

Yoga for lower limb amputees following Trauma: A Case Report on an emerging therapy

Background:

Traumatic amputation is surgical removal of one or more body parts following trauma and many times it can be an auto-amputation resulting from the injury itself at the time of the accident. Amputation has been a very traumatic experience for patients ^{1,2} and others have equated the loss with the death of a spouse;³ followed by grief reactions along with anxiety and depressive symptoms and PTSD.^{4,5,6} Yoga is an ancient science and has been used extensively as a therapeutic tool since the early twentieth century. Researches on YOGA found it to be beneficial for patients with anxiety,⁸ Depression,⁷ PTSD ⁹ and for improved quality of life.^{10,11} The current case report is about the role of yoga therapy in a patient with traumatic bilateral lower limb amputation.

Case report:

Index patient M, 30 years old male, a driver by profession, married having three children with a monthly income of ten thousand INR. When while trying to board a moving train he fell down and his lower limbs got stuck between the moving train and platform. The accident resulted in the crush injury of the patient's both lower limbs.

The index patient was brought to the emergency department of JPNA Trauma Centre, AIIMS, New Delhi with autoamputation of both the limbs. His primary survey was within normal limits with Injury severity score (ISS) and New injury severity score (NISS) both measured 16. He had crush injury of both the lower limbs and chest abrasion injury. After Primary Survey as per ATLS protocol and adequate resuscitation he underwent bilateral above knee amputation. He was shifted to the surgical ward after 2 days. Psychologist met him on 2nd post operative day in ward and preliminary assessment with a mental status examination was done. He was depressed and was in extreme pain. He also reported phantom sensations and would sleep only for 1-2 hours in 24 hours with frequent crying spells and death wishes. Psychiatrist prescribed him Benzodiazepines.

He was also referred to in house YOGA therapist. Patient's first reaction to his referral for yoga therapy was not positive and was not expecting any help from the therapy sessions. He was reluctant to move his stump or other body parts and did not want to do any of the exercises with the pre-set notion that any movement may worsen his condition. He was agitated and depressed most of the time. Yoga sessions were started after educating him about the therapy, and its benefits on both physical and psychological improvement. Family members of the patient were also educated and counselled about the benefits of Yoga sessions in amputation patients, they were asked to encourage patient to practice yoga daily at least two times.

Initial yoga sessions were given bed side, and he was advised to practice same at least twice daily and each day at least one yoga session was supervised by the yoga therapist. A comfortable environment was created for the patient to do yoga practices with proper positioning and relaxed surroundings. By day 4 his complaints were almost double. He could not sleep for more than half an hour a day and used to be in extreme pain. He expressed death wishes and was depressed possibly in reaction to his realisation of his physical condition. Keeping his suicidal tendencies into consideration he was referred to the psychiatrist again and Tricyclic antidepressant was augmented with SSRI. Also for his complaints related to pain and phantom sensation, pain management team was contacted, who then advised medications and physiotherapy. In Yoga sessions he was given further psycho-education and benefits of yoga exercises, his misconceptions were dealt especially a belief that "he is injured and needs rest, exercise will worsen it".

On sixth day visit, he was more contented and more tolerant for pain with positive feelings. He reported doing exercises every day religiously and his quality of life seemed to improve. There was an acceptance of his current condition and body shape clear in his disclosure. He expressed his courage to move with the help of a wheelchair. He was more flexible with his movements and looking forward to positive healing. This session was delivered to him on the ground over the yoga mat. Patient was shifted from ward bed to a room designated for yoga

practices with the help of a wheel chair and assistance was taken from his relative for transferring the patient. He was discharged after a week of admission with stable condition and advise to practice stump management exercises along with yoga practices to be done daily at least twice daily. He was asked to follow up in amputation clinic every Monday which is a dedicated clinic for amputee management for wound inspection and yoga therapy. Patient was given yoga booklet so that he was able to practice all yoga postures with precision. He was also asked to maintain log of practices which he followed at home and weekly supervised yoga was done in the hospital set up for the duration of 18 weeks. The yoga exercises that were prescribed are listed in table 1 and table 2 shows an assessment of different psychological domains at baseline (pre), post assessment at 6 weeks and follow up at 18 weeks.

Table 1: List of Yoga Techniques prescribed for 18 weeks duration

Breathing Practices	1. Thoracic Breathing 2. Abdominal Breathing 3. Yoga Deep Breathing	Duration: 5 minutes each
Meditation	1. Breathing Meditation 2. Yoga Nidra	Duration: Ten minutes
Movements	1.Neck 2.Hand 3.Elbow 4.Wrist 5.Palm 6.Finger 7.Chest expansion	Duration: Five times each
Asana	1.Gomukh 2.Uttan Manduk 3.Kati Chakra 4.Urdhv Hasttotan 5.Ardh Kati Chakra 6.Pashchimottan 7.Bhujang 8.Nadi Shodhan 9.Bhastrika 10.Chandra Bhedan 12.Bhramari	Duration: Ten times each
Instant Relaxation Technique		Duration: Two minutes



Table 2: List of Psychological assessments at baseline, post and follow up

Scales	Baseline Assessment	Post Assessment (6 th week)	Follow up Assessment (18 th week)
WHO QOL BREF			
Physical	10	24	32
Psychological	09	18	22
Environmental	09	20	14
Social	03	09	31
Total	34	74	110
RSES	13	29	35
DASS			
Depression	20	11	07
Anxiety	14	05	05
Stress	22	12	08
Total	56	28	20
MINI	1. Major Depression symptoms 2. Substance abuse of Ganja (cannabis), naltrexone (opiods), diazepam (benzodiazepine), & cigarettes (nicotine)	He was in abstinence with all psychoactive substances	Smoking two cigarettes per day. He was in abstinence with all psychoactive substances.

Discussion:

Amputation is the medical procedure and needs close medical supervision for healthy healing and wellbeing. Amputation is a stressful situation for a patient and it checks on a patient's coping mechanisms. Patients are fighting for their physical rejuvenation and their psyche is hit by trauma and range of thoughts keep reeling their head from the dreams that seem tough to accomplish to the efforts they need to put into readjusting their new condition. Besides necessary medical treatment, regular physiotherapy sessions, & psychiatric and psychological help, patients need more to address their physical & psychological turmoil or trauma to start a

ray of hope that builds their inner self with courage and determination to withstand the ongoing crisis. Yoga has been practised since ages as a model of living a healthy life and maintaining inner peace and it helps patients with different medical conditions, directly or indirectly and streamlines the expectations with smooth living. While WHO defines health in terms of complete physical, mental, and social well-being and not merely the absence of disease or infirmity but has realised the importance of a fourth component (Spiritual health) in complete wellbeing.^{12,13} Yoga therapy serves as a catalyser for spiritual growth and inner peace.^{14,15} With the complete holistic therapeutic model Yoga therapy can improve physical, mental & spiritual health. Thus it should share a role in the treatment horizons particularly in patients with amputation. As a result, it can be stated that yoga is good to all aspects of health, including physical, mental, social, and spiritual well-being.

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