DISSOCIATIVE AMNESIA

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Dissociative Amnesia

Summary

THE situations of amnesia dissociative, lacunar or global, with or without dissociative fugue, are often observed in

Original article

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Dissociative amnesia

Abstract

Dissociative amnesias have been reported in neurological episodes, mild enough not to cause any visible lesions in proportionate retrograde amnesia with or without identity lost ogical trauma (known or not). In metabolic imaging studies, functional alterations, particularly in the bilateral hippocampus, rior lateral prefrontal cortex, despite normal morphological ion an organic, psychogenic or mixed origin for such changes, functional amnesia to speak about them. Patients recovered, lar to one preceding the amnesia, in a spectacular fashion or is controlled by the frontal cortex, repression which blocks al and biological context.

Key words:dissociative amnesia · functional amnesia · retrograde amnesia · identity · stressful events

course of events benign neurological disorders during which the state of consciousness changes without any abnormality on imaging structural. Amnesia is functional or dynamic and opposes lesional amnesia. Amnesia basically retrograde with or without loss of identity occurs readily in the context of psychic trauma (known or not). Patients may or may not recover, sometimes when they are engaged in a situation close to that preceding the amnesia or in a spectacular way. The observation of these situations suggests that memory traces in a context emotional particular may be made inaccessible due to frontal lobe control preventing their recovery. We report six short vignettes and recommend, after a paraclinical assessment essential but limited to what is strictly necessary, to listen and support these subjects through regular interviews as close as possible to the onset of amnesia.

Keywords :dissociative amnesia · amnesia functional · retrograde amnesia · identity · stress

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L'Dissociative sufamnesia is a situation of amnesia in France, which distinguishes it from a cultural or religious trance [1]. The term dissociative appeared in the DSM-IV for selective or global. The situation leads to a replace that of psychogenic, too vague but which remains cited as a synonym in the ICD-10. Dissociation was defined by Pierre Janet in 1893 as a "twilight" state by the "narrowing of the field of consciousness". The diagnosis must be made after eliminating the intake of toxins. Amnesia is massively retrograde. The frequency varies according to the countries and the physio-

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pathology remains enigmatic even if recent studies highlight the probable heterogeneity of these pictures and the suicidal risk of affected patients too little reported and not to be neglected [2]. In the DSM-5, published in 2013, dissociative fugue is no longer distinguished from amnesia as before and has become one of its phenotypes. In selective or localized amnesia, the subject does not forget his name or his identity but he can forget the people he met, or not identify objects bought in the hidden period. As is often the case, works of fiction testify to this better or more simply than scholarly works, thus the heroine of *There*

2012, no longer knows anything about her and no longer identifies the objects she handles in her apartment with strangeness but relative emotional indifference.

Original article

It is often difficult to explain to a patient who suffers from it what dissociative amnesia is and as in other situations, notably conversions, doctors readily use the term "functional", suggesting or explaining, on the one hand, that the organ (the *hard*) is intact and, on the other hand, that the function (the *soft*) can be restored, in whole or in part, with therefore a partial or total recovery of memories. The term "functional" can take on two meanings, which sometimes maintains an ambiguity. First, De Renzi *et al.* [3] proposed it in the classical medical idea of a functional disorder *versus* A organic disorder. This 20 years later appears as an old, outdated debate [4]. The proposal of a dynamic and reversible attack – a term proposed by Charcot in 1889 – *versus* that of a lesion seems more correct. Secondly, Markowitsch *et al.* [5] used the term "functional" in the context of functional imaging data objectifying a modified neuronal network despite the absence of structural damage. The observation concerns the AMN patient, a 27-year-old man, who had hidden ten years of his life, after observing a fire in his attic, without having suffered from anoxia. Functional imaging objectified with a PET scan, a vast network in hypodebit including the hippocampi, and this in the absence of any structural lesion. The subject during psychotherapy had a re-experiencing of a traumatic scene and re-experienced burning in his car during an accident during his early childhood. In a more recent publication, Markowitsch attested that this young man was in a period of great personal stress when this event occurred and suggested a biological hypothesis involving catecholamines leading to the "functional" blockage. It is difficult to conclude about these flow changes, the locations of which are variable and often widespread. However, The right prefrontal region, a region involved in the processing of emotions and biographical memory, appears to be a critical area [6, 7]. We ourselves have reported, from three observations, the possible involvement of a vast network involving the hippocampi [8].

Characteristics of amnesia

The main characteristic is that in the vast majority of cases it is a disproportionate retrograde amnesia, that is to say that the anterograde memory and the executive functions are intact or very little modified with regard to

Amnesia is selective or generalized. This element will condition the story and presentation of the patients, in particular the fact that they have or do not have identity amnesia.

Amnesia concerns the subjects' biography and access to life events but often also personal knowledge (identification of relatives, address, etc.) is often affected. Sometimes, forgetting concerns semantic knowledge, in particular the loss of professional knowledge, which prevents the return to work. It remains difficult to understand what mechanism prevents access to episodic, generic and semantic memories without modifying the construction of new memories [2, 7, 9-11]. It is not exceptional that some patients forget certain procedures (signature, driving a car, playing a musical instrument, etc.) [12]. These elements are difficult to be integrated into a hypothesis involving one or more structures of the Papez circuit. We cannot exclude that they are of another order: symbolization of a symptom, representation of the subject of what he thinks is the functioning of the memory, secondary benefit [13]. Finally, we ourselves have observed on frequent occasions, by systematically looking for it, a change in taste. This mainly concerns food tastes (the most spectacular situation was that of a vegetarian patient who started eating meat). Patient FF stopped smoking two packs of cigarettes a day overnight and did not resume his addiction when he recovered [14]! A patient whose amnesia was associated with somatoform symptoms and Ganser syndrome developed a passion for boats, an interest he had not had at all until then [15].

Dissociative amnesia can be associated with dissociative fugue [16, 17] and it is not unusual to find a history of conversion symptoms [8] recalling that "old hysteria" brought together conversion and dissociation.

Finally, from a behavioral point of view, the subjects present either great anxious perplexity or "beautiful affective indifference" [18]. The risk of suicide is significant [2].

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Case studies

Amnesia is lacunar (situations 1 and 2) or global (situations 3 to 6). It is sometimes accompanied by a dissociative fugue (situations 3, 5 and 6).

Situation 1

A 19-year-old man develops lacunar amnesia for the last three years of his life after a brief head trauma during a sports competition [8]. We meet him on day 5. He presents himself with a beautiful indifference. He dates the period of forgetfulness by forgetting the meeting with his girlfriend three years ago. The amnesia concerns his entire biography but he has no

years.

Situation 2

A 24-year-old woman, upon waking from a nap, notices a three-year lacunar amnesia: she does not recognize the man (her husband) leaning over her. We see her on day 2.

Amnesia as in the previous case only concerns the

biography. This lady is not indifferent but on the contrary perplexed and anxious about what she is experiencing.

Situation 3

A 19-year-old man is referred to the emergency room of a university hospital with no memory of his past life; he has even forgotten his identity. He describes waking up in a room, finding clothes that he put on and then going out, taking the first street, straight on, until he came across a tobacco shop where he asked what city he was in. Having received an answer, he returned to the residence where he has lived for six months but he has not been able to enter because he has forgotten the code. He seems to have lost none of the procedures of his profession and will resume it after a few days of observation. Passionate about Egyptology, he seems to have forgotten nothing of reading hieroglyphics.
[8].

Situation 4

A 41-year-old man, while on the phone and alone in his office, is found on the ground – the office neighbor hears the sound of a fall; the recovery of consciousness is immediate but the subject has forgotten his entire biography and much of his knowledge (in particular the history which is his core business). For a few days, this patient has amnesia of identity and does not recognize his relatives. He will permanently change his preferences and stop smoking overnight [14].

Situation 5

A 30-40 year old subject was found wandering in a small French town, unaware of his name or where he came from. He was on a bicycle and dressed appropriately. Patient description was searched in vain in the files of the

banditry, interpol and missing persons. This is an Asian subject who speaks French quite roughly, much better in English and understands Mandarin. We meet him 18 months later when he is living in a shared apartment and is being followed by a psychiatric network. He seems to have recovered nothing from his past when we meet him and to have normally recorded the period that has occurred since his wandering in the street, "without baggage". The psychiatrist who is following him does not note any psychotic element in his speech and behavior [17].

Situation 6

A 50-year-old woman does not arrive at work one morning. The police find her 12 hours later in a motorway car park having lost her coat and bag. She does not know her identity. We see her on day 10 when she is hospitalised in a psychiatric clinic. The contact is one of beautiful indifference. She has found her identity and elements of her life through *flashes*, dreams, and with his loved ones. The husband's story about the months that have preceded is edifying. For over a year, this switchboard patient, with no psychiatric history – the family will only report an introverted and suspicious behavior – has changed a lot. Very obsessed with organic food, she traveled miles for her shopping and above all gradually began to eat only two kinds of food (cereals). She lost a lot of weight and her relatives were unable to make her see reason. She then developed the conviction that she was poisoned by a bad tooth and had all her teeth pulled. A number of elements led to discussion of a cult drift. She had recently been having difficulties in her work. All of these data led us to suspect dissociative amnesiafugue in a psychotic context and/or in the context of a delusional outburst. The patient was given neuroleptics. She gradually recovered part of her memory without any significant information being learned about her "disappearance". She returned to work six months later on therapeutic part-time work, after we had communicated, with her agreement, with the occupational physician to explain that this picture did not affect her anterograde memory and with specialized psychiatric monitoring which she accepted.

The opportunities of amnesia

The underpinnings of dissociative amnesia remain unclear. On the other hand, neurological and psychological occasions are very frequently found. The latter are sometimes only known after recovery. It should be noted that this is the

more often serious events: conflicts, ruin and indignity, etc. A man had planned to join forces with a gang of criminals to commit a *hold-up* at his workplace but installed, on the day of the appointment, amnesia; a young woman suffered a sexual assault by a close family member and installed amnesia a few days before her wedding (unpublished observations). These examples should underline the possible seriousness of these situations [2]. Even if one must always know how to be wary of amnesia built on an associated organic problem, the neurological occasion most often acts as a neurological irritating thorn and almost always corresponds to "a change in state of consciousness". We can cite: TC/PC

(situations 1 And 4), syncopes, stroke amnesic[19], epileptic seizures, waking up from a nap (situation 2). This is reminiscent of post-traumatic stress disorder, the recovery of memories, sometimes very old, upon waking from a night's sleep or anesthesia.

A number of these situations occur in a dynamic of traumatic stress identified very quickly (situations 2 and 3) or after recovery (situations 1 and 4) [5, 7, 8, 20, 21], but dissociation can also be the translation of a psychotic state (situation 6) [22].

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recovery from amnesia

The evolutionary mode is poorly understood. Many of these situations recover, and often in a few days. It now seems obvious that the type of neurological and psychological occasions, and the mode of mechanisms blocking the recovery of memories must condition a more or less rapid recovery, without it being easy in our experience to make predictions. Some subjects recover spectacularly. It should be emphasized that this term describes our subjective impression while it is a lifting of symptoms and/or inhibition that contributes to recovery. Subject MM recovered from several weeks of amnesia after a tennis match, where in an exchange, he "revived a previous match with the same opponent" and "everything came back to him" [11]. Similarly, subject GR recovered his memory after anesthesia for a benign gesture, reviving anesthesia and a previous awakening [11]. It is difficult to say the time frame in which "recovery" of the "dynamic lesion" is still possible.

Subjects in situations 2, 3, and 6 recovered within a month, subject 1 recovered after her friend told her about a stressful event that had occurred before the onset of amnesia three months later, subject 4 recovered her memories gradually, and all within nine months. To our knowledge, subject 5 did not recover or say that he had recovered.

The paraclinical assessment

The diagnosis remains clinical. The paraclinical assessment is guided by the occasion of the amnesia since a neurological disease can be the mode of entry into amnesia. As much as possible, it must be carried out quickly to allow, due to its normality, to speak of functional or dynamic damage to the patient. It is not uncommon to add an EEG to a brain MRI. The search for toxins must be done widely. The examinations to be carried out are guided by the clinical circumstances and the history of the subject concerned. Functional imaging can sometimes be carried out; it is often disappointing.

carefully researched and treated. Meeting a psychiatrist is therefore very important.

Cognitive assessment

It is difficult, due to the lack of studies and monitoring of these subjects, to know what to propose as an assessment. One thing is certain: it is appropriate to devote a long time of dedicated interview as we have seen to the search for the somatic, psychic and socio-family foundations and occasions. We must also look for dissociative antecedents or

somatoform lineage [8]. The cognitive assessment carried out is constructed according to each situation: extent of the amnesia, request of the subject, doubt about another diagnosis or not, encounter in the immediate aftermath of the amnesia or not. The assessment includes two axes, a minimum but sufficient assessment of anterograde memory. Most often, the subject already knows that he has recorded everything that has happened since the onset of the amnesia but the test has the virtue of verifying and reassuring him. There are situations of anteroretrograde amnesia but they are rare. Very discreet executive disorders may be reported [23] but it is not useful to look for them urgently and everything must be done so that the tests reassure and the assessment is not too long.

We recommend the clue word tests [24]. These are very old tests, based on associative memory. The strict instructions for administration make it possible to propose a scoring rule, even if it is not free from subjectivity. Finally, the test can last, if we take a list of 12 words, barely 20 minutes. Galton in 1879, from the exploration of his own memories, in the manner of a botanist - which he also was - showed with the associative method that one could access information classified by period, general idea, specific idea, imaged memory, sensory richness, type of vocabulary, number of repetitions, etc. Forgetting is dynamic, which allows him to hypothesize that access to associations that are no longer conscious remains possible. There are lists from translations of the literature of

1970s that would deserve to be revised and validated but which remain interesting for exploratory purposes. The subject must for each of the words, for example for the so-called Robinson list: "letter, happy, game, success, dog, do, furious, break, lace, river, alone, find", state the most precise personal memory that comes to mind, specifying the details of it (D), whether or not it remains very vivid (I), the moment in time when it took place (T), and whether or not the emotion of the moment is remembered (E) and the spatial details of the episode (S) in order to prompt the recovery of episodic memories. The patient may or may not be suggested a time period for searching for memories. Their veracity may or may not be checked: association is more important than veracity and, in our experience, we more often see a difficulty in stating memories than in producing false ones. We can encourage patients when they tend to produce generic memories. In fact, it can be interesting to observe that subjects absolutely fail to reconstruct episodic memories. The scoring method is complex. For our part, we suggest the DITES score, which includes the five indices set out above. In our experience, recovering memories with all the clues is a good prognosis because the subject demonstrates ability to reconstruct episodic memories.

Subject 1, encountered three days after the amnesia, produced the word *happy* "I have never been happier than the day I found out I had been accepted (...). I was coming back from

school was five or six o'clock, it was around summer, my father was shirtless. He smiled at me and had a letter in his hand. My mother had tears in her eyes and kissed me, my brother was jumping all over the kitchen, the cat had hidden under a piece of furniture... We were all happy at the same time. He recovered a few weeks later from the amnesia that had set in in a traumatic context (unknown at the time).

Patient 6 was able to produce only very poor responses. For *dog*: "I don't see, I don't like them too much." She gradually recovered.

Conclusion

Dissociative amnesia is a rare situation of amnesia. It is important to collect clinical data of these situations including somatic and psychic occasions, the fact that it is incomplete or global, without or with loss of identity, without or with fugue, whether they exclusively concern the biography of the subjects or other aspects of declarative memory, in particular professional knowledge or even procedural memory, the evolutionary mode and recovery and psychological comorbidities. Let us bet that a careful collection of situations will make it possible to construct with imaging and electrophysiological tools and contemporary molecular analyses important studies to explore the intimate mechanisms of dissociation and perhaps to establish a continuum between these various phenotypes. For the time being, benevolent empirical care with careful listening, a reasonable assessment without seeking to unblock at all costs an amnesia that is probably beneficial for the individual – if we admit that there is a blockage of the inhibition type – remains the most reasonable.

Links of interest

The author declares no conflict of interest in relation to this article.

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