Complementary Therapies in Clinical Practice 34 (2019) 109–112

Contents lists available at ScienceDirect

Complementary Therapies in Clinical Practice

journal homepage: www.elsevier.com/locate/ctcp

Massage and reflexology for post-operative cancer cystectomy patients: Evaluation of a pilot service

ARTICLE INFO

Keywords:
Cancer
Pain
Wellbeing
Reflexology
Massage
Cystectomy

ABSTRACT

Background: and purpose: Radical cystectomy is a gold standard treatment for invasive bladder cancer. However the length of the operation is long and recovery is usually slow and painful. There is growing recognition of the importance of health related quality of life among patients undergoing invasive surgical procedures. In response, a massage and reflexology service was piloted and evaluated.

Materials and methods: One hour of massage, reflexology or a combination of both was provided twice to 38 cystectomy patients by a trained therapist in their acute post-operative phase (day one and day three). Self-reported concerns, well-being and pain were measured before and immediately after the therapy. Pain was measured once more in the early evening of each therapy day.

Results: Self-reported concerns and pain were significantly reduced following the intervention on both days treatments were given. Pain was measured again on the evening of each of the intervention days, and this reduction was maintained on day one but not day three. Well-being scores were also significantly improved pre to post intervention on both day one and day three. Qualitative comments highlighted that this complementary therapy service was viewed both beneficial and relaxing. There were no significant differences between the different therapies used (massage, reflexology, or a combination of the two).

Conclusion: The findings of this pilot evaluation very tentatively support the benefits of cancer cystectomy patients receiving massage and/or reflexology in their acute postoperative recovery period. There are many limitations to this evaluation. Further research utilising a randomised control methodology alongside medical, independent markers is warranted, and currently in development.

1. Introduction

Bladder cancer is the 10th most common cancer in the UK [1]. Treatment can be traumatic and life changing, particularly for patients who undergo radical cystectomies [2]. The operation is complex and can take around 6 h to complete. The patient's bladder is removed and then reconstructed outside their body. To facilitate the surgery, they are placed in a physically awkward position. This, together with the complexity and invasive nature of the procedure often means that patients have a slow and painful recovery [3,4].

Concurrently, there is growing recognition of the importance of health related quality of life among cancer patients [5], and patients undergoing invasive surgical procedures [6]. In line with this, research suggests that massage is a safe adjuvant therapy that can be beneficial in reducing postoperative pain in patients undergoing major cardiac [7–9] or orthopaedic [10] surgery. Similar findings have also been reported with cancer patients. Such studies have found massage therapy to significantly reduce pain, anxiety, distress and improve quality of life [11,12], as well as help reduce anxiety, tension and nausea in these patient populations [7–9,13,14]. Foot reflexology has also been shown to reduce cancer related pain [15,16] as well as postoperative pain for caesarean births [17] and coronary bypass surgery [18,19]. Foot reflexology has also been reported to help decrease chemotherapy induced nausea [20] and anxiety [15,16,21] in cancer patients.

In response, a massage and reflexology service for acute post-operative cancer cystectomy patients was piloted. The service was evaluated with the aim of identifying whether massage, foot reflexology or a combination of the two, has a positive impact on patients' acute postoperative recovery. This was with a particular focus on whether these therapies can help reduce patients' self-reported concerns, pain and/or improve well-being, while they are in hospital recovering from their operation.

2. Materials and methods

2.1. Recruitment process

All cancer patients undergoing a cystectomy at the Royal Surrey County Hospital between June 2016 and January 2017 were offered the service. During the patient's pre-operative assessment (the day before surgery), the bladder cancer nurse explained that there was a free complementary therapy service available whereby massage and/or foot reflexology would be given to them on day one and three post-operatively. Patients were also given an information sheet that explained the reasoning behind the service (i.e. that massage and reflexology might help relieve post-operative symptoms); and that they would be asked to fill in some questionnaires to see if the therapy was helpful in any way. The nurse made it clear to all patients that there was no obligation to take this service up; and that they could pull out at any time without any consequences to their ongoing treatment. If the patient agreed to take part, the nurse took written consent.

https://doi.org/10.1016/j.ctcp.2018.11.010
Received 10 August 2018; Received in revised form 16 October 2018; Accepted 13 November 2018
1744-3881/ © 2018 Elsevier Ltd. All rights reserved.

Table 1
MYCaW profile score, self-reported concerns, wellbeing and pain scores on day 1 and day 3.[a]

		Mean DAY ONE	SD	t	*df*	Sig (2 tailed)	D
MYCaW total 'profile' Score (n = 30)[b]	Before	3.76	1.14	5.27	29	0.01	0.714
	After	2.75	1.25				
MYCaW Concern 1 (n = 30)	Before	4.10	1.52	5.36	29	0.01	0.785
	After	3.00	1.29				
MYCaW Concern 2 (n = 27)	Before	3.00	1.29	3.99	26	0.01	0.694
	After	2.67	1.33				
MYCaW Wellbeing (n = 30)	Before	3.33	1.58	4.64	29	0.01	0.584
	After	2.43	1.50				
Pain score 1 (n = 28)	Before	4.37	2.10	5.08	26	0.01	0.621
	After	3.15	1.83				
Pain Score 2 (n = 22)	Before	4.72	2.14	2.85	21	0.01	0.406
	After (Evening)	3.95	1.65				
DAY THREE							
MYCaW total 'profile' Score (n = 26)	Before	3.27	1.15	8.82	25	0.01	0.980
	After	2.06	1.32				
MYCaW Concern 1 (n = 26)	Before	3.69	1.41	5.87	25	0.01	0.911
	After	2.31	1.62				
MYCaW Concern 2 (n = 19)	Before	3.10	1.49	6.51	18	0.01	0.558
	After	2.26	1.52				
MYCaW Wellbeing (n = 26)	Before	2.96	1.40	6.58	25	0.01	0.816
	After	1.85	1.32				
Pain Score 1 (n = 23)	Before	Non parametric	Data[c]				
	After						
Pain Score 2 (n = 14)	Before	2.64	1.69	0.6	13	0.05	0.621
	After (Evening)	2.92	2.05				

[a] Unless otherwise stated, paired samples t-tests conducted.
[b] The total MYCaW 'profile' score combined patient identified MYCaW concerns and wellbeing.
[c] Wilkcoxon signed ranks test found pain score significantly reduced pre to post therapy: $T = 3.24$, $p < 0.01$. $r = 0.512$.

2.2. Measures

Self-reported concerns, well-being and pain were assessed via two validated measures pre and post the complementary therapy on both day one and day three; the Measure Yourself Concerns and Wellbeing questionnaire (MYCaW), and the Pain Thermometer (PT).

MYCaW is a patient centred questionnaire specifically designed for use with cancer patients [22,23]. Patients' rate up to two of their own identified concerns and also their general well-being on a 7 point scale. Concerns and wellbeing scores are also combined to formulate a total MYCaW 'profile' score. The follow up MYCaW questionnaire can be given at any point after the initial form has been completed (in this evaluation, it was completed soon after the complementary therapy was given). This asks them to rate their previously identified concerns and general wellbeing using the same scales (but without seeing their initial ratings). Within the follow up questionnaire, patients are also invited to describe "any other things affecting your health" and to "outline what has been most important to you" in relation to the therapy received. The filling in of these open ended questions is optional.

The PT is a simple visual tool to assess pain, and has been validated in adult populations [24,25]. It contains a faces rating scale of 0 (no pain) to 10 (extreme pain) mapped onto the picture of a thermometer. The PT requires patients to indicate which point, or face, corresponds with their current level of pain.

On treatment days (day one and day three), the therapist filled in MYCaW and the PT with the patient pre therapy and the patient filled these in on their own post therapy, and placed these completed forms in a folder provided. Patients also filled in the PT early evening of each therapy day. Completed questionnaires were picked up by the bladder cancer nurse on day four.

2.3. Service delivery

Post-operatively, a qualified and experienced complementary therapist provided 1 h of massage, foot reflexology or a combination of both, to cystectomy patients in the morning on day one and day three after their surgery. The treatment was given in ICU on day one and in ICU or a general ward on day three. On day one, the patient chose which treatment they wanted after the therapist explained the interventions, taking into account what was possible due to the patient's condition. The same therapy was given both days.

When reflexology was given, a full body systems routine was undertaken on the feet with an emphasis on the vagus nerve, stomach, bowel, diaphragm, shoulders and the immune system. Imbalances were recorded on the patient's notes in terms of reflexes found, however these were not formally cross-referenced with MYCaW and PT scores. Massage was undertaken in a chair (or bed if this was not possible) and focused on the neck, shoulder and arms, with the aim of releasing tension. No cross referencing with MYCaW or PT scores was undertaken.

2.4. Data analysis

Kruskal-Wallis H test was used to ascertain if there were any statistically significant differences in the concerns, wellbeing, MYCaW profile scores and pain pre to post treatment. Paired samples t-tests (and a Wilcoxon signed ranks test with nonparametric data) were used to compare means of the same variables over different time points.

3. Results

3.1. Patient sample

The cystectomy nurse asked all cancer patients undergoing cystectomies during the period the pilot service ran if they wanted to receive this service (no patient was viewed unable to take part), and all consented (n = 38). On four occasions notes went missing during the transition from ICU to the general ward. The results are therefore based on 34 patients: 28 male (82%) and 6 female (18%); aged between 42 and 85 (M = 71.29, SD = 8.67), with the majority of patients (65%)

being over 70 years old. For the purposes of this pilot service, no other demographic information was collected.

3.2. Findings

All patients received a therapy on at least one day. Some were asleep or too ill to receive the therapy the other day (12% day one; 14% day three). Patient reported concerns revolved around pain (shoulder and abdomen/stomach/wound site) and tension/anxiety on day one; and pain (abdomen/stomach/wound site) and nausea and bloating/wind on day three. Table 1 illustrates how MYCaW self-reported concerns, wellbeing, and total profile scores, along with pain (via the PT), significantly improved following the therapy on both day one and day three. A significant reduction in pain was also observed in the evening on day one but not day three. Other data not outlined on Table 1 found significant improvements in wellbeing pre-therapy day one to post-therapy day three ($p < 0.01$). The same comparison on pain scores suggests a decline in pain, but this did not reach significance ($p > 0.09$). Because concerns could be different on each therapy day, pre-intervention day one and post intervention day three comparisons were not undertaken. There were no significant differences between the complementary therapies used (massage, foot reflexology or a combination of the two). Qualitative comments written on MYCaW highlights how the service was viewed beneficial and relaxing (e.g. *'haven't had reflexology or massage before, found it very relaxing and beneficial.' 'Feel calmer, relaxed and enjoyed it. Pain in shoulder gone', 'The relief of tension, I feel better in my mind and body'*).

4. Conclusion

This service evaluation tentatively suggests that massage and foot reflexology might help to reduce pain, particularly immediately after the therapy, and improve wellbeing, in postoperative cancer cystectomy patients. The MYCaW findings also suggest the potential for massage and/or reflexology to help reduce anxiety/tension, bloating/wind and nausea in this patient population. The only measures that failed to reach a statistically significant reduction were between the PT before therapy on day one and the evening of day three; and before therapy on day three and the evening of that day. This is in contrast with an improvement immediately following the intervention on both days. These findings mirror other studies that have shown similar effects across pain measures [26,27], and highlights the possibility of these therapies predominantly mediating pain immediately after treatment versus longer term.

The type of intervention offered did not affect the results on either day one or day three. This finding is similar to other research that found no statistical difference on wellbeing outcomes irrespective of the type of complementary therapy offered [28]. All patients agreed to receive the service, which implies a high acceptability of complimentary therapies for this patient population.

There are many limitations to this service evaluation. In particular, the small sample size ($n = 38$) and partial data ($n = 34$) means there is a lack of statistical power to draw firm conclusions. With regards to the therapies given, any associations found between specific points and MYCaW/PT scores were written in the patient's notes but not formally cross referenced. Thus useful information might have been lost. Table 1 also highlights that not all patients filled in all the questionnaires at different time points. This was because they did not receive the therapy, or forgot to fill in the questionnaire. There were also occasions, not documented in the patient notes, when the patient asked the therapist to help them fill in the post therapy MYCaW and PT. This could have influenced the patient to answer more favourably. Pain medications the patients were on was also not documented. This creates uncertainty as to whether, particularly for the early evening PT, a decrease in pain was due to the complementary therapy given, or pain relief medication.

However despite these limitations, the positive findings support more thorough research utilising a randomised control methodology, on the impact of complementary therapies on this patient population. This RCT is currently in development and will focus on massage and/or reflexology's impact on pain, wellbeing, ability to pass wind/bowel movements (that can often be problematic for this patient group), and length of hospital stay. The limitations of this current evaluation will be addressed and the focus will be on both self-reported and independent medical markers of change, with more in-depth validated measures addressing quality of life, beliefs and pain, also being utilised. To limit any influence from the actual surgery (e.g. from the anaesthetic), the complementary therapy will be given on day two (instead of day one) and day three post-operatively.

Ethics approval

Formal written approval for the service evaluation was granted by the Royal Surrey County hospital's institutional review board.

Funding

The service was funded by the Royal Surrey Bladder Cancer Research Fund.

Declaration of interest

The authors have no conflicts of interest to disclose.

Acknowledgements

With thanks to Fountain Centre complementary therapists: Debbie Morton, Anusha Pillay and Alison Tolley who provided all complementary therapy treatments.

References

[1] Cancer Research UK. Retrieved July 2018: https://www.cancerresearchuk.org/about-cancer/bladder-cancer/about.
[2] A. Månsson, W. Månsson, B.J. Danna, et al., When the bladder is gone: quality of life following different types of urinary diversion. Assessing symptom burden in bladder cancer: an overview of bladder cancer specific health-related quality of life instruments, World J. Urol. 17 (4) (1999) 211–218.
[3] B.J. Danna, M.J. Metcalfe, E.L. Wood, J.B. Shah, Assessing symptom burden in bladder cancer: an overview of bladder cancer specific health-related quality of life instruments, Bladder Cancer 2 (3) (2016) 329–340.
[4] National Institute for Health and Care Excellence, Bladder Cancer: Diagnosis and Management | Guidance and Guidelines | NICE [Medical], (2015, February) https://www.nice.org.uk/guidance/ng2 , Accessed date: 17 July 2017.
[5] M. Basch, E. Abernethy, A.P. Mullins, et al., Recommendations for incorporating patient-reported outcomes into clinical comparative effectiveness research in adult oncology, J. Clin. Oncol. 30 (34) (2012) 4249–4255.
[6] M. Gacci, O. Saleh, T. Cai, et al., Quality of life in women undergoing urinary diversion for bladder cancer: results of a multicenter study among long-term disease-free survivors, Health Qual. Life Outcome 12 (11) (2013) 11–43.
[7] M. Boitor, C. Gélinas, M. Richard-Lalonde, B.D. Thombs, The effect of massage on acute postoperative pain in critically and acutely ill adults post-thoracic surgery: systematic review and meta-analysis of randomized controlled trials, Heart Lung 46 (5) (2017) 339–346.
[8] B.A. Bauer, S.M. Cutshall, L.J. Wentworth, et al., Effect of massage therapy on pain, anxiety, and tension after cardiac surgery: a randomized study, Compl. Ther. Clin. Pract. 16 (2) (2009) 70–75.
[9] S.M. Cutshall, L.J. Wentworth, D. Engen, et al., Effect of massage therapy on pain, anxiety, and tension in cardiac surgical patients: a pilot study, Compl. Ther. Clin. Pract. 16 (2) (2010) 92–95.
[10] M. Eghbali, H. Lellahgani, N. Alimohammadi, et al., Study on effect of massage therapy on pain severity in orthopedic patients, Iran. J. Nurs. Midwifery Res. 15 (1) (2010) 32–36.
[11] N. López-Sendín, F. Alburquerque-Sendín, J.A. Cleland, C.J. Fernández-de-las-Peñas, Effects of physical therapy on pain and mood in patients with terminal cancer: a pilot randomized clinical trial, Altern. Complem. Med. 18 (5) (2012) 480–486.
[12] B.R. Cassileth, A.J. Vickers, Massage therapy for symptom control: outcome study at a major cancer center, Pain Symp. Manage 28 (3) (2004) 244–249.
[13] C. Boyd, C. Crawford, C.F. Paat, A. Price, et al., Evidence for massage therapy (EMT) working group. The impact of massage therapy on function in pain populations-A systematic review and meta-analysis of randomized controlled trials: Part III,

surgical pain populations, Pain Med. 17 (9) (2016) 1757–1772.
[14] S. Wilkinson, K. Barnes, L. Storey, Massage for symptom relief in patients with cancer: systematic review, J. Adv. Nurs. 63 (5) (2008) 430–439.
[15] N.L. Stephenson, S.P. Weinrich, A.S. Tavakoli, The effects of foot reflexology on anxiety and pain in patients with breast and lung cancer, AS.Oncol. Nurs. Forum. 27 (1) (2000) 67–72.
[16] N.L. Stephenson, M. Swanson, J. Dalton, et al., Partner-delivered reflexology: effects on cancer pain and anxiety, Oncol. Nurs. Forum 34 (1) (2007) 127–132.
[17] J. Varghese, J. George, S.G. Yathikumara, A randomized control trial to determine the effect of foot reflexology on intensity of pain and quality of sleep in post caesarean mothers, J. Nurs. Health Sci. 3 (1) (2014) 39–43.
[18] M. Bagheri-Nesami, S.A. Shorofi, N. Zargar, et al., The effects of foot reflexology massage on anxiety in patients following coronary artery bypass graft surgery: a randomized controlled trial, Compl. Ther. Clin. Pract. 20 (1) (2014) 42–47.
[19] A.M. Afify, G.M. Shawky, Acute response of pain and blood gases to foot reflexology versus transcutaneous electric nerve stimulation in patients following coronary artery bypass graft surgery, Med. J. Cairo Univ. 85 (2) (2017) 727–733.
[20] R. Quattrin, A. Zanini, S. Buchini, Use of reflexology foot massage to reduce anxiety in hospitalized cancer patients in chemotherapy treatment: methodology and outcomes, J. Nurs. Manag. 14 (2) (2006) 96–105 D. 2006 Mar;14(2):96-105.
[21] A. Özdelikara, M. Tan, The effect of reflexology on chemotherapy-induced nausea, vomiting, and fatigue in breast cancer patients, Asia Pacific J. Onc. Nurs. 4 (3) (2017) 241–249.
[22] C. Paterson, K. Thomas, A. Manasse, et al., Measure Yourself Concerns and Wellbeing (MYCaW): an individualised questionnaire for evaluating outcome in cancer support care that includes complementary therapies, Compl. Ther. Med. 15 (1) (2007) 38–45.
[23] R. Jolliffe, H. Seers, S. Jackson, et al., The responsiveness, content validity, and convergent validity of the measure Yourself concerns and wellbeing (MYCaW) patient-reported outcome measure, Int. Canc. Ther. 14 (1) (2015) 26–34.
[24] K. Herr, K.F. Spratt, L. Garand, L. Li, Evaluation of the Iowa pain thermometer and other selected pain intensity scales in younger and older adult cohorts using controlled clinical pain: a preliminary study, Pain Med. 8 (7) (2007) 585–600.
[25] M. Choiniere, R. Amsel, A visual analogue thermometer for measuring pain intensity, J. Pain Symptom Manag. 11 (95) (1996) 299–311.
[26] T. Field, Massage therapy research review, Compl. Ther. Clin. Pract. 24 (2016) 19–31.
[27] C.W. Karlson, N.A. Hamilton, M.A. Rapoff, Massage on experimental pain in healthy females: a randomized controlled trial, J. Health Psychol. 19 (3) (2014) 427–440.
[28] J. Dyer, J.,K. Thomas, C. Sandsund, C. Shaw, Is reflexology as effective as aromatherapy massage for symptom relief in an adult outpatient oncology population? Compl. Ther. Clin. Pract. 19 (3) (2013) 139–146.

Natalie Silverdale*
The Fountain Centre, St Luke's Cancer Centre, Royal Surrey County Hospital, Guildford, England, GU2 7XX, United Kingdom
E-mail address: natalie.silverdale@nhs.net.

Mark Wherry
University of Surrey, Guildford, England, GU2 7JP, United Kingdom

Alison Roodhouse
St Luke's Cancer Centre, Royal Surrey County Hospital, Guildford, England, GU2 7XX, United Kingdom

* Corresponding author.