

Negative pressure wound therapy of an anal cancer to facilitate further treatment – case report.

Magdalena Kicińska, Dorota Błażejewska, Tomasz Banasiewicz

CASE REPORT

Abstract—Anal cancer occurs very rare in our population. Its treatment depends on the advancement of the process. Occasionally, the lesions are removed surgically, but most of advanced lesions are treated by radiotherapy and chemotherapy, also combined with surgical removal. Sometimes the combination therapy is difficult to perform, in cases when there is no possibility to protect the bowels against the direct side effects of radiotherapy due to wide excision. In most complicated and non-healing wounds, negative pressure therapy significantly improves the treatment results. This kind of treatment has also its restrictions: main contraindication is an active malignant process, however, it is reported that in some cases it has achieved positive effects.

68 years-old man was admitted to the Proctological Outpatient Office because of perianal genital warts. Histological examination diagnosed them as condylomata acuminata but when the patient reported back to the same Outpatient Office after 2 years, he presented with a giant perianal tumor. Because of severe problems with passing stool, size of the lesions, sphincter infiltration and its full dysfunction, abdominoperineal rectal resection with end colostomy was performed. In the histological examination anal cancer was recognized: stage IIIA: T3N1M0 and further radiotherapy and chemotherapy were indicated. An open, non-healing wound was a contraindication for radiotherapy. Despite the potential malignancy in the wound, the negative pressure wound therapy (with the continuous pressure -100 mmHg) was introduced. After 20 days of treatment, the wound was closed by granulation. Patient was qualified to the radiation therapy (60 Gy) combined with 5-FU and Mitomycin C, with good results.

In our case, applying negative pressure wound therapy resulted in wound closing and allowed to introduce the main way of healing — radiotherapy, suggesting that NPWT can be used as supportive management of neoplastic diseases.

Keywords—Negative pressure, vacuum therapy, anal cancer

I. INTRODUCTION

ANAL cancer occurs very rare in our population. It constitutes 1-2% of all colon cancers. It is divided into two groups- cancer of the anal canal and cancer of the anal margin (below the anal verge).

The majority of anal cancers are squamous cell carcinomas. Treatment of anal cancer depends on the advancement of

Manuscript received 2015-12-20; revised 2016-02-10. No conflict of interest.

Author affiliations: Szpital Kliniczny im. Heliodora Święcickiego Uniwersytetu Medycznego w Poznaniu, (MK,DB); General and Endocrine Surgery and Gastroenterological Oncology Department, Poznań University of Medical Sciences, (TB)

*Correspondence to: Prof. Tomasz Banasiewicz, General and Endocrine Surgery and Gastroenterological Oncology Department, Poznań University of Medical Sciences, mail: tbanasiewicz@op.pl

the process. Occasionally, the lesions are removed surgically, but most of advanced lesions are treated by radiotherapy and chemotherapy, also combined with surgical removal.¹

Sometimes the combination therapy is difficult to perform, in cases when there is no possibility to protect the bowels against the direct side effects of radiotherapy due to wide excision. In most complicated and non-healing wounds, negative pressure therapy significantly improves the treatment results.

Vacuum assisted therapy (negative pressure wound therapy) is a common treatment of bad healing wounds. The main clinical goals are: reduced time of wound healing, decreasing frequency of septic complications, and better functional and cosmetic effect.² There are only few contraindications for the negative pressure wound therapy use (e.g. an active malignant process,³ however, it is reported that in some cases it has achieved positive effects⁴⁻¹⁰).

II. CASE REPORT

68 years-old man was admitted to the Proctological Outpatient Office because of perianal genital warts in May 2012. No other comorbidities, risky sexual behavior, or homosexual contacts were reported by the patient. Warts were resected using electrocoagulation and sent for histological examination which diagnosed the samples as condylomata acuminata. The wound healed correctly after surgery. We recommended further pharmacological treatment with podofilin locally. The patient reported back to the same Outpatient Office in June 2014 with giant perianal tumor (Fig 1).

Patient observed re-growth of the perianal changes more than a year after, but was afraid to report for a follow-up visit. Because of the suspicion of malignancy - the biopsy and MRI of the pelvis were done. No signs of malignancy in specimen, enlarged lymph nodes, or other signs of malignancy in MRI were detected. The wart's mass was localized in the perianal region, and infiltrated the sphincters and lower rectum. Because of severe problems with passing stool, size of the lesions, sphincter infiltration and its full dysfunction, abdominoperineal rectal resection with end colostomy was performed. The resulting non-healing wound secreted high volume of exudate.

In the histological examination anal cancer was recognized: stage IIIA: T3N1M0 (T3: Tumor greater than 5 cm in greatest dimension; N1: Metastases present in 6/14 perirectal lymph nodes; M0: No distant metastases) with the malignant infiltration in the line of the resection. Because of the wide resection,



Figure 1. Giant perianal tumor, recurrence after more than one year.



Figure 3. Negative pressure wound therapy dressing applied on the perineal wound.



Figure 2. The non-healing wound 2 weeks after the abdominoperineal rectal resection.

non-healing wound and type of cancer the extension of the surgical resection was not indicated. Further radiotherapy and chemotherapy were indicated as the best option for the patient.

The condition of the wound didn't improve in the next 2 weeks. An open, non-healing wound was a contraindication for radiotherapy – the most suitable type of treatment in advanced anal cancer. Despite the potential malignancy in the wound, the negative pressure wound therapy was introduced to improve healing, close the wound and enable radiotherapy.

We used the Hartmann "S" size wound therapy set and introduced the polyurethane sponge into the wound and covered the topical part of the sponge (potentially contacted with bowels) with a silicon layer. We used continuous pressure -100 mmHg and seal the wound dressing with a stoma paste (Stomahesive), especially close to the scrotum.

There were 4 wound dressing changes, every one after 5 days. During every changes the wound was washed with 0,9% NaCl (500 ml), than antiseptic solution (Octenisept, 100 ml) and finally with lavaseptic (Microdacyn60® Wound Care,

Oculus Technologies of México; 200 ml). After 20 days of negative pressure wound therapy the wound was closed by granulation. Part of granulated tissue was macroscopically suspected to be a potential malignant tissue, which was not confirmed by biopsy.



Figure 4. Perineal wound 20 days after negative pressure wound therapy.

Patient was qualified to the radiation therapy (60 Gy) combined with 5-fluorouracil and Mitomycin C immediately after wound closure, with good results. Till now the condition of the patient is good, no signs of recurrence, distal metastases, or lymph node involvement have been observed. We believe that thanks to a much faster wound healing and introduction of radio- and chemotherapy, the treatment of the patient was the most accurate and effective. The delayed wound healing and rejection form radiotherapy can potentially lead to local and distant spread of the disease.

III. DISCUSSION

NPWT is an effective tool in the management of post-operative wound problems but the use of the method is very

controversial in patients with malignant process. The main doubt is the potentially angiogenic effect which can aggravate malignancy or recurrence of the cancer.⁸

On the other hand, in last years some cases of using NPWT in the treatment of patients with malignant tumors has been observed. There are two main oncological groups of patients with malignancy and indication for NPWT. The first one, commonly accepted, are patients after radical surgical treatment, with no suspicion of malignant cells in the wound.¹¹

Second, still very controversial and „out of label“ group are patients with non-radical resection (potential malignancy in the wound) or malignant infiltration of the wound. NPWT is introduced in this group to improve quality of life, decrease the pain, odour and secretion from the wound. In such cases concentration on the palliative therapy is the main aim of the treatment.

The negative pressure wound therapy was used in the five patients with an active malignant process (i.e. the sarcomas, the parietal recurrence of the breast carcinoma, the head melanoma described by Riot), which had good results as a palliative treatment in those cases.⁴ Heller had introduced vacuum assisted therapy as a preparation for brachytherapy of patients with sarcoma.⁵

IV. CONCLUSIONS

In our case, applying negative pressure wound therapy allowed closing the wound and introducing the radiotherapy, which is essential for further treatment.

Potential benefits and risks of NPWT treatment should always be considered, so we conclude to treat every patient individually. In selected cases of oncologic patients, NPWT can be considered after the surgery, especially when the treatment is used in palliative management or when the proliferation of neoplastic tissues does not affect the duration of life (palliative treatment, morbidity, old age etc.).

REFERENCES

- [1] R. Glynne-Jones, J. M. A. Northover, and A. Cervantes, "Anal cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up," *Annals of Oncology*, vol. 21, no. Supplement 5, pp. v87–v92, may 2010. [Online]. Available: <http://dx.doi.org/10.1093/annonc/mdq171>
- [2] R. G. Frykberg and J. Banks, "Challenges in the treatment of chronic wounds," *Advances in Wound Care*, vol. 4, no. 9, pp. 560–582, sep 2015. [Online]. Available: <http://dx.doi.org/10.1089/wound.2015.0635>
- [3] H. Q. Ontario, "Negative pressure wound therapy: an evidence-based analysis," *Ont Health Technol Assess Ser*, vol. 6, no. 14, 2006.
- [4] S. Riot, G. de Bonnezeze, I. Garrido, G. Ferron, J.-L. Grolleau, and B. Chaput, "Is the use of negative pressure wound therapy for a malignant wound legitimate in a palliative context? "the concept of NPWT ad vitam": A case series," *Palliative Medicine*, vol. 29, no. 5, pp. 470–473, dec 2014. [Online]. Available: <http://dx.doi.org/10.1177/0269216314560009>

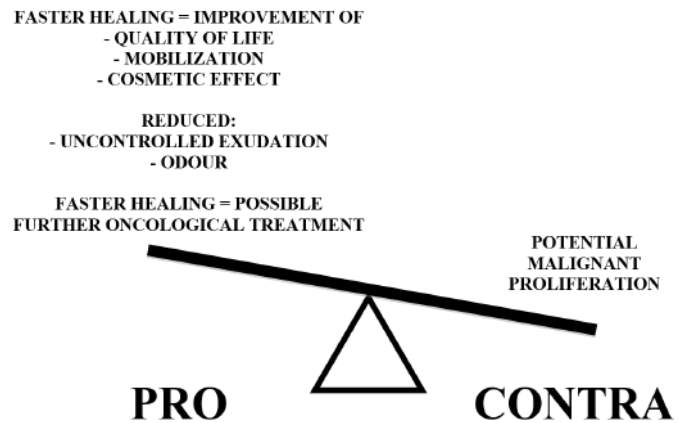


Figure 5. Balance of the NPWT use in wounds in oncological treatment. Based on the current recommendations NPWT is contraindicated in these types of wounds.

- [5] L. Heller, M. T. Ballo, J. N. Cormier, S. D. Oates, and C. E. Butler, "Staged reconstruction for resection wounds in sarcoma patients treated with brachytherapy," *Annals of Plastic Surgery*, vol. 60, no. 1, pp. 58–63, jan 2008. [Online]. Available: <http://dx.doi.org/10.1097/01.sap.0000258956.66990.9a>
- [6] H. J. Siegel, J. L. Long, K. M. Watson, and J. B. Fiveash, "Vacuum-assisted closure for radiation-associated wound complications," *Journal of Surgical Oncology*, vol. 96, no. 7, pp. 575–582, 2007. [Online]. Available: <http://dx.doi.org/10.1002/jso.20846>
- [7] S. Ford-Dunn, "Use of vacuum assisted closure therapy in the palliation of a malignant wound," *palliat med*, vol. 20, no. 4, pp. 477–478, jun 2006. [Online]. Available: <http://dx.doi.org/10.1191/0269216306pm1117cr>
- [8] U. Mermerkaya, S. Bekmez, E. Alkan, M. Ayvaz, and M. Tokgozolu, "Evaluation of vacuum-assisted closure in patients with wound complications following tumour surgery," *International Wound Journal*, pp. n/a–n/a, jun 2014. [Online]. Available: <http://dx.doi.org/10.1111/iwj.12318>
- [9] T. Awad and M. Butcher, "Handling the sequelae of breast cancer treatment: use of NPWT to enhance patient independence," *Journal of Wound Care*, vol. 22, no. 3, pp. 162–166, mar 2013. [Online]. Available: <http://dx.doi.org/10.12968/jowc.2013.22.3.162>
- [10] B. Oh, S. Lee, K. A. Nam, H. Lee, and K. Chung, "Comparison of negative pressure wound therapy and secondary intention healing after excision of acral lentiginous melanoma on the foot," *British Journal of Dermatology*, vol. 168, no. 2, pp. 333–338, jan 2013. [Online]. Available: <http://dx.doi.org/10.1111/bjd.12099>
- [11] H. Bi, S. Fang, D. Jiang, X. Xing, J. Zhu, X. Wang, H. Dai, X. Zhong, and J. Li, "Ultrasound-guided scraping of fibrous capsule plus bilayered negative pressure wound therapy for treatment of refractory postmastectomy seroma," *Journal of Plastic, Reconstructive & Aesthetic Surgery*, vol. 68, no. 3, pp. 403–409, mar 2015. [Online]. Available: <http://dx.doi.org/10.1016/j.bjps.2014.11.007>