

CASE REPORT

A transient awakening of a patient with Alzheimer's disease that questions our practice

Frédéric Bloch^{1,2}

¹Department of Gerontology, Hôpital Broca (Assistance Publique - Hôpitaux de Paris), Paris 75013, France

²University Paris Descartes, EA 4468-75014 Paris, France

Correspondence

Frédéric Bloch, Hôpital Broca (AP-HP), 54/56 rue Pascal, 75013 Paris, France. Tel: +331 44 08 35 21; Fax: +331 44 08 35 25; E-mail: frederic.bloch@brc.aphp.fr

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Introduction

Alzheimer's disease affects about 15 million people worldwide. Based on the PAQUID cohort study of 1461 subjects aged 75 years or over, the prevalence of dementia was estimated to be 17.8% of this population and Alzheimer's disease was the main etiology of dementia (79.6 per cent) [1].

As the disease progresses, there is an increasing impairment of all the cognitive functions with variable declines. Nonetheless, improvements are not usually described in the natural history of the disease [2].

We describe a case of a patient with Alzheimer's disease that presented a transient improvement of her cognitive status and autonomy making her to be as before the illness.

Presentation of Case

We present the case of Mrs. B, a 90-year-old woman. I had been following her for 6 years in our memory clinic when I received an email from her daughter alerting me of what she described as a miracle that had taken place the previous week.

At my first consultation with her, 6 year before, her Mini Mental State Examination (MMSE) [3] was of 18/30, the MRI showing periventricular subcortical hyperin-

Key Clinical Message

Improvements are not usually described in the natural history of degenerative dementia. It seems possible to find the normal workings of impaired learning and lost long-term memories that appeared to be permanently altered after severe neurodegeneration and synaptic loss. The activation of these programs seems to represent the basis of the dysfunction, rather than the program itself.

Keywords

Alzheimer's disease, natural history, single case.

intensities in the white matter and a moderate hippocampal atrophy. This was in accordance with the whole neuropsychological evaluation in favor of a typical Alzheimer's syndrome. Since then, Mrs. B presented a gradual decline of her cognitive capacity [4], and, at the time of this unexpected event, her MMSE was of 10/30. She was under cholinesterase inhibitors for 3 years at stable dosage with no other treatment, whereas I proposed the intervention of a physiotherapist and of a speech therapist with no pharmacologic treatment the first years. I had tested 1 year before to associate this treatment with memantine, but I had to stop after 1 month because of a poor tolerability. She was not autonomous, but she still lived at home with a carer coming in the morning, her two children visiting during the day and she was spending 1 days a week in day-care center.

The previous Thursday, her daughter explained that Mrs. B had felt tired and so returned home after a particularly active physiotherapy session. Her temperature was 38.5°C, well tolerated and her attending physician, suspecting a urinary infection, set up the appropriate treatment.

On Friday morning, her daughter arrived earlier than usual and met Mrs. B's neighbor, who helps every morning, had known her for 30 years and who said she had found her in her words "as before". Indeed, entering the room, her daughter found her mother to be as before the

illness. While helping her in the bathroom, her daughter noted that Mrs. B seemed to suddenly realize her current poor state of health, being outraged by her sarcopenic emaciated legs covered in hematomas. The discovery that she wore incontinence protection saddened her even more.

During lunch, she rediscovered her jovial nature and especially her rhythm and tone of voice. She told stories about her painting sessions in the day-care center, whereas she had previously been unable to remember what she had done in the afternoon.

Her daughter received a phone call at 9:30 P.M., it was her mother, she had been watching the tennis on television and joyfully told her daughter the winner's name. She gossiped and did not seem in a hurry to go to bed. The next day, her daughter found Mrs. B radiant, well dressed and hair groomed, sitting up in her chair and knitting while watching TV. They went shopping in the afternoon to recreate the activities they had not done together for a long time.

On Sunday, disappointingly, her daughter found her mother in pajamas in bed, as usual. At lunch at the restaurant, Mrs. B was as before this spontaneous recovery, swallowing her meal hurriedly and in silence. They watched Sunday TV and played the game Rummikub[®] together: she played well, no different from the way she was in her best days.

Faced with this surprising testimony, I saw Mrs. B in consultation after having prescribed brain imaging and electroencephalography (EEG) that were without abnormalities. I found her to be as in my previous consultation, her MMSE unchanged.

Discussion

Fluctuating symptoms are not so uncommon in demented patients, but are more characteristic of dementia with Lewy bodies [5] while Mrs. B has a typical presentation of Alzheimer's disease. Generally, these patients present mostly aggravations or delirium but rarely recovery.

Then, how can we explain this episode which was corroborated by her attending physician? A literature search for similar cases failed to provide an answer other than another testimony on a blog of an Alzheimer's Association from a woman reporting a similar episode that had happened to her husband.

For Mrs. B, the therapeutic intervention was typical, associating psychomotor stimulation and cholinesterase inhibitors but even though these strategies have proven its worth to alter the natural course of Alzheimer's disease, it has never been in such a transient and rapid way [6]. Can we then implicate the unusually intensive physiotherapy session she had followed? This hypothesis may be worthy

of examination given some published studies showing the effects of intense physical activity on cognitive function in young subjects [7, 8]. A study by Cordova et al. [9] also suggests that acute physical exercise may improve alertness and the processing of executive functions in elderly females. This is in accordance with Chmura et al. [10] showing that cortical neuroelectric activity increases with increasing intensity of physical exercises.

Conclusion

Nevertheless, this account shows that, in degenerative dementia, even in very advanced cases, it is possible to find, albeit temporarily, the normal workings of impaired learning, and lost long-term memories that appeared to be permanently altered after severe neurodegeneration and synaptic loss[11]. The activation of these programs seems to represent the basis of the dysfunction, rather than the program itself. This provides therefore a baseline for orienting our research into effective treatments.

Conflict of Interest

No conflicts of interest or competing financial interests exist.

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