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ENT HEAD AND NECK PROBLEMS AT REFERRAL REHABILITATION CENTER OF SHREE BIRENDRA HOSPITAL

ABSTRACT

Objectives:

The objective of this study was to find out the burden of ENT-HNS problem of differently abled patients at a residential physical rehabilitation center in Nepal. Though people at a residential physical rehabilitation center have many medical problems alike general population, they are known to less emphasize them since the problems related to their primal condition, spinal cord injury (SCI), overshadows others.

Materials and methods:

This retrospective cross-sectional study was conducted at the department of Ear Nose Throat- Head and Neck Surgery, Shree Birendra Hospital. Recorded data were reviewed of clinical examination findings, pure tone audiometry, and speech and language evaluation of 22 residential differently abled patients and were analysed.

Results:

There were total 22 male patients with the mean age of 42 years (ranged 26 -74). Majority had spinal cord injury. Deviated nasal septum was the commonest ENT-HNS finding followed by hearing loss. Five of them (22.72%) had speech and language disorder.

Conclusions:

Patients of physical rehabilitation center have ENT-HNS related problems like DNS, hearing loss, speech and language disorders. However, these problems take less precedence compared to their primary and its associated conditions. Comprehensive check-up and treatment of ENT-HNS problems can contribute to enhance patients' quality of life.

Keywords: ENT-HNS problems, Physical rehabilitation center, Spinal cord injury

INTRODUCTION

Rehabilitation is secondary intervention to restore patients as far as possible to their previous condition after disease or injury (within the limits imposed by pathology and impairments), to develop to the maximum extent their (residual) physical, mental and social functioning, and where appropriate, to return them to (modified) work.[1] Primary task of rehabilitation center is to rehabilitate them to live a dignified life and get reintegrated into the society at the earliest. Though patients at a residential physical rehabilitation center have many medical problems alike general population. These symptoms are less emphasized since the problem related to their primal condition (Spinal cord injury (SCI), stroke, head injury transverse myelitis and cerebellar ataxia) overshadows others. Secondary medical conditions like neuropathic pain, spasm, urinary tract infections, bowel and bladder regulation takes the priority in SCI patients.[2] They have limited mobility, develop pressure sore, obesity, mood swing, hypertension and diabetes as associated conditions. Other health problems secondary to SCI include problems of daily living, such as handicap management, extra time needed for body care, bowel and bladder regulation and transportation, as well as psychosocial problems such as sexuality and sadness. [3–5]

In Nepal, there are a few physical rehabilitation centers which are established with the intention to rehabilitate physically disabled patients. One of the residential centers at Bhandarkhal, Kathmandu was established in 12 October 2004. For the residential patients of this center, personal attendants are available to assist them in daily activities. The in-house medical team consists of physiotherapist, prosthotics and orthotics, and a nurse. For treatment beyond rehabilitative care

(neuromedicine, nephrology, endocrinology, internal medicine, surgery and orthopedic), the patients are referred to a tertiary medical hospital. Aim of this study was to find out Ear Nose Throat and Head - Neck Surgery (ENT-HNS) problems of patients of this rehabilitation center by analysing patient records at the referral hospital.

MATERIALS AND METHODS

This retrospective cross-sectional study was conducted at the department of ENT-Head and Neck Surgery (HNS), Shree Birendra Hospital (SBH). Ethical clearance was received from Institutional Review Committee of Nepalese Army Institute of Health Sciences (ethical clearance number 456). Patients records of all the 22 residential patients were obtained and included in this study. Data was collected from the medical records. Records of clinical examination findings, Pure Tone Audiometry and patients' speech evaluation performed by speech pathologist was also noted. Data was entered into Microsoft Excel for analysis.

RESULTS

There were 22 adults aged 26 to 74 with the mean age of 42 years (Figure 1). They have been residing at this center for 1 to 15 years with the mean stay of 8.57 years. All were male, out of which 18 had traumatic SCI, 3 had medical conditions (extensive transverse myelitis, cerebrovascular accident with progressive cerebellar ataxia and sequelae of tubercular meningitis) and one had head injury with bilateral subdural hematoma (Table 1). Among the associated medical conditions, pressure sore was most common (Table 2). Deviated nasal septum (DNS) was most frequent ENT-HNS finding among these patients (Table 3).

Table 1. Physical disability and disease condition (n = 22)

Condition	Quadri-plegia	Para-plegia	Hemiparesis
SCI	7	11	
Head Injury	0		1
Medical	1	1	1
Total	8	12	2

Table 2. Associated medical conditions (n=22)

Condition	Number of patients	Percentage
Pressure sore	18	81.81
Frequent UTI	7	31.81
Hypotension	1	4.54
HTN	6	27.27
Hypothyroidism	2	9.00
Gout	1	4.54

Table 3. ENT- Head & Neck Surgery related conditions (n=22)

Conditions	Number of patients	Percentage
Deviated nasal septum	17	77.27
Allergic rhinitis	5	22.72
Sequelae of otitis media	2	9.00
COM mucosal	1	4.50
Elongated uvula	1	4.50
Laryngopharyngeal reflux	3	13.6
Granular pharyngitis	2	9.00
Myringitis	1	4.50
Wax	2	9.00
Tinnitus	1	4.50

Out of 22 patients, PTA record of 21 were present (Table 4). PTA record of a head injury patient with aphasia was not available. Eighteen patients had normal hearing, out of them 12 had high frequency loss at more than 2 kHz. It could be occupation related. A 74 year paraplegic patient with right Chronic Otitis Media (COM) mucosal inactive was recorded to have severe mixed hearing loss in right ear and moderate sensory neural hearing Loss (SNHL) in left ear. Another 61 year quadriplegic patient had bilateral mild SNHL. A 51year old patient had mild conductive hearing loss (CHL) due to eustachian tube dysfunction was asymptomatic.

Among the problems with speech and language pathology (Table 5), two of them had dysarthria related to their primary medical conditions, one had global aphasia post head injury and other two patients of SCI had neurogenic stuttering. Speech therapy was provided twice a week to these patients. The improvement started to be apparent after the fourth session of speech therapy. There was marked improvement in these patients after six session of speech therapy. Patients of cerebrovascular accident, cerebral ataxia and

sequelae of tubercular meningitis appeared to improve sooner.

Table 4. PTA finding of patients (n=21)

Hearing	PTA finding	Number of patients
Normal hearing	No slope	6
	Slope at ≥ 2KHz	8
	Notch at 4 KHz	3
	Slope at 6 KHz	1
Hearing loss	MHL	1
	CHL	1
	SNHL	1

Table 5. Speech related problems (n=22)

Diagnosis	Number of patients	Percentage
Dysarthria	2	
Global Aphasia	1	
Neurogenic stuttering	2	22.72%
Total	5	

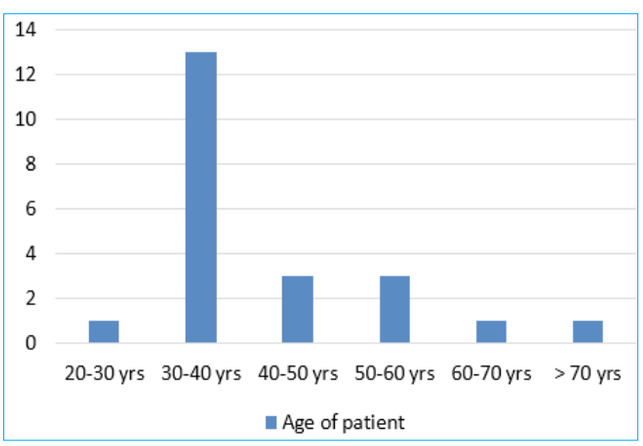

Figure 1. Age distribution of the patients (n=22)

DISCUSSION

Patients with SCI, stroke, head injury, transverse myelitis, post meningitis sequelae, cerebellar ataxia etc. are referred to rehabilitation center to restore physical, mental and social functioning. They also have ENT- HNS related problems which are less emphasized as their primary symptoms like neuropathic pain, spasm, bowel and bladder symptoms overshadows them. Bloemen et al.[2] noted that patients with SCI were constantly bothered by the pain, spasm, bowel and bladder symptoms. It was also noted that due to the long term urinary catheter, they had developed kidney dysfunction. Their dependency on personal care giver for daily eating, bathing, movement from one place to other, transfer, changing position in bed, stool evacuation, changing urinary catheter and diapers made them feel externally controlled.[2] Probably these concerns were occupying their minds and they hardly paid attention to other problems like ENT-HNS issues. In our study, DNS was found in 77.27 % patients. However, they were asymptomatic. Similarly, there were no records of complaints about difficulty in hearing in noisy environment despite PTA record of 12 patients (54.54%) had high frequency slope at more than 2 kHz. The high frequency hearing loss was observed even in patients with CHL. In a patient of COM mucosal with MHL, the patient's complaint of hearing loss was not present in the record. Tinnitus and itching was recorded in a patient with SNHL.

Allergic rhinitis was observed in 22.72% patients. This finding suggests that differently abled patients in a residential physical rehabilitation center are preoccupied with their main disabling condition and its associated problems rather than issues related to ENT-HNS and others. However, their quality of life can be made better with routine comprehensive examination and addressing the identified problems such as speech therapy for speech and language disorders. In a survey at the Netherlands of 454 persons with SCI living in the community, the most frequently occurring problems were limitations in daily activities and social life due to bladder and bowel regulation, spasms, pain, oedema and sexuality. The most disabling condition for both daily and social activities was pain. The occurrence of these problems did not diminish with increasing time after injury. This strongly emphasized the need for follow-up care.[2]

In our study, though the patients were known to receive regular maintenance physiotherapy, their disability was not observed to diminish discerningly. Apparent and fairly quick improvements due to speech therapy could bring positivity in life and encourage them to cooperate in their rehabilitative regime. Vasaghi-Gharamaleki B and Naser Z [6] concluded that people with SCI with painful left lateral rotation had high prevalence of hearing loss. In our study, there were no records of patients with painful left lateral rotation. The

patients were examined after many years of SCI and that could have led to unrestricted painless left lateral movement.

Ozturk et al.[7] in 2004 concluded that most abnormalities and disorders of cervical spine can cause abnormal alignment of the vertebrae, especially the upper, and damage or put pressure on vertebral / basilar arteries. The vertebrobasilar artery ischemia, especially the occlusion of anterior inferior cerebellar artery or one of its branches, regardless of the age, can cause bilateral hearing loss.[1] In contrast, none of our patients had records of having vertigo. Vasaghi et al.[6] in a cross sectional study with 42 volunteers with upper cervical spine (C2 level) injury like osteoarthritis, rheumatoid arthritis, and disc prolapse, inferred pain and limitation of range of left rotation movement in men had significant correlation of hearing loss. Their study had 40.48% left rotation limitation and 53% had bilateral hearing loss. In contrast, our patients' records did not reveal pain or limited range of left lateral rotation movement. Our patients were noted to visit ENT-HNS OPD only at a chronic stage of SCI and this could have been a reason. In our study, quadriplegic patients had generally C5-6 lesion in contrast to high level injury (C2 level) in another study. [6]

There was record of five patients with speech disorder in our study: two dysarthria, two neurogenic stuttering and a global aphasia. All of them were provided speech therapy. Brady et al.[8] noted significant benefits in functional communication in reading, writing, and expressive language after speech therapy in patients with stroke. In our study, patients with dysarthria had improved speech after four sessions of speech therapy. One patient with global aphasia was noted not to show language improvement even after 15 sessions of speech therapy. It could have been the cause for discontinuation of speech therapy. In a study on post-stroke aphasia patients by Gerstenecker et al.[9] language recovery of patient with global aphasia was seen to spontaneously improve within 3 months of injury/ stroke. Pedersen et al. [10] upon assessing 270 patients after one year of acute stroke found majority of language recovery occurred within two weeks for patients with mild aphasia, within six weeks for patients with moderate aphasia, and within ten weeks for patients with severe aphasia. Up to two years post injury, speech therapy is considered beneficial to improve language and speech and after 2 years of injury, improvement is considered less likely.

In our study, patient of global aphasia who had head injury and bilateral subdural hematoma seven years back did not improve even after twice a week intensive speech therapy for 15 sessions. Initiation of speech therapy after more than 2 years of injury was probably the reason for non-improvement in language, and the speech therapy was discontinued. The duration of speech therapy was less than 10 weeks in contrast to Gerstenecker et al.[9] Speech therapy could have been continued further with the hope of making some improvement though the therapy was started many years after the primary injury.

Out of two patients who had neurogenic stuttering, both had SCI, one quadriplegic and another paraplegic. Probably anxiety and the psychological cause secondary to the injury may have attributed to the development of stuttering. The stuttering was not recorded in their past history. It could be that young patient with SCI have psychological reason to develop such speech problems. Our patients with stuttering were between 26 and 33 years old. Further studies can be conducted to identify other psychological problems in such patients.

Dysarthria present in two patients had medical conditions as the primary cause of speech problem. It could be concluded that medical conditions give rise to dysarthria, SCI leads to neurogenic stuttering and severe head injury causes global aphasia. Early speech therapy is required to achieve the language improvement in global aphasia, whereas in other conditions, obvious improvement in speech was apparent with a few (as low as four) speech therapy sessions. The study suggests that patients' comprehensive medical check-up is necessary to provide a holistic care.

Limitation of our study is that it comprises of small sample size. Patients are comprised of mixed group. Not all of them had SCI. It was a pilot study on ENT-HNS problems of long term physical rehabilitation patients in Nepal. A multicenter study can be conducted with more and varied patients with different types of primary condition like SCI, neuromedical condition, head injury, etc. Patients with acute phase of SCI admitted for a short intensive care might provide an alternative to conduct a study on ENT-HNS

problems to reveal more signs and symptoms like vertigo, hearing loss, tinnitus, etc.

CONCLUSIONS

It was found that the patients of physical rehabilitation center have ENT-HNS related problems like DNS, hearing loss, speech and language disorders. However, treatment of these problems take less precedence compared to their primary and its associated conditions. Comprehensive check-up and treatment of ENT-HNS problems can contribute to enhance patients' quality of life.

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