

## DOES ORTHOPAEDIC ISSUES INFLUENCE ON STROKE RECOVERY?

\*Dr. S. S. Subramanian, M.P.T (Orthopaedics), M.S (Education), M. Phil (Education), Ph.D (Physiotherapy)

The Principal, Sree Balaji College of Physiotherapy, Chennai – 100. Affiliated To (Bharath) University, Biher Chennai – 73.

Received date: 26 February 2020

Revised date: 16 March 2020

Accepted date: 06 April 2020

\*Corresponding author: Dr. S. S. Subramanian

The Principal, Sree Balaji College of Physiotherapy, Chennai – 100. Affiliated To (Bharath) University, Biher Chennai – 73.

### ABSTRACT

Stroke incidences and their treatment are widely recorded. The influence of orthopaedic issues and lack of follow-ups with major surgeries like arthroplasty affecting functional recovery under normal and post stroke remain unaddressed. This research aims to analyse various orthopaedic and neurologic causes for his negative prognosis for lack of functional recovery. 72 year old diabetic businessman of Chennai with THR in 2006 (Left) was ambulant with a quadraped, had a left side stroke in January 2018, getting treated with due medication and rehabilitation but even after 18 months with inadequate functional recovery, necessitates to analyse with evidence as done in this presentation. Outcome of this research analysis insists on regular post operative follow up in arthroplastic surgeries including physiotherapy for enhanced QOL of affected subjects.

**KEYWORDS:** THR – Total Hip Replacement, QOL – Quality of Life, Stroke, hemiparesis, ADL – Activities of Daily Living.

### INTRODUCTION

1. Stroke is a major cause of death and long term disability and the incidence rate increases above 60 years (Fligin et al 2003). THR (Total Hip Replacement) are performed annually 1 million world wide and is offered to older patients more often.
2. Researches have recorded post THR to have stroke incidence in 1 year at 1.5% (Rock Vile et al 2009). Negative prognosis post stroke were less analysed scientifically, this research strives to get an insight of stroke prognosis including orthopaedic surgical procedures (THR).

**Aims & Objectives** of this original was to analyse various factors influencing this research subjects negative post stroke recovery.

### MATERIALS AND METHODOLOGY

72 year old diabetic (Left), THR in 2006, with dementia, developed tempera parietal infarct resulting in left hemiparesis in January 2018, he was treated elsewhere in Chennai with electrical stimulation, suspension therapy, orthotic support to left knee and walking aids till September 2018.

He was treated from 4<sup>th</sup> October 2018 till 3<sup>rd</sup> October 2019, by the author with Proprioceptive exercises, concepts of motor relearning programme, manual therapy to left shoulder, passive ambulation with each session lasting from 20-30 minutes based on subjects exercise tolerance and emotional levels with weekly thrice frequency.

As he has shown partial recovery in terms of ambulation, ADL, persisting pain over left upper extremity this original research strives to analyse various factors influencing his lack of adequate post stroke prognosis.

### H/O

Hip – THR - 2006, developed and left hemiparesis in January 2018 and getting treated with electrical stimulation to left quadriceps, dorsiflexors, suspension therapy in Chennai based premier hospital from January 2018 to September 2018, NMRI – Revealed Cortical atrophy, infarcts in parieto temporal cortex.

His physical condition as on 04. 10.2018

1. Dependant for bed transfer
2. Sitting balance – good
3. Wasting of quadriceps, gluteus maximums (Left)
4. Obliterated lumbar lordosis

5. Motor control of left side poor
6. UE anteverted, flexor tightness of elbow, wrist (Left)
7. Shoulder movements painful with Capsulitis of shoulder (Left)
8. Balance in standing – with support
9. Ambulation – passive by external human support
10. Mesomorph

#### Provisional Diagnosis

Left hemiparesis, THR (Left Hip).

#### Clinical Prognosis & Results

Pain at rest and activities of left upper extremity on <b>04.10.2018</b> VAS - 08/10	<b>3<sup>rd</sup> October 2019</b> VAS - 06/10
Bed transfer needs support partially	Condition Continues
Barthel Index	
Joint ROM of left hip, knee end ranges painful Upper extremities painful for shoulder, elbow movements	Lacks self motivation and efforts
Shoulder abdomen – 30, extension, lateral rotation painful and restricted has elbow flexor and supinator tightness.	Condition remains the same as pain tolerance and cooperation was less
Motor control of left hand very good with prehension and precision	Unwilling to captivate for ADL
Assisted ambulation was tired, but he prefers to be in wheel chair and within house.	

#### Critical Analysis Which Can Influence Prognosis of this Research Subject

- I) Lack of cooperation by the patient?
- II) Inadequate physiotherapy with undue techniques, as no clinical guidelines, follow up post THR?
- III) Dementia has a role in prognosis and parieto temporal infarcts on clinical guidelines?
- IV) Follow up post total hip replacement is it required?
- V) Does pre existing musculoskeletal conditions, II post operative status influence on recovery pattern in stroke?

#### DISCUSSION

1. Bath et al 2000 recorded dysphasia affects 35% of stroke patients, with poor outcome as it predisposes for aspiration and pneumonia. **Having left hemiparesis, an uncooperative, irritant and lack of motivation as found on this subject were evidenced as above research recordings**
2. **Its note worthy that this study subject had dementia, under medication prior to stroke.**
  - Left hemiparesis with attention, communication disorders who are apathetic, irritant, are tagged as uncooperative (Stroke Therapy Revolution 2017).
3. Stroke survivors who have dementia before or after a stroke have a significantly greater risk for stroke related death (Barba AHA 2002). 324 stroke subjects with stroke in Madrid Hospital from 1994-1995, had pre stroke dementia in 49 patients, and 3 months after the stroke 75 cases of post stroke dementia was recorded using informant questionnaire on cognitive decline in the early (IQOCD)
4. When stroke affects temporal lobe (Caswell et al 2017 stroke connection) difficulty in recognising common sounds, depth perception, comprehending speech, accessing old memories, personality changes, emotions and behaviour, communication were affected.

➤ When stroke affects the lobe, proprioception, sensory information including (Spatial Neglect) difficulty in light touch, temperature, executive functions, emotional disturbances and depression (AHA, Stroke Connection Caswell 2018). **This research subject's poor diagnosis could be added to above mentioned findings as he had infarcts of temporoparietal region.**

5. Stroke in patients undergoing THR, Lal Mohammed et al 2012 have among (1998-2007) with 66, 583 Danish subjects who have undergone TKR, THR have recorded 4.7 fold increased. Risk of ischemic stroke and a 4.4 increased risk for haemorrhage stroke in first 2 weeks, the risk remain elevated for 6 post operative week in ischemic stroke and 12 weeks for haemorrhagic stroke. Where antiplatelet drugs lowered the risk of ischemic stroke by 70% (Lal Mohammed et al 2012). **This research subject having had THR of left hip, develops hemiparesis of left side after 12 years post THR, but residual muscle atrophy, pain, restricted ROM were a hindrance for rehabilitation along with an added risk factor.**

#### Key Outcome of this Presentation

1. Post arthroplasties require regular physiotherapy follow up
2. Poor prognosis among post stroke various factors involved to be analysed with evidence
3. Coexisting factors such as dementia, cortical atrophy, psychological traits, diabetes mellitus, socioeconomic status to be analysed during rehabilitation.

#### CONCLUSION

Arthroplastic surgeries needs follow up with due medial and rehabilitation means a major purpose of this presentation. Also this research analyse various factors involved and influencing in stroke rehabilitation.

**REFERENCES**

1. Feigin, V. L., Lawes, C. M. M., Bennett, D. A., and Anderson, C. S. Stroke epidemiology: a review of populationbased studies of incidence, prevalence, and casefatality in the late 20<sup>th</sup> century. *Lancet Neurology*, 2003; 2: 43-53.
2. Rockville, MD: Research AFH, Quality. Healthcare Cost and Utilization Project 2009. Agency for Healthcare Research and Quality, 2009.
3. Bath P M, Bath F J, Smithard D G. Interventions for dysphagia in acute stroke. *Cochrane Library*. Issue 2. Oxford: Update Software, 2000.
4. Stroke Therapy Revolution 2017. When a Patient Does Not Cooperate After a Stroke. <https://stroke-therapy-revolution.com> > patient-not-cooperate-stroke.
5. Barba, MD, PhD; Maria-del-Mar Morin, MD; Carlos Cemillán, MD; Carlos Delgado, PhD; Julio Domingo, MD; Teodoro Del Ser, MD, PhD. Previous and Incident Dementia as Risk Factors for Mortality in Stroke Patients. **August 2002 - Volume 33, Issue 8**. Stroke is available at <http://www.strokeaha.org>. PP: 1993-1998.
6. Caswell. The temporal lobe has several functions, mainly involved with memory, perception and language. When Stroke Affects the Temporal Lobe. Stroke Connection, 2017.
7. Caswell. The frontal lobe is full of dopamine-sensitive neurons, and they're involved in many tasks like reward, attention, short-term memory, planning and motivation. When Stroke Affects the Frontal Lobe. When Stroke Affects the Temporal Lobe. Stroke Connection, 2018.
8. Lal BK, Beach KW, Roubin GS, et al. CREST Investigators Restenosis after carotid artery stenting and endarterectomy: a secondary analysis of CREST, a randomised controlled trial. *Lancet Neurol*, 2012; 11(9): 755–763.