A BRIEF STUDY OF NEAR HANGING CASES IN A RURAL MEDICAL INSTITUTE OF CENTRAL UTTAR PRADESH

Neha Singh¹, Richa Choudhury²

¹Senior Resident, Department of Forensic Medicine & Toxicology, RIMS, N. R. Saifai, Etawah.
²Associate Professor, Department of Forensic Medicine & Toxicology, RIMS, N. R. Saifai, Etawah.

ABSTRACT
India has the highest number of suicides in a year in the world (17.5%). The suicide rate in India has increased significantly in the recent years rising to 10.3 per 100000 persons. According to the WHO report (2012), suicide rates show a peak among the young and the elderly involving 1,58,098 men and 99,977 women. In this paper we are reporting three cases of failed suicidal hanging which presented to the emergency department of Rural Institute of Medical Sciences and Research, Saifai, but they were brought to the hospital at an early stage and got the primary management and ventilatory support, they survived recovered completely. Thus to conclude we would say that early and timely intervention by appropriate and aggressive management of the near hanging cases can be lifesaving.

KEYWORDS
Suicide, Near Hanging, Ventilatory Support, Aggressive Management.

INTRODUCTION
The term suicide is the act or instance of intentionally killing oneself. Unfortunately our country India has the highest number of suicides in a year in the world (17.5%). The suicide rate in India has increased significantly in the recent years rising to 10.3 per 100000 persons.¹ According to the WHO report (2012), suicide rates show a peak among the young and the elderly involving 1,58,098 men and 99,977 women. Pesticide poisoning, Hanging and Firearms are among the most common methods of suicide globally.² Among these hanging and firearms are the commonly employed methods in males and has a high mortality rate while intentional insecticide ingestion is a method of choice for committing suicide among females. Near hanging is a term used to refer to patients who survive a hanging injury long enough to reach hospital, irrespective of its manner, whether it is accidental or suicidal.

In this paper we are reporting three cases of failed suicidal hanging which presented to the emergency department of Rural Institute of Medical Sciences and Research, Saifai, Etawah in the month of September 2015 in a very critical clinical condition. All of them required immediate intubation, resuscitation and intensive care treatment. Fortunately none of them had suffered from cervical spine injury. In two cases MRI brain showed slight hypoxic ischemic damage. All the three patients were initially stabilized in the emergency and then shifted to ICU where they were closely monitored for two weeks. They were finally shifted to the neurology department where they also received psychiatric counselling and treatment.

CASE REPORTS
CASE 1
A 30 years old married male labourer attempted suicide by hanging by using his wife’s sari as a ligature. He came at night after heavy drinking and had a heated altercation with his wife which acted as the triggering factor for the drastic step taken by him. As per his wife’s statement, the other side of the ligature was fixed to the ceiling fan knob and his feet were touching the ground thus leading to partial hanging. It took approximately 10-minutes for the family members to rescue him. He was initially taken to a nearby private hospital where his tracheostomy was done.

He was brought to our emergency department after a delay of three hours. External examination showed an incomplete ligature mark of 1.5 cm width. None of the other accompanying injury pointing towards defensive wounds was observed. On arrival he was unconscious and his Glasgow coma scale (GCS) score was 5. His respiratory rate (RR) was 35/min, arterial oxygen saturation (SPO₂) on room air 50%, pupils were dilated bilaterally and reacting sluggish to light and rest his vitals were within normal limit. There was no sub-conjunctival haemorrhage. Bilateral crepitations were present on chest auscultation. He was kept on ventilator for 10 days and gradually weaned off assisted ventilation and tracheostomy closure was done on the 20th day. Chest and cervical spine X-rays were performed and were within normal limits. MRI scan of Head and neck showed subacute non-haemorrhagic Left Temporal, occipitotemporal and right cerebellar infarcts. MRI cervical spine was normal.

All biochemical, haematological investigations were reported as normal. He was given intravenous methylprednisolone, antibiotics and neuroprotective drugs. Patient received DVT prophylaxis, bowel bladder and back care, passive limb physiotherapy and enteral feeding with naso-gastric tube.
After three months his clinical condition improved and he was able to walk with support, though significant ante grade amnesia was noted.

CASE 2
A 28 years old male, farmer by occupation, married, known alcoholic was found hanging from tree in his field with a sari. The feet were not touching the ground. A passer-by rescued him after approximately five minutes and informed his family members. The instigating factor for his suicide attempt may be attributed to alcohol induced depression.

He was brought to our emergency department within two hours. On external examination, an incomplete ligure mark 0.6 cm wide, marked in front of the thyroid cartilage was seen. On arrival he was unconscious and Glasgow coma scale (GCS) score was 3. On 2nd day he developed respiratory distress and was intubated and put on ventilator. Later tracheotomy was done and he was weaned off from ventilator after 15 days in the ICU and tracheotomy was closed after one month.

Chest and cervical spine X-rays, including MRI brain and cervical spine were normal. After one and half month he was discharged without any neurological deficit.

CASE 3
An 18 years old male was found hanging from a big neem tree in an open field. His legs were not touching the ground. He was rescued by his brother after 7 minutes. There was frothing from angle of mouth along with tonic-clonic seizures.

He was brought to our emergency department after five hours. External examination showed a ligure mark which was, incomplete. On arrival he was unconscious and had Glasgow coma scale (GCS) score of 3. He was hemodynamically stable with oxygen saturation of 60%. Scattered coarse crepitations were present. He was put on oxygen, antiepileptics and antibiotics. MRI brain showed extensive area of restricted diffusion involving cortical and subcortical areas of both hemispheres suggesting hypoxic ischemic encephalopathy.

DISCUSSION
Hanging is one of the commonest methods of violent asphyxial deaths. Hanging by any means whether suicidal, accidental or homicidal is mostly fatal in 70% of the cases. Injury in hanging mainly arises through pressure on the neck veins and arteries. Compression of the airway is less common and cervical spine injuries are quite rare. Laryngeal injuries like thyroid cartilage and hyoid bone fractures are seen less often. The external compression causes venous cerebral congestion, hypoxic circulation, reduced arterial cerebral supply and may succumb due to severity of hypoxic and ischemic brain injury. Hypoxic ischemic encephalopathy is a common complication which might lead to delayed deaths in such patients. Delayed deaths could also occur as a result of aspiration pneumonia, pulmonary and laryngeal edema.

Time duration of hanging is closely associated with mortality. The extension of the hanging period increases brain damage by increasing the duration and degree of anoxia and it also increases the likelihood of injury to the neck structures. It has been shown that there is less mortality if period of hanging is less than 5 minute which is the critical threshold for hanging. However, mortality was increasing very significantly in cases hanging period was over 30 min. In our research work all the cases had hanging time of less than 8 minutes.

Survival without neurological damage is possible after attempted suicide involving near hanging. Initial neurological assessment is a very poor guide to final outcome (including fixed, dilated pupils). According to a survey in 2012, about 46,000 suicides occurred in India, mainly in 15-45 years age groups accounting to 34% of all suicides. In our study one case was in the age group of 15-29 years and two were in the age group of 30-44 years. On an average, male suicide rate is twice that of females in India. In our study all the cases encountered were males.

Family problems and illness were the two major reasons for suicides, together accounting for 46% of all suicides. Drug abuse or addiction (3.3%), love affairs (3.2%), or sudden change in economic status (2.0%), poverty (1.9%) and dowry dispute (1.6%) were the other causes of suicides. In our study we observed that the cause of attempted suicide was a family issue in one, alcohol induced depression in another and poor academic performance in the other who was a young student. Penny et al. pointed out that low GCS at arrival presence of cardiac arrest initially was associated with poor prognosis.

In other studies done, it was found that there was a significant association between systolic blood pressure<90 mm Hg and mortality. Survival in hanging depends primarily upon force applied for compression of neck and point of suspension (around the neck), drop force, complete or partial suspension and intervention time of releasing the compression around neck. Superimposed intoxication with drugs or alcohol along with extremes of age and associated chronic cardiac or respiratory diseases negatively affect the prognosis in cases of attempted suicide via hanging. Incomplete encirclement of neck by ligature and partial hanging was also attributed for minimizing the hypoxic-ischemic damage to the brain.

Our patients though having low GCS and MRI showing hypoxic brain change were brought to hospital at an early stage and got the primary management and ventilator support, leading to their complete recovery. Thus to conclude we would say that early and timely intervention by appropriate and aggressive management of the near hanging cases can be lifesaving.

ACKNOWLEDGEMENT
The authors are thankful to fellow colleagues and other staff of department of Forensic medicine and Toxicology, Medical Superintendent, Casualty Department, Neurology department and Psychiatry Department of UP RIMS & R Saifai for their support.

REFERENCES
1. V. Patel, Chinthanie R, Suicide mortality in India-A nationally representatives survey, the lancet Vol379, June 2012.
2. Timesofindia.indiatimes.com/india/India has highest no. of suicides, WHO, Sept. 4, 2014.