Circumferential Anal Giant Condyloma Acuminatum: A New Surgical Approach

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INTRODUCTION: Perianal giant condyloma acuminatum is a rare clinical condition related to human papillomavirus infection and characterized by a circumferential, exophytic, cauliflower-like mass with an irregular warty surface localized in the anal region.

TECHNIQUE: A circular incision with a diathermocoagulator was performed on macroscopically healthy skin, 1 cm from the margin of the lesion. The dermis was divided from the subcutaneous tissue. This way, a mucocutaneous cylinder including the whole lesion was obtained. A median radial incision was carried out to open the cylinder at its front. A progressive circumferential section on healthy mucosa (≈1 cm above the margin of the lesion) by means of a radiofrequency dissector allowed for the complete removal of the mass. The healthy mucosa of the anal canal was pulled out by Allis forceps and was sutured to the external margin of the internal sphincter with single layer of Vicryl (polyglactin 910) 2-0 sutures.

RESULTS: Two months after surgery, no findings of anal stenosis or mucosal ectropion were reported. At the 1-year follow-up there was no recurrence of condylomatosis in any of the 3 cases.

CONCLUSIONS: Our procedure seems simpler to perform when compared with other techniques and reduces hospital stay and complications such as anal stenosis and mucosal ectropion.

KEY WORDS: Buschke-Löwenstein tumor; Circular incision; Giant condyloma acuminatum.

The incidence of anogenital warts has increased in the past decades and is, to date, the most common sexually transmitted disease in Western countries.1 Condylomata acuminata are correlated with low-risk human papillomavirus (HPV) type 6 and 11 infection, whereas high-risk HPV type 16 is frequently present in anogenital malignant lesions.2-4

Perianal giant condyloma acuminatum (GCA) is a rare clinical condition related to HPV infection and characterized by a circumferential, exophytic, cauliflower-like mass with an irregular warty surface localized in the anal region. This clinical condition was first described in 1925 by Buschke and Löwenstein as a lesion of the penis. In 1963, Knoblich and Failing5 reported a case of GCA localized in the anal region. Some authors consider the Buschke-Löwenstein tumor as a clinical manifestation of the verrucous carcinoma,4 but the majority of authors prefer to classify it as an extensive form of condyloma acuminatum with a high potential for malignant transformation.2,6

Currently, Buschke-Löwenstein tumor is synonymous with GCA. GCA is not a malignant lesion by histologic criteria but often shows a propensity to compress or infiltrate adjacent tissues and harbor tumor foci.7 An attractive hypothesis suggests that, on the analysis of their clinical and histopathologic characteristics, condylomata acuminata, GCA (the Buschke-Löwenstein tumor), and verrucous squamous carcinoma may represent a continuous precancerous spectrum.7

As of now, the treatment of choice for the GCA is local excision.6,8 Three patients were reported as successfully treated with a new surgical approach.

PATIENTS AND METHODS

The patients we treated showed a cauliflower lesion defined by a grape-like conglomerate merging into cribrous areas. The lesion has a hard, rubbery consistency and is free from adhesions with the underlying planes. All of the above are consistent with a giant condyloma. A previous outpatient anoscopy was performed to rule out anal canal and rectal condylomatosis above the dentate line.
The bowel preparation consisted of 2 enemas 1 day before surgery. Informed consent was obtained for surgical treatment and handling of personal data. The operation was performed under spinal anaesthesia; intravenous metronidazole and ceftriaxone were given prophylactically.

The patient was placed in the high lithotomy position. A circular incision with a diathermocoagulator was performed on macroscopically healthy skin, 1 cm from the margin of the lesion (Fig. 1). The dermis was divided from the subcutaneous tissue. A gentle submucosal dissection was then performed in the anal canal as far as healthy mucosa was encountered, taking care to preserve the internal sphincter. In this way, a mucocutaneous cylinder including the whole lesion was obtained. A median radial incision was carried out to open the cylinder at its front. A progressive circumferential section on healthy mucosa (=1 cm above the lesion margin) by means of a radiofrequency dissector allowed for the complete removal of the mass (Fig. 2A). In our experience, using a radiofrequency apparatus yields better results in terms of hemostasis and faster healing of surgical wounds with less lateral heat diffusion. The healthy mucosa of the anal canal was pulled out by Allis forceps and was sutured to the external margin of the internal sphincter with single layer of Vicryl (polyglactin 910) 2-0 sutures (Fig. 2B). The remaining perianal wound was left to second intention healing.

Patients were discharged on the second postoperative day, with a recommendation for oral pain medication (ketorolac, 10 mg twice a day for 4 days), oral laxatives (lactulose, 2 teaspoons per day), a fiber-rich diet, and daily sitz baths with diluted chloramines. The patients underwent weekly outpatient examinations for 6 weeks. Home dilation was prescribed twice per week for 6 weeks, 15 days after surgery. Follow-up was scheduled at 2 months and at 1 year after the surgery.

**RESULTS**

Histology confirmed each patient as having diffuse anorectal condylomatosis without malignant degeneration. The early postoperative period was uneventful in all 3 patients: no bleeding, wound infection, or anal incontinence was reported (Fig. 3A).

Hospital stay was 2 days for all 3 patients. Complete healing occurred in 40 days. Two months from surgery, no findings of anal stenosis or mucosal ectropion were

Figure 1. A circular incision with diathermocoagulator is performed on macroscopically healthy skin, 1 cm from the lesion margin.

Figure 2. A, A progressive circumferential section on healthy mucosa (=1 cm above the lesion margin) by means of a radiofrequency dissector allows the complete removal of the mass. B, The anal canal healthy mucosa is pulled out by Ellis forceps and is sutured to the external margin of the internal sphincter with single layer of Vicryl 2-0 sutures.
reported (Fig. 3B). At the 1-year follow-up, there was no recurrence of condylomatosis in any patient.

**DISCUSSION**

Sexual intercourse is the primary route of diffusion for interpersonal transmission of anogenital condylomatosis. A high prevalence of anal warts is found in men who have sex with men, particularly in HIV-positive patients. In these patients, condylomata occur with larger size, grow more rapidly, and show a higher incidence of recurrence and dysplasia compared with that of the general population.

Patients affected by GCA present longstanding symptoms: the particular method of transmission and the localization of the lesions often induce them to undergo a physical examination very late in the course of the disease. Currently the correlation between perianal GCA and risk factors for anal condylomatosis (HIV infection and homosexual orientation) is not clearly defined because of the paucity of data found in literature. In our series, no patient turned out to be HIV positive, and only 1 admitted to have anal receptive intercourse.

Medical treatment of anogenital warts is characterized by a recurrence rate of 20% to 30%, whereas surgical treatment has clearance rates close to 100%. The therapeutic indication depends on the size of condylomata: small lesions can be successfully treated with local chemical agents, whereas extensive lesions require surgery. Medical treatment includes topical compounds containing podophyllotoxin and imiquimod. Electrocoagulation with a diathermocoagulator or liquid nitrogen cryotherapy may be used in case of localized anal warts.

GCA localized in the anorectal region is typically a large perianal circumferential mass characterized by potential malignant transformation and high recurrence rates. A wide surgical excision with 1-cm macroscopically negative margins is presently considered the most appropriate treatment for this type of lesion.

The incidence of malignant transformation of GCA is very high and varies from 30% to 56%. Consequently, radical surgical excision that allows complete histologic examination is mandatory for these patients: any additional therapies will be scheduled in relation to the presence of tumor, infiltration of surrounding tissues, or involvement of resection margins.

GCA is associated with a very high recurrence rate that can reach 65%. Excisional surgery with 1-cm disease-free margins seems to guarantee the lowest rate of recurrence. Furthermore, patient immune status seems to play a decisive role: in HIV-positive patients, the incidence of recurrent condylomata after surgery is significantly higher than in the HIV-negative population. In our series, the absence of recurrence at 1 year in all of the patients may be related to both radical surgery and complete patient immunocompetence.

A large anodermal resection exposes the patients to a risk of postoperative stenosis, and many authors suggest different types of plastic reconstructive surgery to cover the skin defect and to prevent second-intention healing. The kind of reconstruction after excision is debated. Different techniques have been proposed, including mesh-skin grafts, Whitehead technique, rotational S-flaps, advancement flaps, and V-Y flaps. Nevertheless, this kind of surgery is characterized by a prolonged hospital stay and not negligible rates of complication, including hematoma, wound infection, and suture dehiscence.

The absence of warts above the dentate line is a requirement to perform our technique. The fixing of the anal mucosa to the internal sphincter aims to place the dentate line in its natural position, avoiding its upward displacement with a consequent high risk of complications. A mucocutaneous suture, which is not easy to perform after a wide perianal excision, is avoided to prevent mucosal ectropion.

Although anal stricture after surgery for diffuse condylomatosis seems to be uncommon, the choice of leav-
ing the perianal wound to second-intention healing could lead to postoperative stenosis. To minimize this complication we recommend regular evacuations and home dilations twice a week; indeed, frequent postoperative examinations are needed. According to our initial experience, the proposed surgical approach seems to combine technical simplicity, rapid discharge, and low complication rates.

CONCLUSION

Surgical circumferential excision by radiofrequency dissector followed by suture of the anal mucosa to the inferior margin of the internal sphincter might be a valid therapy for GCA. In our experience, although it is limited because of the rarity of such lesions, we had no findings of stenosis or recurrence. Our procedure seems simpler to perform and reduces hospital stay and complications. Therefore, we think it is a valid option for treating these patients. A larger number of patients is desirable to confirm our results in the future.

REFERENCES