The neuropsychology of hanging: an historical perspective

Medalia, Merriam and Ehrenreich reported that a number of cases of attempted hanging resulted from isolated memory defects. Their report is one of particular interest, as hanging is still one of the most common methods of committing suicide. How death occurs during hanging and how, when and why the brain’s activity is altered by strangulation, has been the subject of much debate. Medalia et al. ignore this literature, and instead incorrectly emphasize in the first section of their abridgement the relevance of the neuropsychological sequelae of attempted hanging existing in the English literature.

In 1983 a report by Mengech described “Strangulation as a cause of Korsakoff psychosis”. Other English-language reports on the neuropsychological consequences of attempted hanging stem from Whiteley and Sagar.

Furthermore, there is a considerable amount of early German-language literature on the neurological and neuropsychological consequences of unsuccessful attempts at hanging. Already in 1896 Boedeker described attempted hanging as usually resulting in retrograde amnesia. Two of the detailed reports of such cases were given by Wagner in Southeastern Austria. In his article from 1889 he referred to 17 previous cases which had been described in the years between 1826-87. Wagner also mentioned Leidesdorf, who had given examples of cases related to hanging. Leidesdorf listed the German acceptance of hanging as an act of suicide, and his list of cases provided evidence that the mechanism involved in hanging was the same as in other forms of suicide. The case of a 20-year-old woman who committed suicide by hanging was described as a “case of amnesia”. Upon examination, the patient was found to have died as a result of strangulation. The cause of death was ascribed to the combination of amnesia and respiratory arrest. The patient had also complained of loss of memory and had been heard saying “I have lost my memory”.

Another important case is Wagner’s publication of Pick’s work, which described the condition of amnesia occurring after accidental or deliberate hanging. The term Pick’s disease was first used by Pick in 1892 to describe a case of amnesia occurring after a head injury. Pick’s work was followed by a number of other cases reported by Pick and others, and the condition came to be known as “Pick’s disease”.

A neurologist working in a hospital in the United States, Markowitsch, reported a 23-year-old woman who had attempted suicide by hanging. The patient was a second-year medical student who had been admitted to the hospital with a history of depression and a previous suicide attempt. The patient had attempted hanging in his home, but was unsuccessful. The patient had made a second attempt by hanging himself during his admission to hospital, which resulted in profound retrograde amnesia. At the time of Wagner and Wollenberg there was still a serious discussion on whether retrograde amnesia was organic or psychogenic, and this was reviewed by Schneider.

The question was also central to Sommer’s report on “the amnesic disturbances after attempts at hanging”. On the basis of his two cases he confirmed the observation of other scientists that following strangulation there is a retrograde amnesia for a few days and usually also an anterograde one for one or two days. In the ensuing debate over the views of Möbius that (amnesia following strangulation of head) and Wagner (that it is organic), Sommer was strongly inclined to follow Wagner’s opinion, and also Meyer considered Wagner’s view the most plausible one. Sommer assumed that complete blockage of the carotids and the interruption of the venous discharge resulted in temporary but still severe nutritional disturbance of the nervous system, and that the symptoms could be attributed to the more severe disturbances of metabolism, but without damaging them permanently. The controversial views of Möbius were published in 1922.

Meyer compiled a large number of psychological and neurological tests to determine the status of his patient. This 24-year-old man attempted to hang himself and was found and rescued early in the morning. His memory was preserved, and he remembered how to salute, whereas his epiphenomenal memory was damaged. Meyer compared the patient’s behaviour over several days, asking daily the same questions and tabulating the respective answers. He concluded that the patient’s behaviour is best described as Korsakoff’s syndrome, and that strangulation will typically result in Korsakoff’s symptoms.

Frenkel in 1911 reported the case of a 20-year-old woman who attempted hanging by strangulation. However, the patient was not examined until after the event, and the patient was considered to have psychiatric symptoms. Frenkel’s study was the first to include a detailed examination of the consequences of hanging on the anatomy of the brain. They based their investigation on the investigation of three out of 20 brains from cases who died after hanging. It is interesting that, in one of the cases with hypoxic or anoxic brain damage, the hippocampal formation was consistently affected. The subicular cortex and Ammon’s horn especially, showed degenerated neurons. Other areas of cell damage were in the caudal, the pallium, and the thalamus. It cannot be determined, however, if the damage was primarily caused by the reduced oxygen consumption, or by convulsions which may occur during hanging.

Together, these early examples may show that there has been a wide discussion of the neurological and neuropsychological sequelae of hanging during the past 100 years and both the mechanisms and brain centres discussed by Medalia et al. as acting critically on or affecting cognition, had already been similarly debated by earlier authors.

HANS J MARKOWITSCH
Department of Neuropsychology
University of Bielefeld, 100 131, D-8400, Bielefeld, Germany.

4 Stengel E. Suicide and attempted suicide. Handbook of Psychiatry, 1912.

A neurological audit in Vitoria, Spain

In response to your invitation we are sending this brief account of a neurological outpatient audit held in Vitoria, Spain. This is a health district with a population of 300 000 served by two neurology units based in two hospitals, totalling eight neurologists (one neurol- o gist per 37 500 population). The data are based on the 987 new patients seen in 1989 by the three neurologists in one of the hospitals.

The objectives of our audit were somewhat different from one of the psychiatric audits reported in your journal, reflecting the different systems they study. In Spain there are proportionally more neurologists than in the UK and general practitioners tend to refer all patients to the neurologists. This means that specialists work in areas that they suspect to be neurological. This results in the number of referrals being too large to be seen in hospital, so that two types of neurologist are evolving: those working in primary care.