Giant Anorectal Condyloma Acuminatum of Buschke–Lowenstein: Successful Plastic Reconstruction with Bilateral Gluteal Musculocutaneous V-Y Advancement Flap

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Abstract A 58-year-old male patient presented with an anorectal verrucous carcinoma, also known as Buschke–Lowenstein tumor. Clinically, the lesion of the patient best resembled giant condyloma acuminatum with a cauliflower-like appearance. The diagnosis was confirmed with biopsy and an abdominoperineal resection was performed. The perineal defect was reconstructed with bilateral gluteal musculocutaneous V-Y advancement flap. Both functional and cosmetic results 6 years after the operation were excellent. To date, no recurrence has been noted. As long as one is aware of its existence and of its characteristic appearances, the Buschke–Lowenstein tumor is fairly easily diagnosed. The treatment of choice remains surgical resection, and adequate follow-up is essential.

Keywords Verrucous carcinoma · Buschke–Lowenstein tumor · Giant condyloma acuminatum · Abdominoperineal resection · V-Y advancement flap

Introduction

Verrucous carcinoma of the skin and mucosa is an uncommon low-grade squamous cell carcinoma and has been known by several different names if it is located in the ano-urogenital region: giant condyloma acuminatum (GCA), Buschke–Lowenstein tumor, giant malignant condyloma, verrucous carcinoma of the anogenital mucosa, carcinoma-like condyloma, and condylomatoid precarcinosis [1]. The pathogenesis of verrucous carcinoma is unknown. The leading choice is human papilloma virus infections for Buschke–Lowenstein tumors. Risk factors include anoreceptive intercourse, human immunodeficiency virus (HIV) infection, and immunosuppression.

We describe a case of GCA of the anorectum treated by an abdominoperineal resection (APR) followed by plastic reconstruction with bilateral gluteal musculocutaneous V-Y advancement flap.

Case Report

A 58-year-old male patient was admitted with a 2-year history of a growing perineal lesion. Perianal examination revealed a 10 cm×12 cm protruded mass from the anal canal, like a cauliflower (Fig. 1) extending up to the rectum. No abnormalities were found by laboratory examinations, including HBsAg, anti-HCV, anti-HIV, and venereal disease research laboratory test.

The lesion was biopsied, and the result was a verrucous carcinoma. Therefore, we decided to perform APR. After the completion of abdominal part of APR, the patient was placed in the prone, jack-knife position. A wide, complete excision of the lesion with 1.5 cm clear margin along with

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Fig. 1 Buschke–Lowenstein tumor of perianal region

removal of the coccyx, distal sacrum, and wide margins of the buttocks was performed in the perineal part of APR (Fig. 2a). After the resection was completed, bilateral gluteal musculocutaneous V-Y advancement flaps were created, with their bases adjacent excised area, and maintaining the width of the base of the flap proportional to the defect. The gluteus maximus muscle was separated along the muscle fibers at the superior limb of the flap. Full-thickness division of the muscle was performed superficially at the sacrum and laterally at the femur. These flaps included the lower two-thirds of the gluteus maximus muscle. The flaps were then separated, leaving thick central vascular pedicles, and were advanced toward the perineal defect and sutured in a vertical manner to the each other. Finally, the lateral edges of the flaps were sutured to healthy gluteal skin (Fig. 2b).

Histologic examination of the resected specimen demonstrated a well-differentiated verrucous carcinoma with negative surgical margins. Transmission electron microscopy confirmed the presence of human papilloma virus.

The patient was discharged after an uneventful postoperative course. Both functional and cosmetic results 6 years after the operation were excellent (Fig. 2c).

Discussion

The incidence of perianal GCA has slightly increased during the past decade. However, there is no general agreement on the choice of treatment for this tumor due to its localization close to important structures, to its biologic behavior which is still not completely known, to the high recurrence rates, and to the lack of adequate series of patients following the same procedure.

Surgery remains the method of choice to achieve local control of the disease, even after recurrence. There are two recommended methods of surgical treatment: wide local excision, with healing by secondary intention, or eventual skin defect reconstruction by the use of mesh skin grafts [2], S-plasty [3], V-Y plasty [4], split-thickness

Fig. 2 The perineal defect following the completion of abdominoperineal resection (a), the prepared bilateral gluteus maximus musculocutaneous V-Y advancement flaps (b), and findings 6 years after surgery (c)

grafts [5], and APR, which should be performed in cases of malignant transformation, pelvic invasion, or tumor recurrence.

APR is considered essential for lesions that invade the rectum, external and internal anal sphincters, and pelvic structures, or when histopathologic examination of the resected specimen from patients with GCA reveals the presence of focal squamous cell carcinoma lesions within the specimen [2]. The closure of perineal defect after APR is key to prevent complications such as small bowel prolapse, ileus, pelvic abscess, wound dehiscence, persistent perineal sinus, or radiation enteritis in patients who will receive adjuvant radiotherapy. Following APR, there are some options related to reconstruction techniques to close the perineal defect. For example, Dolanc et al. used transpelvic myocutaneous rectus abdominis muscle flap to fill the extensive soft tissue defect resulting from wide resection of the

perianal Buschke–Lowenstein tumor [6]. On the other hand, Sasaki et al. applied a V-Y advancement of bilateral gluteus maximus musculocutaneous flaps after ano-perianal skin excision in three cases of Bowen's disease and two cases of Paget's disease [7]. In our case, we preferred to perform bilateral gluteus maximus musculocutaneous V-Y advancement flap to reconstruct the extensive perineal defect.

There are several problems concerning surgical treatment:

1. The high recurrence rate, both after radical local excision and APR: GCA is known for its propensity for local recurrences. Chu et al. showed that approximately 50 % of all patients treated with radical surgery as the initial mode of treatment developed recurrences [8]. However, our patient is disease-free in the sixth postoperative year and is being followed up.
2. The localization of the tumor: If an APR is not attempted, wound healing in the perianal area can be difficult because of the presence of feces, which can lead to contamination of the wound site. For this reason, temporary loop colostomy is recommended by several authors to avoid the risk of fecal contamination [8].

In conclusion, we report bilateral gluteal musculocutaneous V-Y advancement flap used to close the perineal defect after radical resection of anorectal Buschke–Lowenstein tumor, giving good functional and cosmetic results. Further studies are needed for definitive conclusions to be drawn on

the best method for treating perineal defects after excision of circumferential perianal lesions.

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