The neuropsychology of hanging: an historical perspective

Medalia, Merriam and Ehrenreich reported the neuropsychology of hanging and consequent isolated memory defects. Their report is particularly interesting, 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 emphasise in the first sentence of their argument, the importance of the neuropsychological sequelae of attempted hanging exists in the English literature.

In 1963 a report by Mengelkamp described “Strangulation as a cause of Korsakoff psychosis”. Other English-language reports on the neuropsychological consequences of attempted hanging stem from Whiteley and Stiegel.

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 first 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 for example wrote: “The roof of which the Siberian Shaman allows to be laid around his throat, until, shortly before choking, he goes into ecstases, etc.”

Of principal importance are Wagner’s publications and a related report of Pick (which is cited in Wagner) as both emphasised the time point of the onset of retrograde amnesia before hanging.

Wagner noted that attempted hanging usually resulted in severe memory disturbances which he characterised as “dementia acuta”, but that these amnesic states were usually only temporary; in a few cases he noted that the reverse pattern might even follow, namely an improvement of amnesic functions or the cure of a psychosis.

A few years later, Wollenberg described a 39 year old carpenter, who hanged himself during a stay in a psychiatric clinic, to which he had been admitted with paranoia and because he had tried to hang himself eight days earlier. Wollenberg assumed that a preceding loss of consciousness was an important requirement for retrograde amnesia to occur, though unconsciousness did not necessarily lead to retrograde amnesia.

Boedeker himself reported a 23 year old merchant who had a shot-wound in his head of uncertain origin; an attempted suicide was assumed to have occurred. The patient 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 psychic, and this was reviewed by Schneider.

The question was also central to Sommer’s report on “the amnesic disturbance 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 is organic) and Wagner (that it is organic), Sommer was strongly inclined to follow Wagner’s opinion (Paul), had argued vehemently against Möbius’s opinion, and also Meyer considered Wagner’s view the most plausible one. Sommer assumed that complete blockade of the corticoids and the interposition of the venous discharge resulted in temporary but still severe nutritional disturbance of the nervous system, and led to the neurological symptoms but without damaging them permanently. The controversial views of Möbius were published in 1922.

Meyer described 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 skill memory was preserved, and he remembered how to salute, while his episodic memory was disturbed. 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 a Korsakoff’s syndrome, and that strangulation will typically result in Korsakoff’s symptoms.

Frenkeln described the case of a 20 year old woman who after strangulation had massive disturbances in anterograde and retrograde memory and was disoriented to time and place. The patient remained in an amnesic state for about four months, but had not been psychically normal before the attempted hanging. Frenkeln discussed this case as resembling the symptoms of Korsakoff’s psychosis.

After the second World War, Jacob and Prykosch carried out a detailed analysis of the consequences of hanging on the anatomy of the brain. They based their investigation on the post mortem of 20 brains from cases who died after hanging. It is interesting that, as in other 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 claustrum, the pallidum, 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 show that there has been no 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.

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A neurological audit in Vitoria, Spain

In response to your invitation we are sending this brief account of a neurological outpatient audit in Vitoria, Spain. This is a health district with a population of 300 000 served by two neurology units based in two hospita- tals, totalling eight neurologists (one neuror- ologist 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 first ‘clinical audit 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 if complaints 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.