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Giant condylomata (Buschke-Löwenstein tumours): our case load in surgical treatment and review of the current therapies

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Abstract. – *Background:* **Buschke-Löwenstein tumour (BLT) or giant condyloma is a verrucous infiltrating lesion, due to a sexually transmitted virus infection, human papilloma virus subtypes 6 and 11. Poor hygiene, promiscuity, chronic irritation and cellular immunocompromised states are often implicated in its genesis. Typical treatment of giant condyloma includes imiquimod cream, podophillin resin, cryotherapy, laser surgery, tangential shave excision with electrocautery.**

Objective: **The authors report their case load in the treatment of giant condyloma and the review of the modern therapies.**

Methods and Materials: **27 consecutive patients (18 men, nine women) underwent surgery for giant condylomata of perianal region and externa genitalia at the Department of Plastic Surgery of the University of Palermo, from October 2006 to December 2009. All the patients had been treated before with conservative therapies without significant results. We performed the radical excision with split-thickness skin graft in all the patients.**

Results: **No significant complications have occurred in all the cases. The functional and aesthetic outcome were satisfying. No recurrence of disease were noticed in the follow-up.**

Conclusion: **the radical excision with split-thickness skin graft appears to be a successful option of treatment for Buschke-Löwenstein tumours. Compared to other methods it does not necessitate several stages of treatment, moreover it has the advantage of a lower risk of recurrence, it allows a complete histologic examination, the healing process is rapid, the improvement of quality of patients's life is significant.**

Key Words:

Giant condyloma, Buschke-Löwenstein tumour, Surgical excision, Split-thickness skin graft.

Introduction

Inizially described by Buschke and Löwenstein[1], giant condyloma is a rare manifestation of condyloma acuminatum, which may exceed 10 to 15 cm in diameter, due to a viral infection with human papillomavirus types 6 and 11, transmitted by sexual contact, autoinoculation, contact with infected materials[2].

Macroscopically it appears as a polypoid, cauliflower-like, exophytic mass, characterized by slow growth, local infiltration, contiguous tissue destruction, with high tendency to recurrence and to produce fistulas or abscesses around the affected area. Most frequent localization are the surface of vulva, the scrotum, the penis, the perineum and the perianal region (Figure 1), the involvement of the rectum and bladder are extremely rare[3]. Is controversial the idea that Buschke-Löwenstein tumour should be considered a premalignant lesion with an high potential of malignant degeneration or a clinical manifestation of verrucous carcinoma, some Authors report its transformation into squamous carcinoma after decades of growth[4].

Modern Therapies

Different types of treatment are reported for giant condyloma. However, because of its rarely, literature consists mainly of case reports and lacks controlled studies. The type of treatment depends on many factors, including the size, the location of the giant condyloma, the unsuccessful previous therapies. Recurrences are frequent expecially after a conservative therapy.

The podofilox solution and gel are the first option of treatment for condyloma acuminata. With the 0.5% solution, recurrences were found in one

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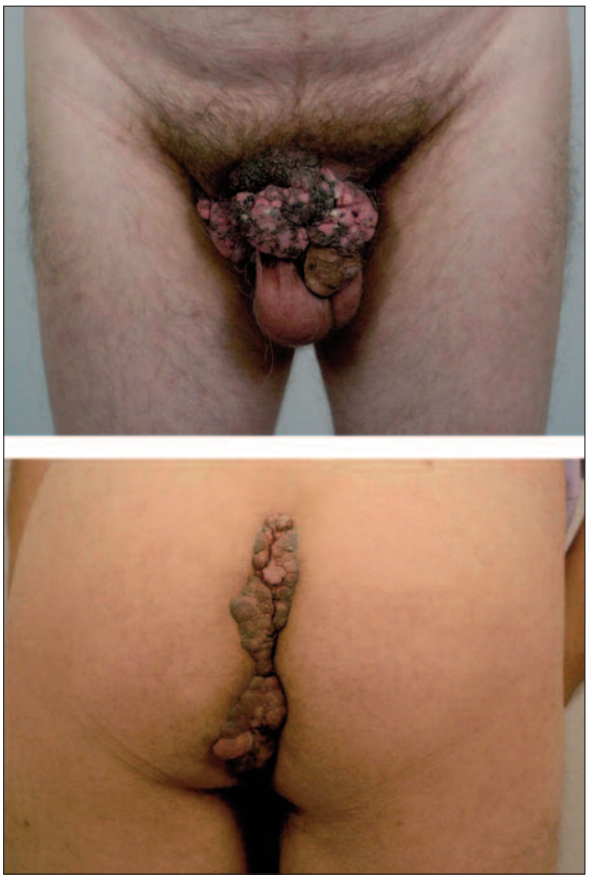

Figure 1. Clinical presentation of a Buschke-Löwenstein tumour involving the pubis, the perineum, the left groin and the anorectal region.

third of the patients during the first month after the treatment[5]. Podofilox gel, removes more than 64% of the warts after 8 weeks of treatment[6] with moderate local adverse reaction. It is reported an high risk of recurrence, probably because of the presence of virus in adjacent normal-appearing tissue[7].

The antimetabolite 5-fluorouracil[8,9], the bleomycin combined with cisplatine or methrotrexate[10,11], the α-interferon[12] in topical or systemic administration, are possible option of management to reduce the size of the giant condyloma.

However, there are no guidelines or standard doses, the treatments are expensive and require multiple administrations. In addition, the adverse events limit the therapy.

Imiquimod is an immune-response modifying agent that induces the synthesis of interferon alfa, interleukine 1, 6 and 8 and other cytokines. Topical 5% imiquimod cream applied 3 times per week overnight for up to 16 weeks, would completely remove the condylomata acuminata in 37% to 54% of the patients. Frequent adverse reactions are local itching, erithema, skin ulceration. Recurrence occurs in 19% of case after 12 weeks of follow-up[13].

Cryotherapy by itself or in combination with topical 5-fluorouracil was reported with good results in relatively small Buschke-Löwenstein tumours[14-15].

Laser: CO_2 or argon laser are reserved for relapsing cases or patients who have not received the previously mentioned treatments as an alternative first-line treatment: its advantages are the hemostatic incision and the wound sterilization[16].

It is reported the systemic use of α-interferon combined with neodymium: yttrium-aluminium garnet laser therapy for local recurrence with satisfactory results. However, no large series or long-term results are yet available[17].

Regional radiotherapy may induce undifferentiation of the tumour cells, stimulating a rapid progression of the lesion to the malignant degeneration[18].

The surgical excision is still the first line of treatment for Buschke-Löwenstein tumours, with a highter success rate (63%-91%) and lower risk of recurrence[19]. It allows the complete histopathologic examination of the tumour, permitting to exclude squamous cell carcinoma for which a radical aggressive surgery is mandatory. The Authors shows that the wide excision of the lesion with split-thickness skin graft can provide a good outcome for patients with Buschke-Löwenstein tumours, expecially for cases refractory to all forms of medical therapy.

Patients and Methods

Twenty-seven consecutive patients (18 men, nine women) underwent surgery for giant condylomata of perianal region and external genitalia at the Department of Plastic Surgery of University of Palermo, from October 2006 to December 2009. Mean age was 49 years (range 27-71). Tumours' secretion culture showed *Escherichia coli* and negative-coagulase *Staphylococci sp.* Ten patients have been treated before with podofilox gel, nine with crioteraphy, two with tangential excision by electrocautery, but all them were refractories to the treatments. After local or general anesthesia, the radical excision with 20 mm of margins was performed then, the split-thickness skin graft. The donor site was for all the patients

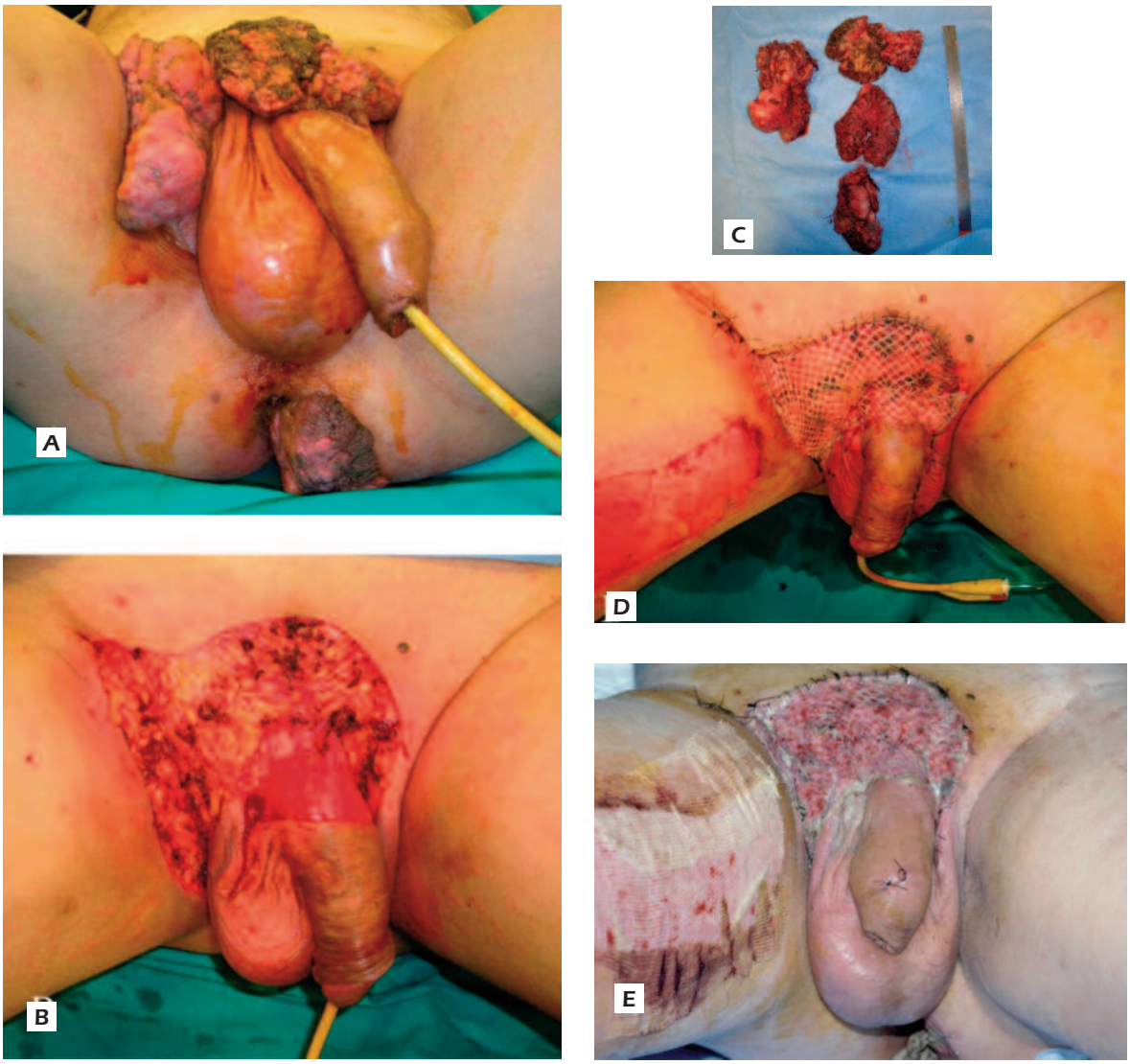

Figure 2. ***A,*** Preoperative view. ***B,*** The giant condylomata are excided radically. ***C,*** Giant condylomata. ***D,*** Intraoperative view after the split-thickness skin graft. ***E,*** Post-operative view after seven days.

the medial region of the thigh: the skin graft was thus processed through the skin mesher to expand its size (Figure 2 a-d).

The verrucous lesions localized inside the rectum were excided with CO_2 laser. Antibiotic prophylaxis (2 g of intravenous cefazolin 30 minutes before the operation) was administrated in all the patients.

Results

The donor sites healed within 7-14 days in all the cases. The attachment of the skin graft was complete in 23 patients (Figure 2e). In four cases, after the *Pseudomonas aerugi*nosa infection, a partial graft failure occurred, resulting in a prolonged healing process by second intention, with frequent medications (three times a week) and post-operative antibiotic administration for a mean of seven days.

The lymphoedema was present in three patients at the genitalia, they were treated with manual lymph drainage with a complete resolution after four weeks. In one patient the shortage of the graft at the groin determined subacute pain which required physical therapy for three months and non-steroidal anti-inflammatory drugs (NSAIDs) for two weeks, with complete resolution of the symptoms.

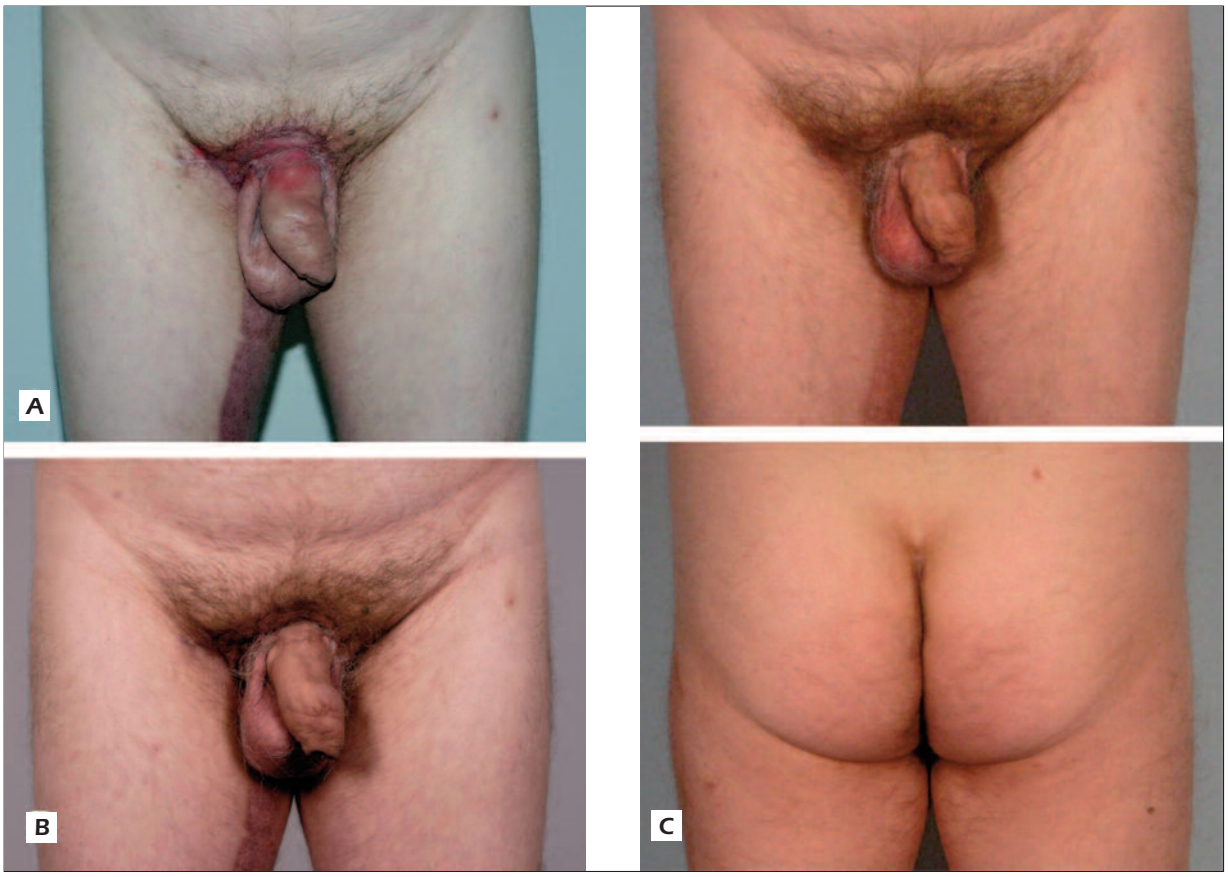

Figure 3. Post-operative view after. ***A,*** Two months. ***B,*** Six months. ***C,*** One year.

The hystopatologic analysis reported for all the cases giant condylomata with intraepithelial hyperplasia without cellular atypia. It was not possible to determine which viral subtypes were involved. All the patients were visited in the Institute during the follow-up (range 36-48 months).

No recurrences were noticed in all of them (Figure 3a-c). All the patients compiled a form about their satisfactory for functional and cosmetic results. The 94% of the patients considered excellent the final outcome.

Discussion

Buschke-Löwenstein tumour or giant condyloma origins from condylomata acuminata, due to the infection by the *human papillomavirus*. An estimated rate of 30% to 50% of sexually active adults has genital human papillomavirus, and 2% presents genital condylomata acuminata[20]. The giant condyloma differs from condylomata acuminata because it can invade and destroy the adjacent tissue. It is extremely rare, so experience with the treatment of these tumours is difficult to accumulate. Its histological pattern is similar to the verrucous carcinoma, thus many Authors accept to include both the lesions under the term Buschke-Löwenstein tumours[18]. It has been reported malignant transformation in squamous cell carcinoma in 30-50% of patients[21]. The coexistence of Buschke-Löwenstein tumour and squamous cell carcinoma in the same site, changes the behaviour and progress of the lesion[19]. For this reason we believe that the only consistently effective therapy is wide surgical excision of tumour with 20 mm margins, followed by the split-thickness skin graft. This procedure is the best treatment of choise for giant condilomata, permitting a complete histopatologic examination, a more rapid healing and improved final results, with a lower risk of recurrences. Alternative treatment to surgery as laser surgery, photodynamic therapy, cryotherapy, may also be applied in cases of rectal or vulvar localization, only after a bioptic histologic analysis to exclude the present of a squamous cell carcinoma.

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