



Case Report

Effect of Yoga and Naturopathy Intervention on Pain Management and Quality of Life in Patient with Rectal Carcinoma

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ABSTRACT

Rectal carcinoma, particularly in advanced stages, represents a significant oncological challenge that substantially impacts patients' quality of life (QoL) and is associated with severe pain and debilitating symptoms. Advanced-stage rectal carcinoma presents unique management challenges due to tumour invasion and nodal involvement. Conventional treatments, including chemotherapy and pharmacological interventions, often result in considerable adverse effects, necessitating the integration of complementary therapeutic approaches. Yoga and naturopathy have demonstrated promising potential in alleviating cancer-related symptoms and improving QoL in oncology patients. This case report documents the comprehensive treatment of a 48-year-old male diagnosed with CT4aN1 stage rectal carcinoma using integrative yoga and naturopathy interventions alongside conventional therapy. The intervention protocol included specific therapeutic asanas, structured pranayama techniques, mud therapy, hydrotherapy, therapeutic massage, herbal packs and a carefully designed plant-based nutritional regimen. The treatment approach was tailored to address the specific challenges associated with advanced-stage rectal carcinoma. The interventions resulted in a clinically significant reduction in pain intensity and enhanced QoL, as objectively measured by the European Organisation for Research and Treatment of Cancer QoL questionnaire for colorectal 29 functional and symptom assessment scales. The patient demonstrated marked improvement in anxiety levels, reduced symptom burden and enhanced functional capacity throughout the intervention period. This case study provides evidence for the potential therapeutic benefits of integrative yoga and naturopathy approaches in managing pain and improving QoL in patients with advanced-stage rectal carcinoma. The findings suggest that such complementary interventions may serve as valuable adjuncts to conventional oncological care. Further controlled studies with larger sample sizes and longer follow-up periods are warranted to validate these preliminary findings and establish evidence-based protocols for the integration of yoga-naturopathy interventions in advanced rectal carcinoma management.

Keywords: Carcinoma, Naturopathy, Pain management, Quality of life, Yoga

INTRODUCTION

Rectal carcinoma represents one of the most prevalent and life-threatening malignancies worldwide, with colorectal cancers ranking among the leading causes of cancer-related mortality globally.^[1] The disease burden continues to escalate, with genetic predisposition serving as a significant risk factor, particularly evident in the approximately 18% of cases that present as early-onset rectal carcinoma in patients younger than 50 years.^[2] Recent epidemiological data from 2017 to 2021 indicate an annual incidence rate of 36.5/100,000 individuals for colorectal cancer, underscoring the substantial public health impact of this malignancy.^[3] Contemporary management of rectal carcinoma relies heavily on conventional therapeutic modalities, including systemic

chemotherapy and comprehensive pharmacological interventions for symptom control. Pain management protocols typically incorporate medications such as transdermal buprenorphine, temazepam and paracetamol to address cancer-related pain and associated symptoms.^[4] Despite their clinical efficacy, these conventional treatments frequently result in significant adverse effects, including gastrointestinal toxicity, neurological complications and substantial deterioration in patients' quality of life (QoL), thereby necessitating the exploration of complementary therapeutic approaches.

In recent decades, integrative medicine approaches have garnered considerable attention in oncological care. Yoga therapy has emerged as a particularly promising

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complementary intervention, demonstrating efficacy in managing cancer-related symptoms, enhancing physical and psychological well-being and improving overall QoL in cancer patients.^[5] Similarly, naturopathic interventions encompassing structured dietary modifications, hydrotherapy protocols, therapeutic massage and evidence-based relaxation techniques have shown significant potential in addressing pain management and comprehensive symptom control in oncological populations.^[6] Given the limitations of conventional treatment approaches and the growing body of evidence supporting integrative interventions, this case study aims to evaluate the therapeutic impact of structured short-term yoga and naturopathy interventions on pain management, functional outcomes and overall QoL in a patient diagnosed with advanced-stage rectal carcinoma.

CASE REPORT

A 48-year-old male patient with histologically confirmed CT4aN1 stage rectal carcinoma was admitted to our institution on 05 October 2024, for comprehensive symptom management and alternative therapeutic intervention. The advanced staging indicated tumour invasion through the bowel wall into adjacent structures (T4a) with regional lymph node involvement (N1), representing locally advanced disease with significant clinical implications.

The patient presented with a constellation of debilitating symptoms significantly impacting his QoL and functional status. His primary complaints included chronic lower back pain with neuropathic characteristics, radiating along the right lower extremity extending to the toes, persisting for approximately 1 month before admission. Additional presenting symptoms comprised rectal bleeding, severe sleep disturbance with frequent nocturnal awakenings and nocturia with increased urinary frequency during nighttime hours. The patient reported clinically significant unintentional weight loss over the preceding 5-month period during his ongoing chemotherapy regimen, which is characteristic of advanced-stage colorectal malignancy.

At the time of admission, the patient was receiving multimodal therapy consisting of conventional chemotherapy with oral capecitabine 500 mg, an oral fluoropyrimidine antimetabolite specifically indicated for advanced colorectal cancer treatment. His complementary regimen included antioxidant supplementation with Imuuxanth antioxidant 15 mg orally for cellular protection, Renatus Nova 15 mg orally as a nutritional wellness supplement, and XanthPro Renatus 15 mg orally providing xanthophyll-based antioxidant support. All medications were administered through the oral route with documented patient compliance. On initial evaluation, a comprehensive baseline assessment was conducted using validated instruments, including the visual analogue scale (VAS) for pain assessment^[7] the European Organisation for Research and Treatment

of Cancer quality of life questionnaire for colorectal cancer patients (EORTC QLQ-CR29)^[6] and systematic physical examination. The initial assessments revealed severe symptomatology with marked impairment in QoL parameters. Physical examination documented a body mass index of 19.1 kg/m², indicating underweight status consistent with advanced malignancy and chemotherapy-related effects. Diagnostic colonoscopy performed on 14 May 2024, revealed an ulcero-proliferative lesion located immediately above the anal verge, extending proximally to 15 cm with circumferential involvement of 50% of the rectal wall, consistent with the CT4aN1 staging. The patient was admitted on 05 October 2024, with pre-intervention assessment and initiation of integrated yoga and naturopathy protocols commencing on 6 October 2024. The intensive intervention period continued until 14 October 2024, with post-intervention assessment and discharge completed on the same day. A structured follow-up period from 14 October to 20 October 2024 was implemented to monitor sustained therapeutic effects and symptom evolution.

The comprehensive therapeutic protocol incorporated a multimodal integrative approach combining traditional yoga practices, naturopathic interventions and lifestyle modifications [Table 1]. The yoga component included specific therapeutic asanas: Ardha Uttanpadasana, Setu Bandhasana, Shava Uddharakarshanasana, Supta Uddharakarshanasana and Ardha Shalabhasana, performed for 15 min 3 rounds daily to enhance flexibility, circulation and core stability. Respiratory interventions consisted of Nadishodhana pranayama (alternate nostril breathing) for 10 min twice daily to promote autonomic balance, complemented by Aswini mudra practised for 10 min thrice daily for pelvic floor strengthening. Mind-body integration was achieved through deep relaxation techniques and sectional breathing exercises implemented for 20 minutes once daily.

Nutritional intervention emphasised a structured plant-based protocol of approximately 500 kcal/day, incorporating seasonal fruits, vegetables, fresh juices, nutrient-dense salads and sprouted grains, designed to optimise nutrient density while supporting natural detoxification processes. Therapeutic bodywork included a comprehensive full-body massage with targeted lower back and lower extremity massage for 45 minutes weekly to address pain and improve circulation. Hydrotherapy treatments encompassed cold hip baths, steam therapy and therapeutic pelvic packs, each administered for 15 min per session to reduce inflammation and enhance local circulation.^[8]

Naturopathic interventions included mud therapy with therapeutic application of mud packs to the abdomen, periorbital region and lower extremities for 20 min daily to reduce systemic inflammation and improve peripheral circulation.^[9] Herbal therapy utilised traditional preparations

including Pirandai (*Cissus quadrangularis*) and Seenthal Kodi (*Cocculus hirsutus*) packs for localised anti-inflammatory effects, applied for 30 min to one and half hour daily. Complementary acupressure with moxibustion targeted specific therapeutic points including Stomach 36 (Zusanli), Spleen 6 (Sanyinjiao) and Gallbladder 34 (Yanglingquan) for 15 min daily to modulate pain perception and enhance energetic balance.^[10]

Assessment instruments

The VAS served as the primary pain assessment tool, utilising a standardised 10-point scale where 0 indicates complete absence of pain, scores 1–2 represent mild pain, 3–4 denote moderate pain, 5–6 reflect severe pain, 7–8 correspond to very severe pain and 9–10 signify maximum possible pain intensity.^[7] The EORTC QLQ-CR29 provided comprehensive QoL assessment specifically validated for colorectal cancer patients, evaluating both functional domains (physical, emotional and social functioning) and symptom-specific parameters relevant to colorectal malignancy and its treatment sequelae.^[6]

RESULTS

After implementing yoga and naturopathy interventions, the patient showed marked clinical improvement. Pain levels, as measured by the VAS, decreased substantially from 6 (indicating severe pain) to 2 (mild pain). QoL also improved significantly, with the EORTC QLQ-CR29 total score dropping from 44 to 34, reflecting reduced symptom severity and enhanced overall well-being. As detailed in Tables 2-4, EORTC QLQ-CR29 subscales showed marked improvements across functional and symptom domains, with notable reductions in anxiety (4→2), urinary symptoms (night time frequency 4→2) and gastrointestinal symptoms (rectal pain 3→1, mucus in stools 2→1). Treatment-related symptoms also improved (taste problems 2→1), while bowel function parameters and body image scores remained stable throughout the intervention period. No adverse effects were reported throughout the intervention period or during follow-up.

Table 1: A detail of the yoga and naturopathy intervention given to patient.

Name of the therapy	Name of the specific treatment	Duration	Frequency
Asana	Ardha uttanpadasana, sedhu bandhasana, shava udharakarshanasana, supta udharakarshanasana and ardha shalabasana	15 min	3 rounds
Pranayama	Nadi shodhana pranayama	10 min	10 round/2 times/day
Mudra	Aswini mudra	10 min	3 times/day
Relaxation technique	Deep Relaxation technique and sectional breathing	20 min	1 time/day
Mud therapy	Mud pack to abdomen and eyes and partial application to both legs	20 min	1 time/day
Hydrotherapy	Cold hip bath, pelvic pack and steam bath	Each treatment 15 min	1 time/day
Massage	Full body massage, partial massage to lower back and right side of leg posterior aspect	45 min/week, 15 min/one time/day	1 time/day
Herbal pack	Pirandai Pack, Seenthil kodi pack	30 min, one and half hour	1 time/day
Acupressure with moxa	Stomach 36 Spleen 6 Gallbladder 34	15 min	1 time/day

Table 2: Functional scales of EORTC QLQ-CR29.

Domain	EORTC QLQ-CR29 item numbers	Pre-assessment score	Post-assessment score
Body image	Q45: Less attractive due to disease/treatment	2	2
	Q46: Less feminine/masculine	1	1
	Q47: Dissatisfied with body	2	2
Anxiety	Q43: Worried about health in future	4	2
Weight concern	Q44: Worried about weight	4	3
Sexual interest (Male)	Q56: Interest in sex	1	2

EORTC QLQ-CR29: European organisation for research and treatment of cancer quality of life questionnaire for colorectal cancer patients

Table 3: Symptom scales of EORTC QLQ-CR29.

Symptom domain	EORTC QLQ-CR29 item numbers	Pre-assessment score	Post-assessment score
Urinary symptoms	Q31: Frequent urination (day)	2	1
	Q32: Frequent urination (night)	4	2
	Q33: Urinary incontinence	1	1
	Q34: Pain during urination	2	1
Gastrointestinal symptoms	Q35: Abdominal pain	1	1
	Q36: Buttock/anal/rectal pain	3	1
	Q37: Abdominal bloating	1	1
	Q38: Blood in stools	1	1
	Q39: Mucus in stools	2	1
Treatment-related symptoms	Q40: Dry mouth	1	1
	Q41: Hair loss	1	1
	Q42: Taste problems	2	1
Sexual function (male)	Q57: Difficulty with erection	1	1

EORTC QLQ-CR29: European organisation for research and treatment of cancer quality of life questionnaire for colorectal cancer patients

Table 4: Bowel Function scale of EORTC QLQ-CR29.

Symptom	EORTC QLQ-CR29 item numbers	Pre-assessment score	Post-assessment score
Gas/flatulence	Q49: Unintentional gas release	2	2
Stool leakage	Q50: Stool leakage	1	1
Skin problems	Q51: Sore skin around anal area	2	2
Frequent bowel movements (day)	Q52: Frequent daytime bowel movements	1	1
Frequent bowel movements (night)	Q53: Frequent nighttime bowel movements	1	1
Embarrassment	Q54: Embarrassed about bowel movements	1	1

EORTC QLQ-CR29: European organisation for research and treatment of cancer quality of life questionnaire for colorectal cancer patients

DISCUSSION

Yoga and naturopathy have emerged as valuable complementary therapies in cancer care, offering significant potential for symptom management and QoL enhancement. Therapeutic effects of yoga interventions stem from its ability to induce relaxation through mind-calming techniques, reduction of intrusive thoughts and promotion of meditative states.^[11] These mechanisms enable patients to better manage stress and achieve emotional equilibrium during their cancer journey.

The physiological benefits of yoga are well-documented, with evidence demonstrating positive impacts on cancer-specific symptoms and key biomarkers. Yoga practice influences stress-regulating hormones, enhances immune function and modulates inflammatory markers.^[12] Through regulation of the hypothalamic-pituitary-adrenal axis and enhancement of parasympathetic nervous system activity, yoga addresses both the physiological and psychological stress burdens associated with cancer diagnosis and treatment.^[13]

Complementing yoga practice, targeted nutritional interventions play a crucial role in optimising patient

outcomes. Plant-based dietary approaches, particularly those incorporating grape seed extract rich in proanthocyanidins, demonstrate promising anti-cancer properties. Research indicates that proanthocyanidins effectively inhibit azoxymethane-induced colonic aberrant crypt foci – recognised precursor lesions for colorectal cancer – while promoting apoptosis through interference with cancer cell survival pathways.^[14] The combination of yoga and strategic nutritional interventions creates a synergistic therapeutic effect. This integrative approach simultaneously targets systemic inflammation and tumour biology while promoting overall well-being, addressing cancer care from multiple physiological and psychological dimensions.

This case report demonstrates the tangible benefits of integrating yoga and naturopathy into conventional cancer treatment protocols. The patient exhibited substantial improvements in pain management and QoL, as objectively measured using the VAS and the EORTC QLQ-CR29 assessment tool. Beyond symptom relief, these therapies provided essential emotional support – a critical component

for patients navigating intensive treatments such as chemotherapy. The holistic nature of these interventions addresses the multifaceted challenges cancer patients face, extending beyond physical symptoms to encompass emotional resilience and psychological well-being.

While these findings are encouraging, several methodological limitations must be acknowledged. The single-case design inherently limits generalizability, compounded by the absence of a control group and the relatively short intervention duration. These constraints underscore the need for more robust research methodologies.

Future investigations should prioritise large-scale, randomised controlled trials with extended follow-up periods to establish definitive efficacy evidence for yoga and naturopathy in cancer care. In addition, mechanistic studies are essential to elucidate the specific biological pathways through which these interventions confer their therapeutic benefits.

Despite acknowledged limitations, this case highlights the significant potential of integrative approaches in cancer care. The combination of yoga and naturopathy with standard oncological treatments demonstrates promise for enhancing recovery trajectories, alleviating treatment-related symptoms and improving overall QoL.

Continued exploration and validation of these therapeutic modalities could facilitate the development of more comprehensive, patient-centred approaches in oncology. Such integrative care models recognise the importance of addressing not only the biological aspects of cancer but also the psychological, emotional and spiritual dimensions of healing, ultimately promoting more holistic patient outcomes.

CONCLUSION

This case report demonstrates the therapeutic potential of integrating yoga and naturopathy with conventional cancer treatment, showing measurable improvements in pain management and quality of life. Future randomized controlled trials with larger sample sizes and extended follow-up periods are essential to establish definitive evidence for these integrative interventions in comprehensive oncology practice.

Ethical approval: The Institutional Review Board approval is not required.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand

that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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