

Changes in Personality Caused by Neurocysticercosis

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Abstract

This article aims to discuss theoretically changes in personality aspects caused by neurocysticercosis. An unsystematic narrative literature review aiming to present an open issue was used as research technique. Neurocysticercosis is a disease whose infestation usually depends on poor hygienic, health and education conditions. The infested patient has a lower self-esteem in addition to numerous psychological, medical and social consequences. It directly affects the ego, weakening the personality in its structure, which may cause a significant social and occupational deterioration or a deterioration of other important aspects of life.

Keywords

Psychological Changes, Neurocysticercosis, Personality

1. Introduction

It is known that an illness reveals almost clearly the way a person lives. In a certain way, the story of its life becomes the story of its illness, its habits and customs, its idiosyncrasies, the environment from where it came from and its living and hygiene conditions under which it was submitted to.

Cysticercosis, and more specifically neurocysticercosis, is a disease whose diagnosis becomes embarrassing for the person that receives it. From its communication, many psychological consequences may be observed, such as the lowering of self-esteem accompanied by feelings of shame, feeling dirty and thoughts around oneself, which provide its life with a failed, rather negative self-evaluation (Capitão, 2003).

Often, the patient seeks a specialized service after undergoing a long series of consultations with clinicians who do not always possess the sufficient instrumental for an accurate diagnosis. Its admittance as a patient to neurology service occurs because of a range of complaints and symptoms that are suggestive of meningitis. After first aid, the clinical and epidemiological history, the further examination of cerebrospinal fluid and the neu-

roimaging, such as computed tomography and magnetic resonance imaging of brain, may refer the patient to a diagnosis of neurocysticercosis (Canelas, 1962; Forlenza, 2001; Machado, 1991; Bedaque, 2003).

In fact, it is a complicated name whose connotation most people do not know. However, when the diagnosis of the disease is communicated to the patient, the first question that arises is “what is it, doctor?” The answer given to the person is bound to a consequence, that is, “it was caused by the pig worm; the pig worm entered your body and lodged itself in your brain.”

When it is explained that the pig “worm” lodged in the brain—a highly valued organ, no matter what the patient’s social level is—is as a result of inadequate hygienic conditions etc.; a self-deprecating reaction is observed. We might say that it is overcompensated by the conscious denial of having been or being exposed to the indicated conditions. Most of the time, the patient admits only the habit of eating undercooked pork. From this “reaction”, one can imagine how the ego is stricken and, in particular, how the idealization of oneself is shaken.

Before we analyze the psychological aspects involved in the disease, especially those that refer to narcissism, we would like to present a small overview on cysticercosis. This article aims to discuss theoretically changes in personality aspects caused by neurocysticercosis.

2. Cysticercosis: Definition and Forms of Contagion

Machado (1991) and Oliveira and Bedaque (1999) define neurocysticercosis as an infection of the nervous system caused by cysticerci, larval forms of *Taenia solium*. In general, the disease cycle comprises humans as a definitive host of *Taenia solium* and pigs (swine) are intermediate hosts infected by the larval form of the tapeworm.

In Brazil, the tapeworm is popularly known as “lonely”, because often there is only one worm parasitizing the human intestine, although several tapeworms have already been found in the intestine of a single person, including from different species. In addition to this popular name and depending on the region of the country, it may be referred to as “grits” or “thrush” (Machado, 1991; Pedretti Jr. et al., 2005).

We observed that there is some confusion on what is teniasis and what is cysticercosis. The ingestion of pork beef by humans with viable cysticerci will result in taeniasis. The cysticercosis, in turn, is developed by the intake of *Taenia Solim* eggs. This may occur because of various actions such as drinking water and/or food contaminated as a result of poor environmental and personal hygienic conditions from the environment in which the person lives. Besides these conditions, self-infestation may occur. It is a less frequent situation, especially since it results from gravidic proglottids reflux of intestinal contents into the stomach. As pointed out by Machado (1991), the infestation depends on the action of the gastric juice, which allows the eggs to hatch and release the embryo, which then results in cysticercosis. This embryo actively goes through the gastric mucosa, reaches the bloodstream and attach itself preferentially in tissues such as the subcutaneous tissue, the muscle tissue, the eye and the nervous system. The latter is affected in up to 90% of reported cases.

For Bedaque (2003), Forlenza (2001) and Pedretti Jr. et al. (2005), neurocysticercosis (NCC) is the most common parasitic disease of the human central nervous system. It is presented as a disease from countries and regions where there is contamination of pig herds, consumption of pork contaminated by the parasite, poor general sanitation conditions, inadequate hygiene and lack of knowledge about how the disease is caught.

Canelas (1962), Loo and Braude (1982) and Tavares (1994) point to the endemic occurrence of neurocysticercosis in countries of the African, Asian and Latin American continents, especially Mexico and Brazil. Its incidence is more concentrated in rural areas. However, with an ever growing population in big cities and inadequate sanitary and hygienic conditions, it is increasing in urban areas.

Bedaque (2003), Forlenza (2001), Oliveira and Bedaque (1999) and Pedretti Jr. et al. (2005) claim *Taenia solium* to be a hermaphroditic parasite of the small intestine. Its biological cycle comprises humans, the only definitive host of the adult tapeworm, and pigs, an intermediate host during the larval form of cysticercosis. Contamination often occurs when people ingest water or food contaminated with the eggs of the parasite, eliminated by the feces of animals that do not host the adult worm. Because of the lack of knowledge about the acquisition of infestation, the link that binds the individual to the parasite is a relevant information related to the objectives of public health (Bedaque, 2003).

As the vast majority of infestations directly affects the central nervous system (CNS), numerous clinical manifestations are observed. The most frequent are seizures, intracranial hypertension, acute and recurrent meningitis (Bedaque, 2003), many forms of mental illness, apoplectic forms, i.e., cerebral haemorrhages with an ab-

rupt impairment of the brain functions, and spinal form resulting from spinal cord disease. The aggression to the central nervous system is caused by three processes, namely the presence of the parasite in the brain parenchyma and in the cerebrospinal fluid spaces, the inflammatory process and the formation of fibrosis, calcification and residual granulomas. As a result of contamination, the brain disease will depend on the number, type, location, size of the cysts and the host's immune response (Bedaque, 2003; Forlenza, 2001; Machado, 1991; Pedretti Jr. et al., 2005; Sotelo, Guerrero, & Rubio, 1985).

For Pedretti Jr. et al. (2005), neurocysticercosis is not a single disease, but many neurological syndromes can be caused by the infestation of the central nervous system. The various forms of clinical manifestations are related to four main factors, namely the varying cyst locations in the brain parenchyma, the location in the sub-arachnoid space or ventricles, the amount of cysticerci and the intensity of the host's immune response, which may vary from immunological tolerance to severe forms of encephalitis, cerebral edema, arachnoidites and vasculitis.

Once the cysticerci lodge themselves in the host tissues, especially in the CNS, the role of the immune system is to recognize them as foreign agents and develop an inflammatory reaction that will adequately combat the infection. However, this situation does not always work, since in many cases the immune response develops slowly, allowing the parasites to survive inside the host in a state of relative immune tolerance for several years. Moreover, in many cases, parasites are quickly eliminated due to an intense inflammatory reaction. This reaction may trigger lesions in the brain tissue surrounding the cysticerci, endangering the patient's life (Bedaque, 2003; Pedretti Jr. et al., 2005).

As Forlenza (2001) rightly states, the presence of cysticerci in the brain tissue may be silent, but its degeneration commonly determines the onset of clinical manifestations by the inflammatory edema of the adjacent tissues and the disruption of the blood brain barrier, leading to local or distant reactions. Calcifications, occurring on average six years after the infection, correspond to the scar form. Acute and recurrent inflammatory phenomena lead to meningeal thickenings and changes in the lchoric flow.

Cysts may fix themselves in the brain parenchyma, or move and migrate through the channels of the lchoric system from the lateral ventricles to the third and fourth ventricles beyond the basal cisterns. The attesting of this mobility is important to explain the symptoms of many cases, especially when producing an acute or chronic hydrocephalus. This migration mechanism is also described for spinal forms (Pedretti Jr. et al., 2005).

Machado, Nóbrega and Barros (1990), Takayanagui (1990) and Tavares (1994) indicate numerous clinical manifestations caused by the NCC, the most common being epileptic syndromes, mental disorders and cognitive impairment besides focal neurological signs, convulsions and intracranial hypertension. Pedretti Jr. et al. (2005) state that progressive mental disorders may accompany the disease. The identification of an Antisocial Personality Disorder by complementary psychological tests is not rare. Neurologic complications cause Psychotic Disorders in more than 15% of patients with NCC, mingling with many psychiatric mental disorders, to which clinical reasons or parasites are not associated.

Furthermore, Bastos (1953), Bedaque (2003), Brink and Beca (1936), Forlenza (2001), Forlenza and Vieira Filho (1996) and Pupo et al. (1946) list a number of mental disorders caused by NCC such as delirium, sensorial-perceptive changes, agitation, depression and personality disorders. Patients hospitalized due to severe psychiatric disorders may most likely contaminate and infest often themselves because it is not rare that they eat their own feces, or feces of others.

Among the many neurological functions that may be damaged by cysticercosis infestation are executive functions. Executive functions are cognitive processes underlying the ability to adaptively respond to particular situations and their operation controls. They regulate the processing of information by the brain. In short, these are skills that jointly allow the realization of a goal-oriented behavior (Gazzaniga & Heartherton, 2005; Lezak, Howieson, & Loring, 2004).

Any directed conscious behavior, from simple to more complex events, requires skills related to executive functions. In complex situations, it is necessary to make a plan and develop strategies to achieve a certain goal and still have the ability to wait to respond to stimuli in the environment until it is appropriate to do so (Pliszka, 2004). These actions involve identifying and organizing elements such as objects, materials and behavioral skills. The person must be able to conceptualize and adapt its already learned strategies to change the present situation and deal objectively with itself and the environment. Furthermore, it should be capable of understanding the alternatives, judging and making choices, sequencing and building hierarchies of ideas that will form a directional framework for the achievement of its objective behaviors (Lezak, Howieson, & Loring, 2004).

The brain region corresponding to executive functions is the prefrontal cortex. This cortex occupies half the frontal lobe forming a solid network that connects to the motor, perceptual and limbic areas of the brain (Goldman-Rakic, 1995; Passingham, 1993). There are also extensive connections between the PFC and the parietal and temporal cortex and pre-striatal regions of the occipital cortex. Subcortical structures, including base nuclei, cerebellum and several nuclei of the brain stem, protrude themselves indirectly to the PFC through thalamic connections. Almost all cortical and subcortical areas of the brain cortex influence that cortex, either directly or through synapses. Thus, it is concluded that executive functions may also be susceptible to damage caused, for example, by the infestation of cysticerci in other brain regions (Gazzaniga & Hearshon, 2005; Hutton et al., 1998; Lezak, 1993; Lezak et al., 2004).

The prefrontal cortex can be divided into dorsolateral prefrontal cortex (DLPFC), orbitofrontal or ventromedial and anterior cingulate cortex (Gil, 2002; Pliszka, 2004). The dorsolateral prefrontal cortex and the anterior cingulate cortex are related to the cognitive aspects of executive functions, while the ventromedial region is related to responses involving affectivity (Cozolino, 2002; Teasdale et al., 1999). Such differences are observed from studies with patients suffering prefrontal damage (Cozza, 2005; Malloy, Bihle, Duffy, & Cimino, 1993).

Injuries to the dorsolateral prefrontal cortex by cysticercosis may result in memory deficits, selective attention, cognitive flexibility and temporal organization. Lesions in the anterior cingulate region cause difficulties in the ability to monitor attention on awareness activities, and lesions in orbitofrontal regions generate changes in personality (Cozza, 2005; Damásio, 2000; Goldman-Rakic, 1995; Pliszka, 2004).

The consequences of infestation by cysticercosis may be many and varied, depending on the affected region. It is known, for example, that the DLPFC also appears to play an important role in temporal organization, that is, the concept of a determined sequence of actions. Fuster (1997) proposes that the DLPFC is responsible for encoding the emotional aspects of behavior because temporal labels are present in memories. Through these labels, the person is able to sequence and reflect on past events and mentally anticipate the results of actions in the future. Patients with injuries may have difficulty to perceive and reflect on the order of events and situations. They may also be unable to perform the anticipation of supposed consequences (Fuster, 1997; Pliszka, 2004).

Patients with changes particularly in orbital and medial PFC structures also have deficits in the ability to contain an initial impulse response against a stimulus. Such deficits are observed especially in relation to social and emotional stimuli. Injuries may result in loss of self-criticism, of the ability to assess the person's own performance, unabling the individual to change plans and actions against difficulties encountered, thus hindering many emotional and social skills (Damásio, 2000; Gil, 2002; Pliszka, 2004; Lezak et al., 2004).

In addition to the aforementioned changes in executive functions, damages to the orbitofrontal region cause significant changes in inhibitory control related to emotional events. Thus, faced with a certain situation, there is a strong tendency, often inadaptative, to respond immediately to a stimulus. The ability to inhibit such a response related to emotional aspects is related to the orbitofrontal region. This area is responsible for sending a message to the amygdaloid body in order to inhibit the predominant response (Pliszka, 2004).

Because neurological and behavioral consequences may be so overwhelming for patients infected with cysticerci, one cannot underestimate its impact. In his excellent study, Pedretti Jr. et al. (2005) point out that NCC affects both genders, being found at any age from 5 to 76 years, with a peak incidence between 25 and 35 years. It was described in most European and Asian countries. It is widespread in Central America, where 2.13% of 543,672 pigs investigated in six countries had cysticercosis, and *Taenia spp.* eggs have been found in 157,085 samples of human feces in Latin America. In 2005 in Brazil, it was estimated that there were 140,000 patients with NCC, generating a mortality rate of 15% to 25%. According to the report by the *Center for Disease Control and Prevention*, in 1992, NCC affected about 50 million people worldwide, of which 50,000 died each year from it.

3. From Past to Present

In the past, without the technical resources available today for an accurate diagnosis, cysticercosis already seemed to accompany humans for a long time. In the 3rd century BC, there were public health standards stating that eating pork was forbidden and whoever disrespected these rules was sentenced to serve prison time (Barra et al., 1992).

Barra et al. (1992) indicate that the non-differentiation between leprosy and cysticercosis was one of the reasons that prompted Moses to forbid the consumption of pork by Jews. Antoniuk (1994) stresses that some histo-

rians mentioned that Jeanne D'Arc, after having been burned for witchcraft, was subjected to an autopsy. In her brain, especially in the left temporal lobe, partly preserved by the fire, recemose calcified cysticerci were found. These cysticerci could be the cause and the explanation for auditory and visual hallucinations that Jeanne D'Arc had.

Pedretti Jr. et al. (2005) report that Aristophanes, in one of his comedies written between 385 and 375 BC, was the first author to refer to the presence of cysticerci vesicles in animals, comparing them to small stones that could be found under the tongues of pigs. Paranoli was, according to the authors, the first person to describe the finding of white round vesicles filled with a clear liquid in the *corpus callosum* of a man during an autopsy.

For Bedaque (2003), besides the fortune of the richest, the globalization in the turn of the century lead to the impoverishment of the less fortunate, which is translated by a population exodus seeking survival and looking for work. It represents the current expanding scenario of neurocysticercosis, which does not spare rich countries and religious people that abhor pork. Poverty, ignorance and deficiency of health conditions are a fertile soil for maintaining the transmission cycle.

We observe today, without completely analyzing the issue, that cysticercosis reaches our days still shrouded in mystery not only by the vast majority of people, but also the entire health system. Despite the great knowledge about the disease and the technical resources to diagnose it, there are no accurate data on the incidence of cysticercosis in Brazil.

Bedaque (2003) notes that humans develop cysticercosis usually through an accidental infection. The infestation is associated with poor hygiene, sanitation deficiency and ignorance of the disease and its biological cycle. The person with a tapeworm almost always ignores that the eggs eliminated in the proglottids and in feces, when ingested by humans or pigs, are the cause of cysticercosis.

As previously mentioned, cysticercosis is a disease whose infestation usually depends on hygiene conditions, which alone leads us to induce and to imagine how its impact is widespread in Brazil, which has extremely precarious health and educational conditions. Over the past 20 years, three factors have contributed to the recognition of neurocysticercosis as a common cause of nerve diseases: computerized neuroimaging studies, providing non-invasive ways to an *intravivam* diagnosis; the movements of people from endemic areas to developed areas, resulting in the selective study with a human sample with an increased risk; and the specific increase of serological techniques that are associated with neuro-radiology, which enable an increased frequency of diagnosis (Bedaque, 2003).

Pedretti Jr. et al. (2005) point out that Spina-França reported for Brazil a 2.98% percentage of admissions for brain cysticercosis between 1947 and 1955 at the Neurological Clinic of FMUSP. The prevalence of NCC in endemic areas ranges from 0.1% to 3.6% (Canelas, 1962; Loo & Braude, 1982; Tavares, 1994).

4. Hospitalization and Psychological Aspects: Consequences

As discussed above, there are many phenomena observable at the moment of the diagnosis of NCC and the need for hospitalization of a patient. It is true that each person reacts in its own way considering the personal, family and social history. The mental resources of each person also vary in the form of thresholds to endure frustration, pain and other restriction and deprivation situations. For Jeammet et al. (2000), the way the patient experiences the disease, not only its psychological implications but also its socio-professional aspects, also depends on parameters related to the disease and the set of characteristics of the person infected with the disease.

Kübler-Ross (1987) notes that there are five stages through which a person goes through during the knowledge of its diagnosis: denial, anger, bargaining, depression and acceptance. However, despite the truth of the author's statement, we do not have a single pattern of reaction, or evidence that it happens always in that proposed order: if we take this gradual pattern of states as something always expected, we run the risk of considering the changes occurring in the hospital routine as patient inadequacy or behavior outside the normal pattern.

However, when hospitalization is recommended, the patient loses its autonomy. It becomes rather dependent on the will and care of others. Doctors examine, nurses and nursing assistants administer the medication and the nutritionist programs the patient's diet and fasting. Patients, in general, unwittingly take up their roles and undergo routines and regulations little or nothing individualized. They share their physical space, intimacy and emotions with others they do not know, medical staff members and other patients. They move away from their social and professional tasks, as well as from important people in their personal relationships (Romano, 1999).

The hospital has a routine and the patient, deprived of its daily routines for a better evolution of its medical case, must adapt to this other routine: tests, medicines, care. The patient is then treated, being the responsibility

of “third parties”, that is, people responsible for its life inside the hospital. In addition to the everyday facts of life in a hospital, the patient, due to its condition, departs from reality and its previous routine. This routine partly organizes its reality and reaffirms every moment the notion of oneself to the extent that the patient performs its duties, lives with its friends and with its families. It is observed that the patient departs from its reality and, as a consequence, dismantles (and this depends largely on the patient’s mental health) its personality as a whole. The person comes to the conclusion that the hospital care leads almost all patients to regression, helplessness and a dependent level of adaptation. The most adaptive solution for the hospitalized patient is to maintain a proper balance between the regression in the service of adaptation and the continuous efforts to command it (Mackinnon, Michels, & Buckley, 2008).

Whatever its mental condition may be, the patient suffers as a result from hospital stay and especially the condition of dependency involved; it is a certain regression that provides, more precisely, an experience of re-editing psychic conflicts. Many of these conflicts are related to the way the story of its Ego was formed and, in general, a blow to its narcissism is observed, especially when the patient has cysticercosis. Diseases, as stated by Jeammet et al. (2000), almost always equals suffering, body attack and limitation of physical possibilities; in some cases disability. This is because it is an attack on the patient’s integrity and an impediment to the normal course of its life.

The control of impulses coming from inside the body and from environmental stimuli that affect the psychic apparatus, the control of movements and the discharge or postponement of exciting situations in the outside world are among the many functions of the ego. The ego is driven by the reality principle, which grants adaptation and manages instinctual demands (Laplanche & Pontalis, 1983).

Without the need to think any deeper and accurately, we see that cysticercosis directly affects the ego, weakening it in its structure, deeply weakening the functioning of its functions, including its defense repertoire. This fragile ego may in many cases use extreme measures, leading it to a desperate fragmentation, which will be clearly noted in the failure of performing duties, which is explained by the failure of apprehending reality, spatial disorientation, temporal confusion, processes of thought, little control of aggressive impulses and development of a psychosis with the presence of delusions and hallucinations (Mackinnon, Michels, & Buckley, 2008).

To some extent, it can be stated that such psychic manifestations are related not only to the organic commitment itself, that is, the consequences of cysticercosis, but to psychic “reactions” as a consequence of the damage caused to the ego psychic instance, because it is basically the projection of the body surface. The personal and subjective meaning that the disease awakens seems to be the key factor. It is modulated by personality characteristics, by social circumstances and by the very nature of the condition and its treatment (Botega, 2007).

Mezan (1998) emphasizes the fact that symptoms have a different meaning for psychoanalysis than for Medicine. Medicine perceives the symptom as a factor of health disruption. The task of the physician is to attack causes. However, for that, the patient does not have to do more than to follow recommendations: the patient is not considered as the subject of its evil, but as its victim. The physician must alleviate symptoms as much as possible. The psychotherapist does not have the same task. It has another task: create and maintain the conditions of the psychotherapeutic situation so that the patient, at its own pace and with its own characteristics, is able to think freely about its personal questions, for example, what made it sick. It is common that within the strict conditions of a psychotherapeutic modality, certain symptoms disappear or reduce intensity. In general, as clinical experience shows, this occurs silently and unobtrusively as a consequence and not as the objective of a complex process of self-knowledge and transformation.

Freud (1996a), referring to aphasia, warns that the chain of physiological processes in the nervous system is not in a causal relationship with psychic processes. Physiological processes do not stop when the psychic processes start. On the contrary, the physiological chain continues. However, from a determined moment, a psychic phenomenon corresponds to each element of the chain (or to each element separately). Thus, the psychic is a process parallel to a physiological process (the “dependent concomitant”).

Obviously, it is irresponsible to believe that organic commitments do not directly affect the psyche, especially when the Central Nervous System is affected. In it, mental functions deteriorate with the worsening of the disease and may improve when the clinical drug treatment is successful. Ultimately, the old division body-mind, even if when intending to be didactic, does not hold because the psyche is also the body, it is the culture, a space that goes beyond the subject itself (Aricó, 1998).

What has been tried to be covered in this brief study is the fact that cysticercosis is not restricted to its characteristic symptoms, but involves the whole subjectivity. The ego, as already noted above, is a surface projec-

tion and, exactly because it is a projection, is not restricted to that surface because the projection changes and may be too distant from what was originally projected.

This evidence, not simple to be understood, is introduced in our discussion to address another need: outlining a dimension of the patient with cysticercosis in its various forms. This exceeds the limits of the disease to include, if one may so speak, the psychic dimension, which is often eclipsed by mechanistic formulations. Ultimately, the suffering of a person does not place its reality only in the anonymous body space, but in a different space, the space of the person's relationships with its inner world and with all the aspects of its life (Raimbault, 1985).

It must be remembered that this psychological dimension was in fact introduced by Freud (1996b), especially when he warns that lesions in hysterical paralyzes are completely independent from the anatomy of the nervous system because hysteria, in paralyzes and other manifestations, behaves as though anatomy did not exist or as if the person had no knowledge of it.

Most importantly, it is worth remembering that the ego, the id and the superego do not occupy a specific space in the brain or in the CNS. They do not correspond to brain divisions and are not contained in the lobes. They depend on the brain for its existence. They are, to use an expression by Freud (1996c), its "dependent concomitant"; otherwise, without a doubt, science would have to be put aside, giving space to magical beliefs, which is not the objective of this study. However, when the dimension of human subjectivity is emphasized, research on the multiple senses existing in the experience of the disease is thus justified.

Regarding aspects observed for cysticercosis, it is possible to say that it is a result of general hygienic conditions under which the person lives, procedures, care and hygienic habits. These care and habits were somehow overlooked and the infestation by cysticercosis occurred with the respective development of the disease. Thus, the "pig disease", an animal linked to dirt, becomes part of the person. As a result, the patient, however little educated it may be, begins to judge itself in function of inner values. Much more serious than that, the patient measures itself from the point of view of a whole culture in which it is inserted (Sacks, 2000).

Thus, it is possible to understand the overwhelming, paralyzing attack suffered by the patient, leading to a serious lowering of its self-esteem, being ashamed of who the patient is and hiding its history, running away or not believing in treatment because it does not feel worthy, often rebelling against the team responsible for its medical care. In fact, by the very way the behavior is expressed by the patient, one can think of true auto-attacks, auto-punishments, since only the patient would be hindered.

It also explains the need for the patient to seek an external reference for its suffering, both for its rebellious behavior (it does not comply with hospital routine) and by the refusal to recover, to take the appropriate medication at prescribed times or by its complainant attitudes. According to the patient's thinking, the doctor is wrong, the team does not treat it with due consideration, the nutritionist is a problem, the relatives are wrong because they do not visit, the psychologist is an enemy because it comes to pry the patient's life etc. It must be remembered that, in order to prevent depression, the patient may project in the exterior life the cause of its misfortunes: people want to hurt it, take poor care of it, and certainly the treatment is the responsible for its disorders (Jeamet et al., 2000).

The ego is not only accused, attacked by the care that was not auto-administered and that the disease could be avoided, but for other reasons, as if from the infestation, from the disease, the doors were opened so that all the patient's failures were exposed. Consequently, the embarrassed attitude often seen in patients with cysticercosis is not only because of the circumstances of the disease. It goes further and far beyond its hygienic history to reach many aspects of its life, which have nothing related to the disease itself.

Another aspect that we may observe in some patients with cysticercosis is that even when they are treated and recovered, able to follow their life routine, they find themselves unable and unfit to do anything, as if they were to contaminate things and people, "ruin" everything, keeping themselves in a real siege much more propitious to pigs than to humans. The impact of the disease may immobilize and freeze the patient's existence and, as a consequence, its relationship with the world (Botega, 2007).

5. Conclusion

For the psychologist in the hospital, it is worth noting that the patient is not restricted to its illness. It has a psyche that goes beyond the scope of the causes of its illness.

Perhaps one of the objectives of Psychology is to rescue the patient from the siege of things and open it to other possibilities beyond the narrow view of the illness to obtain new representations of itself and its reality,

thus jumping from the universe of exclusive representations of being sick to consider another dimension of the human self and other qualities of the potentials of its personality.

It is a consensus among many authors that the control of Neurocysticercosis requires attention to hygiene in pig breeding (prevention of taeniasis) and sanitation (prevention of eating eggs and the infestation of pigs). Such measures are effective to limit cases of taeniasis and cysticercosis in developed countries. On the other hand, in countries such as Brazil, an adequate infrastructure has not yet been made for the implementation and control of such hygienic measures with continued educational practices directed at the population.

Because of the clinical and social importance of cysticercosis, it is necessary to point out that studies on this disease seeking to discuss it in its various aspects will always be welcome to the well-being and the health of people. This justifies this study.

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