiofrequency ablation and sclerotherapy have been used in with varying success (4,5). Kokcam has suggested “watch and wait” policy, which is advisable if the condition is asymptomatic (6). The only radical cure is to remove the superficial component as well as the deeper lymphatic cisterns. This is achieved through surgical destruction or laser ablation of the lesions. Several therapeutic modalities, such as electrocautery, cryotherapy, sclerosants, incision and drainage, and carbon dioxide laser have been tried but, in most of them, there is a high incidence of recurrence. Lymphangiosarcoma is a rare occurrence in LC; it has been reported at the site of an irradiated LC. Squamous cell carcinoma developing in a long-standing lesion has also been reported (7,8).

STSGs are thinner and have less tissue, thus, it has less metabolic demand from the wound bed and has better survival response. In contrast, a full-thickness skin graft (FTSG) is thicker and it has greater metabolic demand. Survival of FTSG is more uncertain and it requires a well-vascularized recipient site. In addition, hair follicles are also present in the dermis. Therefore, since STSGs are generally hairless, they are generally preferred on the penis (9). In the light of these facts, full-thickness excision of the skin and subcutaneous tissue down to the deep fascia still seems to be the best and most secure option. In this case, we tried to treat chronic penile lymphedema with STSG. We totally excised the penile skin with all subcutaneous tissue and replaced with STSGs instead of excised tissue. The patient had not any abnormality such as recurrence, fistula or necrosis during follow-up after surgery.

Conclusion

LC of the penis is an unusual entity that may be indistinguishable from genital warts. After confirmation of the diagnosis, a treatment...
plan consisting of wide excision should be outlined. STSG is the most appropriate choice for penile skin reconstruction because of the special characteristics of the penile skin, namely thin, hairless skin. Lesion excision and repair with STDG has been proved to be effective in terms of both function and cosmetic appearance in LC treatment. Using proper surgical technique and postoperative wound care maximizes graft success.

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