Neurology: locked-in syndrome in *The Diving Bell and the Butterfly* (2007)

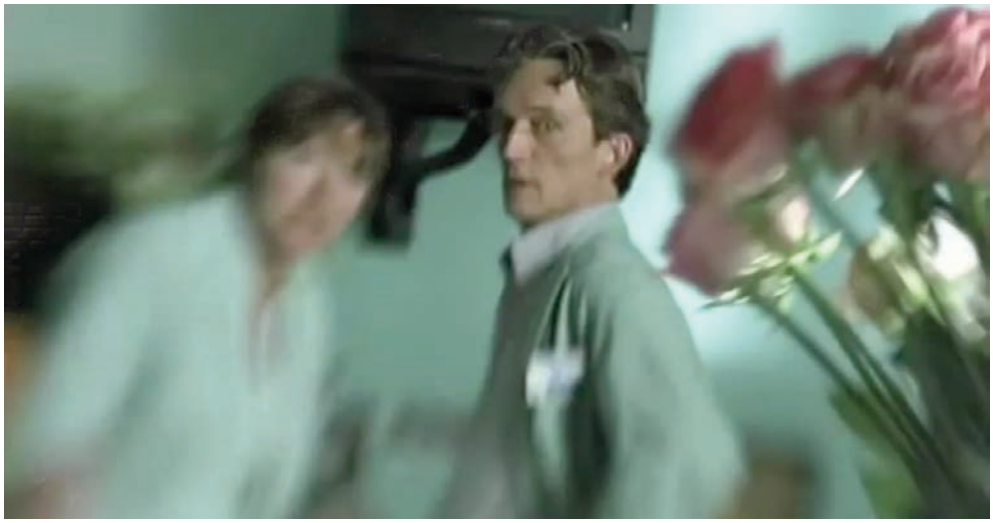
Action: France. 90s of the 20th century. American poster.

Technical Details

Title: *The diving bell and the butterfly.*
Original title: ***Le scaphandre et le papillon.***
Country: France and United States.
Year: 2007.
Director: Julian Schnabel.
Music: Paul Cantelon.
Photography: Janusz Kaminski.
Film editor: Juliette Welfling.
Screenwriter: Ronald Harwood about the homonymous work of Jean-Dominique Bauby.
Cast: Mathieu Amalric, Emmanuelle Seigner, Marie-Josée Croze, Anne Consigny, Patrick Chesnais, Niels Arestrup, Olatz López Garmendia, Jean-Pierre Cassel, Marina Hands, Max von Sydow, Gérard Watkins, Théo Sampaio, Fiorella Campanella, Talina Boyaci y Isaach De Bankolé,...
Color: Color.
Rumtime: 112 minutes.
Genre: Biography, drama.
Language: English.
Productions companies: Pathé Renn Productions, France 3 Cinéma, Kennedy/The Marshall Company, C.R.R.A.V. Nord Pas de Calais, Région Nord-Pas-de-Calais, Canal+, CinéCinéma y Banque Populaire Images 7.
Synopsis: On December 1995, a serious embolism left Jean-Dominique Bauby, journalist and father of two children in a deep coma. When he woke up he had all the impaired motor functions. He couldn't move, not talk, and not even breathe without help. Only one eyelid of his inert body moved. This eyelid became his union with the world, with others, with life. Blink once to say yes, twice to say no. With his blink he chooses the letters of the alphabet that his visitor dictates to him and thus he creates words, phrases, entire pages.
Awards: Golden Globe for Best Foreign Film and Best Director (2007). Nominated for the Oscar for Best Film, Director, Photography and Screenplay (2007). Best Director Award at the Cannes Film Festival (2007).
Link: https://www.spanish.imdb.com/title/tt0401383

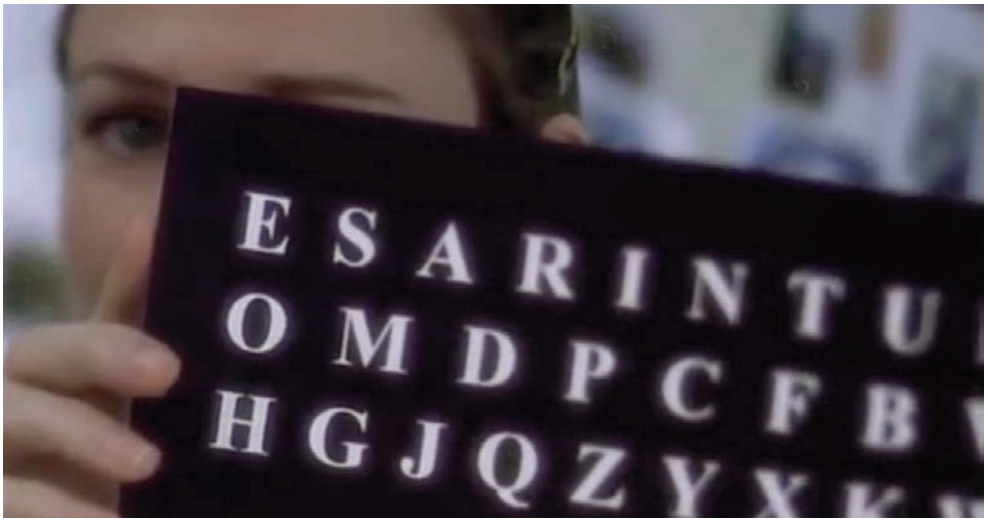
Trailer

Abrupt begins of a stroke (CVA).



Patient awakes after 3 weeks of coma.

Apparently the vision was preserved as well as eye movements but not the closing of the eyelid on the right side, proceeding to obturate to avoid lacerations.



With the help of the left eye and his conscious life, we proceed to the rehabilitation of speech.

There is a flattening of the frontal wrinkles of the right side of the face, evident right peripheral facial paralysis.

Patient using the tracheostomy for the last time, who was the one who supported his life until then and finely dies.

The syndrome of captivity or enclosure (Locked-in Syndrome, LIS) is a disease located within the framework of disorders of consciousness, not because it affects consciousness or cognitive functions, but because, it can be located in a gradation of cognitive and motor functioning. The LIS responds to: sufferers are "locked" in a body that is almost totally immobile. It has two main causes: a stroke accident (CVA) due to obstruction of the basilar artery with brainstem infarction that interrupts the descending corticobulbar and corticospinal tracts, without damage to the hemispheres; or a neurodegenerative disease, mostly amyotrophic lateral sclerosis (ALS)[1].

The patient presents paralysis of the four extremities (tetraplegia), neurological incapacity of articulated speech (anartria), has the total preservation of consciousness, cognitive abilities, vision and hearing, which are enough to stimulate the sense of the imagination surpasses the "real" and manages to travel throughout his life looking for passages that provide him with wellness and tranquility, thus being able to cope with the state in which he finds himself[2].

Throughout the film you can see the symptoms from the abrupt onset of the disease, its progress and the end of the patient's life, data that are compatible with what was exposed by Dr. Christopher Hawkes in his article "locked-in report of seven cases "demonstrated in great magnitude in the image of his case number 2[3], leading to conclude that the patient (as shown in the penultimate photography) has a right peripheral facial paralysis, where hemorrhagic damage is found in the ventral protuberance , who interrupts the passage, at the nuclear level of the nerve fibers of the seventh pair towards the face producing a paralysis of the right side of the face, which is why they also had to close the eyelid of the eye on the same side.

Finally, it should be noted that if there is a central facial paralysis, there should be some damage at the level of one of the cerebral cortices (right or left). To be more accurate, in the supranuclear area of the nerve fibers, the same as at the time of decussation and reach the face are joined with the nerve fibers of the opposite cerebral cortex, which will only manage to maintain the innervation of the upper part of the face, but not the part of the labial (lower) commissure. Because the lesion is in the brain stem, as in the case of thelocked-in syndrome, there will only be peripheral paralysis (in the whole hemiface), which should be evident even in the death of thepatient, and in the last fotography there is no evidence, on the contrary, a right central facial paralysis is observed.

References

1. Vidal F. Hacia una fenomenología del síndrome de cautiverio. Rev Asoc Esp Neuropsiq. 2018; 38(133): 45-73.
2. Clavé Arruabarrena E. *La escafandra y la mariposa* (2007): el testimonio de un hombre enclaustrado. Rev Med Cine [Internet]. 2017; 5(2): 66-73.
3. Hawkes C. "Locked-in" Syndrome: Report of Seven Cases. Br Med J. 1974; 4(5941): 379–82.

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