ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUL1128

Hypnosedation in Uterovaginal Brachytherapy: A Promising Alternative to Anesthesia

M. Taouchikht[1]; S. Abdou[2]; H. Fares[3]; A. Yaacoubi[4]; I. Lahdiri[5]; K. Nouni[6]; A. Lachgar[7]; H. El Kacemi[8]; T. Kebdani[9]; K. Hassouni[10]
Department of Radiotherapy, National Oncology Institute, Mohammed V University, Morocco

Abstract :- Cervical cancer poses a significant health challenge in Morocco, and uterovaginal brachytherapy is essential for treating advanced cases. This study evaluates the use of hypnosedation as an alternative to traditional anesthesia methods during brachytherapy. Conducted over two months at the National Oncology Institute in Rabat, Morocco, the study included five patients previously treated with external radiotherapy and chemotherapy. Hypnosedation was used in the 3rd and 4th brachytherapy sessions, replacing spinal analgesia. Patients reported a reduction in pain and expressed high satisfaction with hypnosedation compared to traditional methods. This approach offers a promising alternative to conventional anesthesia, providing effective pain management and improved patient comfort.

I. INTRODUCTION

In Morocco, cervical cancer represents a major public health issue, ranking second only to breast cancer in terms of incidence and mortality among Moroccan women, with approximately 2200 new cases and nearly 1200 deaths recorded each year (1, 2). Uterovaginal brachytherapy is an essential component of the treatment for locally advanced cervical cancer. This technique involves administering radioactive sources that deliver a targeted dose to the tumor, thus minimizing damage to surrounding healthy tissues. However, pain management during this procedure remains a crucial challenge for the success of brachytherapy.

Over the years, various anesthesia methods, including sedation and spinal analgesia, have been used to alleviate patient pain during brachytherapy (3, 4, 5, 6). However, these approaches are not without drawbacks or potential risks, such as adverse reactions, prolonged postoperative recovery, and additional costs (7, 8). Hypnosis, as a state of deep relaxation between wakefulness and sleep, is emerging as a promising alternative to traditional anesthesia, generating increasing interest in the medical field (9, 10, 11, 12).

This prospective study is conducted in the context of exploring hypnosis as an innovative option for managing patient pain during uterovaginal brachytherapy. The objective of this research is to determine the effectiveness of hypnosis as an alternative to sedation or spinal analgesia in this clinical setting.

II. MATERIALS AND METHODS

- Study Period: This prospective study was conducted over a period of 2 months, in May and June 2022, at the Radiotherapy Department of the National Institute of Oncology in Rabat, Morocco.
- Participants: Five patients with locally advanced cervical cancer were included in this study. These patients had already received concurrent radiochemotherapy, consisting of external radiotherapy at a dose of 46 Gy in 23 fractions delivered to the pelvis using three-dimensional conformal radiotherapy (3D-CRT), along with weekly chemotherapy with Cisplatin (40 mg/m²). They were then referred for a boost treatment using high-dose-rate (HDR) uterovaginal brachytherapy with a 4x7 Gy regimen (13,14).
- Pre-consultation: Prior to hypnosis application, patients underwent a pre-consultation with the hypnotist. This step aimed to explain the hypnosis-assisted brachytherapy procedure, assess patients' motivation, and address any questions they may have had. Patients were informed about the possibility of switching to general anesthesia or spinal analgesia in case hypnosis failed.
- Hypno-sedation Method: Hypno-sedation was performed by a general practitioner trained in hypnosis. It was offered to patients as a replacement for spinal analgesia during the 3rd and 4th brachytherapy sessions. A classical Ericksonian technique was used by our hypnotherapist: its principle involved guiding the patient to focus on a pleasant memory to induce a hypnotic state (15).

In the operating room, the radiation oncologist and the hypnotist coordinated their actions with discreet gestures to avoid disrupting the patients' state of "attentional focus."

- Pain Assessment: A visual analog scale (VAS) was used post-application to assess the most intense pain experienced by patients on a scale of 0 (no pain) to 10 (extreme pain). (Fig. 1)
- Satisfaction Evaluation: Patient satisfaction levels were evaluated using a questionnaire filled out after the intervention, comparing their experience during the 1st and 2nd sessions (under spinal analgesia) and during the 3rd and 4th sessions (under hypno-sedation). (Fig. 2)

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUL1128

- Data Analysis: The collected data were recorded on a data sheet, then entered, stored, and processed using SPSS25 and Excel 2013 software.

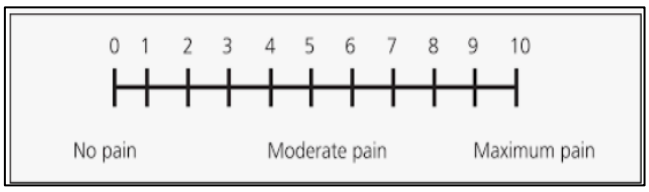

Fig 1: The Visual Analog Scale Used to Assess Pain Intensity

Evaluation of satisfaction	Are you satisfied with how the session went?
	If we were to go back, would you have chosen general anesthesia?
	Would you recommend the use of hypnosedation for brachytherapy to other patients?

Fig 2: Satisfaction Assessment Questionnaire

III. RESULTS

Five patients, with an average age of 51 years (ranging from 43 to 60 years), diagnosed with cervical cancer, were included in our study. Three of them (60%) were at stage IIB of the disease, while the other two (40%) were at stage IIIC. These patients had already received concurrent radiochemotherapy and were referred for a boost treatment using high-dose-rate (HDR) uterovaginal brachytherapy.

Three patients were treated using a Utrecht-type applicator, while two patients were treated with a Fletcher-type applicator. Spinal analgesia was used for the first two sessions, then replaced by hypno-sedation for the last two sessions.

- **Progression of Hypno-Sedation:** Four of the patients (80%) successfully underwent the brachytherapy application without requiring anesthesia. However, one patient (20%) experienced a failure to induce hypnosis, eventually requiring spinal analgesia to continue the procedure. This patient had particular social circumstances, including the recent death of a child and abandonment by her partner. The median duration of the intervention was 30 minutes, without any complications directly related to hypno-sedation.
- **Pain:** After the intervention, each patient assessed the most intense pain she had experienced. The scores reported on the visual analog scale varied, with values of 2.4, 5, and 8 (average 4.75) for the 3rd session and 2.3, 5, and 7 (average 4.25) for the last session. All four patients agreed that the most painful stage was during cervical dilation.
- **Satisfaction:** Significantly, all patients who underwent brachytherapy under hypno-sedation expressed satisfaction with this approach. They unanimously noted that it allowed them to recover immediately at the end of the application, unlike spinal analgesia, which was a key element for their comfort and well-being. Additionally, these patients believed that they could recommend the use of hypnosis as an alternative to anesthesia to other patients undergoing brachytherapy.

IV. DISCUSSION

This study demonstrates that uterovaginal brachytherapy under hypno-sedation is feasible and complication-free (80% success rate), with perceived pain levels deemed tolerable by patients, along with a high satisfaction rate (100%). Pain scores are slightly lower than those reported in the literature for uterovaginal brachytherapy under hypnosis (4.5 vs. 5.1), while the satisfaction rate is higher (100% vs. 85%) (16).

Other methods of brachytherapy without general anesthesia or spinal analgesia have been published, such as conscious sedation, where a similar maximum pain score is observed (4.7) (17), and local anesthesia, where pain was higher than in our study (6) (18,19).

A randomized study investigating relaxation during uterovaginal brachytherapy using music has also significantly demonstrated the benefits of musical relaxation in reducing pain and anxiety (20).

In comparison with other types of brachytherapy under hypnosis, notably hypno-sedation for prostate brachytherapy, similar results in maximum pain (4.6) and satisfaction rate (97%) have been observed (12).

In an international survey conducted among experts in gynecological cancers to determine methods used in brachytherapy, 46% opt for general anesthesia, 27% for spinal analgesia, and 28% for IV conscious sedation (21). The proportion of patients treated without any anesthetic medication is relatively low, confirming the uniqueness of our approach.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUL1128

The absence of anesthetic medication in our study presents numerous advantages, including reduced anesthesia risk, postoperative nausea, and delays due to anesthesia contraindications or unavailability of anesthesiologists. Hypno-sedation thus allows for reduced delays between the end of external radiotherapy and brachytherapy, which is particularly important given the major prognostic impact of treatment prolongation in cervical cancer, with a 1% loss of local control per day beyond 55 days (22,23,24,25).

However, it is important to note that our study has certain limitations, notably the small sample size due to the hypnotherapist's medical leave. Although the results are promising, future research with larger samples is planned to confirm these findings and introduce hypnosis into clinical practice.

V. CONCLUSION

Our research has explored the potential benefits of cervical cancer brachytherapy under hypno-sedation in terms of pain management, patient satisfaction, and avoidance of anesthesia-related issues (complications, contraindications, treatment delays), as well as cost savings in terms of equipment and personnel.

In conclusion, hypno-sedation is a feasible and promising approach that deserves further exploration and utilization in other areas of radiotherapy and medicine in general.

REFERENCES

[1]. ICO/IARC Human Papillomavirus and related diseases report in Morocco. Information centre on HPV and Cervical Cancer (HPV Information Centre) Summ Rep (2019)

[2]. UICC Global Cancer Control. GLOBOCAN 2020: New Global Cancer Data.

[3]. Viswanathan AN, Thomadsen B. American Brachytherapy Society consensus guidelines for locally advanced carcinoma of the cervix. Part I: General principles. Brachytherapy 2012;11:33e46.

[4]. Benrath J, Kozek-Langenecker S, H€upfl M, et al. Anaesthesia for brachytherapye51/2 yr of experience in 1622 procedures. Br J Anaesth 2006;96:195e200.

[5]. Isoyama-Shirakawa Y, Nakamura K, Abe M, et al. Caudal epidural anesthesia during intracavitary brachytherapy for cervical cancer. J Radiat Res (Tokyo) 2015;56:583e587.

[6]. Smith MD, Todd JG, Symonds RP. Analgesia for pelvic brachytherapy. Br J Anaesth 2002;88:270e276.

[7]. Lim KHC, Lu JJ, Wynne CJ, et al. A study of complications arising from different methods of anesthesia used in high-dose-rate brachytherapy for cervical cancer. Am J Clin Oncol 2004;27:449e451.

[8]. Frankart AJ, Meier T, Minges TL, et al. Comparison of spinal and general anesthesia approaches for MRI-guided brachytherapy for cervical cancer. Brachytherapy 2018;17:761e767.

[9]. Tefikow S, Barth J, Maichrowitz S, et al. Efficacy of hypnosis in adults undergoing surgery or medical procedures: A meta-analysis of randomized controlled trials. Clin Psychol Rev 2013;33:623e 636.

[10]. Stalpers LJA, da Costa HC, Merbis MAE, et al. Hypnotherapy in radiotherapy patients: A randomized trial. Int J Radiat Oncol 2005;61:499e506.

[11]. Musellec H, Bernard F, Houssel P, et al. [Ambulatory Essure implant placement sterilization procedure for women: Prospective study comparing general anesthesia versus hypnosis combined with sedation. Ann Fr Anesth Reanim 2010;29:889e896.

[12]. Chapet O, Udrescu C, Horn S, et al. Prostate brachytherapy under hypnosedation: A prospective evaluation. Brachytherapy 2019;18: 22-28.

[13]. Gerbaulet A, Bridier A, Haie-Meder C, et al. Curietherapie des cancers du col uterin. Methode de l'institut Gustave-Roussy. Bull Cancer Radiother 1992;79:107e117.

[14]. Haie-Meder C, P€otter R, Van Limbergen E, et al. Recommendations from Gynaecological (GYN) GEC-ESTRO Working Group* (I): Concepts and terms in 3D image based 3D treatment planning in cervix cancer brachytherapy with emphasis on MRI assessment of GTV and CTV. Radiother Oncol 2005;74:235e245

[15]. Erickson MH, Rossi EL. Hypnotherapy: An Exploratory Casebook. Har/Cas edition. New York: Irvington Pub; 1979. p. 507.

[16]. M. Kissel et al. /Hypnosedation for endocavitary uterovaginal applications: A pilot study Brachytherapy - (2020)

[17]. Bhanabhai H, Samant R, Grenier EC, et al. Pain assessment during conscious sedation for cervical cancer high-dose-rate brachytherapy. Curr Oncol Tor Ont 2013;20:e307ee310.

[18]. Chen HC, Leung SW, Wang CJ, et al. Local vaginal anesthesia during high-dose-rate intracavitary brachytherapy for cervical cancer. Int J Radiat Oncol Biol Phys 1998;42:541e544.

[19]. Leong YH, Tan KHS, Ai Choo B, et al. Novel anesthetic technique for combined intracavitary and interstitial brachytherapy for cervix cancer in an outpatient setting. J Contemp Brachytherapy 2017;3: 236e241.

[20]. Chu-Hui-Lin Chi G, Young A, McFarlane J, et al. Effects of music relaxation video on pain and anxiety for women with gynaecological cancer receiving intracavitary brachytherapy: A randomised controlled trial. J Res Nurs 2015;20:129e144

[21]. Viswanathan AN, Creutzberg CL, Craighead P, et al. International brachytherapy practice patterns: A survey of the gynecologic cancer Intergroup (GCIG). Int J Radiat Oncol 2012 Jan; 82:250e255.

[22]. Fyles A, Keane TJ, Barton M, et al. The effect of treatment duration in the local control of cervix cancer. Radiother Oncol J Eur Soc Ther Radiol Oncol 1992;25:273e279.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUL1128

[23]. Lanciano RM, Pajak TF, Martz K, et al. The influence of treatment time on outcome for squamous cell cancer of the uterine cervix treated with radiation: A patterns-of-care study. Int J Radiat Oncol Biol Phys 1993;25:391e397.
[24]. Perez CA, Grigsby PW, Castro-Vita H, et al. Carcinoma of the uterine cervix. I. Impact of prolongation of overall treatment time and timing of brachytherapy on outcome of radiation therapy. Int J Radiat Oncol Biol Phys 1995;32:1275e1288.
[25]. Petereit DG, Sarkaria JN, Chappell R, et al. The adverse effect of treatment prolongation in cervical carcinoma. Int J Radiat Oncol Biol Phys 1995;32:1301e1307.