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Effective management of extensive tissue loss after abdominoperineal resection for Buschke-Loewenstein tumor

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SUMMARY: Effective management of extensive tissue loss after abdominoperineal resection for Buschke-Loewenstein tumor.

G. BALDUCCI, G. CARBOTTA, M.G. SEDERINO, A. DELVECCHIO, R. LAFORGIA, P. SALLUSTIO, P. LOBASCIO, F. FERRARESE, M. MINAFRA, S. FEDELE, N. PALASCIANO

The giant condyloma acuminatum or Buschke-Loewenstein tumor is a rare, sexually transmitted disease. It is an epithelial tumor characterized by its high potential of malignancy towards developing into a highly invasive squamous cell carcinoma.

The present case concerns a drug addicted 40-year-old man who smuggled drugs using his rectum. He had a partially ulcerated mass in the perianal area of about 20 x 10 cm. He reported a progressive growth of this neoplasm during the last 3 years associated with peria-

nal pain, obstructed defecation, bad sitting posture, no fever and weight loss. Our first approach was a left laparoscopic loop colostomy for a fecal diversion and antalgic purpose, and biopsy of the perineal mass. Then, he underwent a complete excision of the perianal neoplasm. The pathologist's positive diagnosis of a well differentiated squamous cell carcinoma, evidently necessitated the radicalization of the surgical procedure of abdominal perineal resection. In consideration of the surgical wound depth and size, a VAC Therapy with Negative Pressure Wound Therapy was applied.

The BLT incidence rate has been steadily increasing over the last decade especially among male patients. An aggressive surgical approach is usually to get the best oncologic outcome but the difficult management of the perianal wound is challenging. In our experience VAC therapy has been shown to be an effective tool in promoting the healing of the perineal wound after abdominoperineal resection.

KEY WORDS: Giant condyloma acuminatum - VAC therapy - Human papillomaviridae.

Introduction

The giant condyloma acuminatum (GCA) also named Buschke-Loewenstein tumor (BLT) is a rare, sexually transmitted disease, caused by the Human Papilloma Virus, first described on the penis by Buschke in 1896, by Loewenstein in 1925 (1, 2) and later in 1965, in the anorectal area by Dawson. It is an epithelial tumor characterized by a high recurrence rate (66%), high potentiality for malignancy towards a highly invasive squamous cell carcinoma (56%) and significant mortality rate (20%).

Factors involved in the development of this viral infection include immunosuppression, homosexuality, pro-

miscuous sexual activity, genital warts, vulvar and cervical dysplasia, and the involvement of some HPV serotypes (HPV 16-18) may favor the occurrence of dysplasia and carcinoma (3, 4).

Anal cancer associated to HPV infection occurs in the squamous columnar junction level even if it has been reported also in the anal canal and in perineal area. HPV can infect keratinocytes of the basal layer generating either benign lesions (histological types 6,11), such as warts, where the viral DNA replication takes place outside the chromosomes, or malignant lesions, (histological types 16,18), where the viral DNA is integrated into the host chromosomes. Progression to dysplasia and carcinoma in this case result from mutations of gene sequences (5-7).

Case report

A HIV-HBC-HCV negative, drug addict 40-year-old man, who would smuggle by storing drugs in his rectum was visited in our General Surgery Unit complain-

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ning of a growing perianal lump. He reported a progressive growth of this neoplasm during the last 3 years, associated with perianal pain, obstructed defecation, bad sitting posture, fever and weight loss. At our examination the neoplasm was a GCA, partially ulcerated, cauliflower-like tumor protruding from the anal canal, with a verrucous surface, about 20x10cm (Figure 1). He underwent CT and MRI scan which showed an “irregular mass invading the perianal area, the levator muscle and the ischiorectal fossa in both side”.

Our first approach was a left laparoscopic loop colostomy for a fecal diversion and antalgic purpose, while the perineal mass was biopsied. Histology of the biopsy showed “massive epidermal hyperplasia, hyperkeratosis, atypical koilocytosis and low grade dysplasia”. Therefore, the patient underwent a complete excision of the perianal neoplasm. On the whole specimen a well differentiated squamous cell carcinoma was identified, and therefore a radicalization of the surgical procedure was planned.



Figure 1 - Partially ulcerated, cauliflower-like tumor.

Few days later the patient underwent an abdominal perineal resection (Figure 2) by open surgery which was uneventful, however the large perineal defect prevented a standard closure of the perineum, and therefore a VAC therapy with Negative Pressure Wound Therapy (NPWT) was applied to facilitate the wound healing by secondary intention. The VAC therapy system is believed to promote wound healing by the reduction of the edema and exudate, the increase of local blood perfusion and

the stimulation of cell regeneration. Specifically, VAC Whitefoam, a versatile polyvinyl alcohol dressing was placed over the parietal peritoneum of the pelvic wall with the aim of protecting such a delicate tissues. V.A.C. GranuFoam Silver® Dressings was also used because it is a polyurethane foam with micro-bonded metallic silver that helps wound healing by providing an effective barrier to bacterial penetration.

V.A.C.® Dressing was changed once every 72 hours for 6 weeks, modifying negative pressure's setting step by step (75mmHg - 125mmHg). Moreover, culture samples were performed for microbiological examination showing the presence of a *Pseudomonas Aeruginosa*. Germ-specific antibiotic treatment was administered until the resolution of the infection.

The patient was discharged 7 weeks after surgical pro-



Figure 2 - Post-operative abdominal perineal resection wound with NPWT.

cedure with almost complete healing of the perineal wound. Thereafter, he started a post-operative wound management and oncological follow-up that included chemotherapy and then radiotherapy. After 6 months of follow-up, the patient is disease free with a complete perineal wound healing (Figure 3).

Discussion

The Buschke-Loewenstein tumor is a rare disease with challenging therapeutic options which cannot be standardized. Radical excision of the tumor is considered the gold standard with a close post-operative follow-up, while the utility of neoadjuvant chemoradiotherapy is controversial. But even the surgical approach whether or not making a diverting stoma, and the way of closing the large defect of the perineum after the surgical excision, is not standardized. Pre-operative pelvic RMN is essential for the evaluation of the size, extent of the tumor and the infiltration of surrounding tissues (8). The role of the preoperative biopsy is limited due to the heterogeneity of the histological changes within the large tumor. In fact, in our patient, the biopsy showed only low grade dysplasia, while on the whole resected tumor, a well differentiated carcinoma was found. According to the literature, neoadjuvant chemoradiotherapy is considered necessary only in cases of high risk of malignancy and Safi et al. confirm that neoadjuvant radiotherapy shows a higher incidence of free margins in cases of anal sphincter infiltration (9). On the other hand, a higher risk of anaplastic cancer transformation after radiotherapy is reported by others (10, 11).

In our case, radiotherapy was not considered as first step because of the normal external anal sphincter and also because of the limited benefits expected by this approach. Our strategy, according to other Authors, included a left loop colostomy to prevent the fecal contamination of the wound and decrease the perianal pain at defecation (12). On the contrary Abbas believes that the colostomy could not reduce the risk of fecal contamination (13) and, instead, suggests a low-fiber diet, prokinetics and intestinal hygiene.

Several surgical procedures are reported in literature, including simple or large excision, radical surgical procedure and abdominal perineal resection but the choice of the best surgical approach is controversial. We performed a radical sphincter-preserving resection because it allows a complete pathological examination with evaluation of the margins and prevalence of carcinomatous foci (14). In fact the pathological examination in our case, reported a well differentiated squamous cell carcinoma, and therefore, we chose to perform the radicalization of the surgical procedure with an abdominal perineal resection in agreement with several Authors (15).



Figure 3 - Complete perineal wound healing.

According to literature several perineal reconstruction techniques can be adopted such as secondary wound healing, musculocutaneous flaps, anal reconstruction if there is a large loss of substance (16). In our case, the surgical wound depth and size, prevented the direct wound closure and therefore we used a Therapy with Negative Pressure Wound Therapy (NPWT) which allowed secondary wound healing.

Conclusions

The incidence rate of BLT in the perianal region has steadily increased over the last decade especially among male patients. An aggressive surgical approach usually gets the best oncologic outcome but the difficult ma-

nagement of the perianal wound is challenging. In our experience VAC therapy has been demonstrated to be an effective tool in promoting the healing of the perineal wound after abdominoperineal resection.

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Consent section

Written informed consent was obtained from the pa-

tient for publication of this case report and accompanying images.

Author contribution section

G. Balducci PhD, G. Carbotta MD, M.G. Sederino MD: Case presentation.

A. Delvecchio MD, R. Laforgia MD, P. Sallustio MD: Translation and discussion.

P. Lobascio MD, F. Ferrarese PhD: Conclusions
M. Minafra MD, S. Fedele MD, N. Palasciano PhD: Images and revision.

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