

Remembering delirium[†]

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Delirium is now the preferred term to describe acute confusional states and related organic mental disorders associated with acute impairment of consciousness (Gill & Mayou, 2000). No longer is delirium reserved for those states in which overactive behaviour, often with visual hallucinations, is dominant. To accommodate the broader usage, hypoactive states of delirium have been emphasised (Lipowski, 1990), particularly as these are the states most easily missed.

Crammer (2002, this issue) describes his subjective experience of an episode of delirium due to renal failure. For several days he drifted in and out of consciousness and seems generally to have been hypoactive.

Hughlings Jackson (see Lipowski, 1990) proposed that the greater the impairment of consciousness, the less likely were florid hallucinations and delusions. Meagher *et al* (2000) found that patients with hypoactive delirium were less likely to describe delusions. Crammer's account indicates that retrospective accounts may give a different picture.

DEFINING MENTAL STATES IN DELIRIUM

It is difficult to identify with confidence what is on the mind of someone during delirium. The mental state often fluctuates rapidly. The patient is very suggestible, so care must be taken not to offer leading questions. In fact, merely asking the patient a question may result in an arousal with a consequent improvement in awareness, thus destroying the very mental state the examiner has set out to comprehend.

The patient is not able to give an account of how he or she is feeling because insight into the delirium usually is lacking. Hirsch (1899, quoted in Lipowski, 1990) described how delirium is characterised by

an abolition of "self-consciousness". By self-consciousness I understand him to mean the self-reflective awareness and ability to monitor and be aware of one's own mental state, which is necessary to answer properly the question "what does it feel like?"

We therefore need to rely on retrospective accounts as well as spontaneous contemporaneous descriptions by the patient. However, accounts of the phenomenology of delirium often fail to distinguish consistently between the two (Wolff & Curran, 1935; Lipowski, 1990).

It is often said that the majority of patients with delirium are unable to remember the episode, but empirical evidence for this conclusion seems lacking. Indeed, Wolff & Curran (1935) suggested (p. 1213) that "Recall is usually good". Schofield (1997) interviewed 19 elderly patients shortly after recovering from an episode of delirium and found that just over half remembered perceptual disturbances.

But how reliable are retrospective accounts of the experience of delirium? Crammer remembers four discrete episodes and implies that these correspond to his experiences during four brief periods when his conscious level improved. However, I was not convinced that these recollections did, in fact, bear much resemblance to what was on his mind at any point during the delirium. It seems quite plausible that these 'episodes' are in fact constructions (Bartlett, 1932), made up from fragments of hallucinations and distorted perceptions experienced on and off over several hours or days but brought together and assembled retrospectively into brief excerpts. Crammer seems to acknowledge this in his interpretation of the last episode: "which seems to reflect the progress of my nursing care" (i.e. his experience over perhaps 1 or 2 days).

On the other hand, it is possible that the episodes of memory do relate to brief islets of greater awareness of external events. The episodes seem to be in their correct temporal

order, according to Crammer's inferences about the external events that have been incorporated into each one.

DREAMING AND DELIRIUM

When patients are able to reflect on their experiences many will describe them as dream-like (Wolff & Curran, 1935: p. 1204; Cartwright, 1966; Lipowski, 1990: pp. 101–102). This may reflect the fact that when we recall a dream (Hobson, 1997: p. 125; see below) or retrospectively describe our delirium, we are 'self-conscious' but are remembering a state in which self-consciousness was absent.

Nevertheless, for many, including Crammer, the experiences of delirium are remembered with greater vividness than are dreams. It is possible that this merely reflects the intervening processes between encoding and recall, rather than any differences in the original experience. Subjects awakened during rapid eye movement (REM) sleep describe their dreams much more vividly than those who recall them on waking from a night's sleep.

Hobson (1997) notes that dreaming is more like delirium than any other morbid mental state. In both, mental life is more related to the person's internal fantasy world than external reality, but 'self-consciousness' is lost. Perceptions tend to have a passive received quality to them, different from our sense of directed attention during normal consciousness. Dreams, like delirium, are characterised by visual imagery, by inconstancy of time and place and by scenario-like knitting together of disparate elements. The form of dreams, therefore, resembles the experience of delirium.

Delirium and dreams also may share similar content. Cartwright (1966) studied the delirium, lasting a few hours, produced by injection of piperidyl benzilate (an anticholinergic psychotomimetic) in young healthy volunteers. Some received the drug first and then had their spontaneous dream content analysed a few days later when they were awakening during REM sleep. The other half were studied in reverse order. She found that it was more likely for the content of drug-induced delirium to be incorporated into subsequent dreams than vice versa. On the other hand, Wolff & Curran (1935) described two patients in whom the content of the dreams they had a few days earlier was very similar to the hallucinations of their delirium.

[†]See pp. 71–75, this issue.

What about states of impaired consciousness other than delirium? Are they likely to be remembered as dream-like? One such state is awareness during general anaesthesia. Only a very small minority of patients describe the experience as dream-like (Ranta *et al*, 1998; Schwender *et al*, 1998). The patients' recollections suggest that they are much more aware of external events (e.g. noises and conversation in the operating theatre) than are patients in delirium. The patients almost always recognise the situation for what it is (i.e. they are aware of their predicament).

The observation that delirium seems to have a specific relationship with dreaming lends support to Lipowski's (1990) suggestion that delirium perhaps should be regarded as a disorder of wakefulness rather than consciousness.

If delirium is particularly associated with disruption of the sleep-wake cycle, this may have implications for management. Patients with sleep deprivation may be at greater risk of delirium (Lipowski, 1990). Older patients who reported that they were not satisfied with their previous night's sleep during the first few days after a major orthopaedic operation were more likely to develop delirium (Bowman, 1997). The multicomponent treatment strategy used by Inouye *et al* (1999), which produced a one-third reduction in rates of delirium in hospitalised older patients, included a strategy to manage sleep deprivation.

PSYCHOLOGICAL CONSEQUENCES

The memories of delirium are often frightening and vivid, but do they result in long-term adverse consequences?

Occasionally patients will, on recovery from the delirium, lack insight into the psychosis experienced during a delirium, which then forms the basis for persistent delusions (Weston & Whitlock, 1971). A patient on our unit remained distressed for several months by the firmly held belief that intensive therapy unit (ITU) staff had been stealing equipment. This delusion was based on his memories of the hallucinations and delusions he had while in a delirium on the ITU. His case raises an interesting question; do such patients remain deluded because their experiences were particularly assertive, or because they are prone to delusion formation, regardless of the origin of the false belief?

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Although amnesia for the episode may protect against adverse psychological consequences, some patients find the amnesic gap unsettling. For example, Mackenzie & Popkin's (1980) patient could not understand how she had forgotten so much and did not trust the explanation she was given by her clinicians for the amnesia.

A small proportion of patients are troubled by their experiences (Mackenzie & Popkin, 1980; Granberg *et al*, 1999), but for most the psychological outcome is good; they seem to pass off the experience as an unusual dream.

PATHOGENESIS OF DELIRIUM

The exact pathways involved in delirium are poorly understood. Neuroimaging studies (Trzepacz, 1999) suggest that disruption to the frontal cortex, anteromedial thalamus, right basal ganglia, right posterior parietal cortex and mesial-basal temporo-occipital cortex is particularly important. These findings are consistent with models of delirium that involve disruption of attentional systems in the brain, including those responsible for arousal.

CONCLUSIONS

To study the phenomenology of delirium we need to understand the relationship between the subjective experience at the time of the episode and the person's memory of what happened. The experience often is described in retrospect as dream-like. This may partly reflect the fact that the person is remembering a mental state in which self-consciousness was absent, just as self-consciousness is absent in dreams. It may also reflect a more fundamental connection between the state of dreaming and delirium. This lends weight to the idea that delirium should be regarded more as a disorder of wakefulness than a disorder of consciousness.

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