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Response to Letter to the Editor

Neurotuberculosis at the time of Anna O.: life prospects

Dear Editor,

To this day, the most elementary account of psychoanalysis begins with the story of Anna O., pseudonym used for Bertha Pappenheim (1859–1936), whose numerous hysterical symptoms were treated by the Austrian physician Joseph Breuer (1842–1925).

Between 1880 and 1882 (she was 21–23 years-old at the time), she had been treated by the Austrian physician Joseph Breuer for nervous symptoms that appeared when her father became ill and died of tuberculosis (TB): severe cough, paralysis of the extremities on the right side of her body, disturbances of vision, hearing, and speech (ungrammatical jargon made of almost five languages), hallucinations (recurrent vision of black snakes), episode of hydrophobia, and short loss of consciousness.

On the basis of the symptoms and the family context, Charlier et al. propose an organic diagnosis for the illness of B. Pappenheim, instead of a functional diagnosis: in this case, slowly evolving brain lesions infectious type in left Sylvian topography due to meningitis and/or tuberculous encephalitis with partial temporal epileptic component [1].

1. How many chances to heal from neurotuberculosis at the time of Anna O.?

TB can involve any organ system in the body. Extrapulmonary involvement can occur in isolation or along with a pulmonary focus as in the case of patients with disseminated tuberculosis. Tuberculosis meningitis (TBM) is the most severe form of extrapulmonary tuberculosis. TBM a medical emergency, is still a major cause of serious illness in many parts of the world. TBM remains difficult to diagnose, and it is usually due to hematogenous dissemination of the tubercle bacillus. The exact incidence and prevalence are not known. The clinical spectrum is broad and may be non-specific making early diagnosis difficult.

Tuberculosis has claimed its victims throughout much of known human history. It reached epidemic proportions in Europe and North America during the 18th and 19th centuries, earning the sobriquet, “Captain Among these Men of Death.” [2]

Before the advent of chemotherapy, tuberculosis was one of the major causes of death in both Western and also several non-Western countries. Effective chemotherapy for tuberculosis has been available since the 1950s (isoniazid was introduced in 1952, the less effective para-aminosalicylic acid and streptomycin slightly earlier) [3].

In the late 19th and early 20th centuries there were mainly two therapeutic strategies adopted.

The first was surgical collapse procedures which were widely used in the management of cavitary tuberculosis. Cavity closure, hopefully with sterilization of sputum, was the usual goal of this therapy.

The second was stay in sanatorium. The rationale for sanatoria in the pre-antibiotic era was that a regimen of rest and good nutrition in favorable weather conditions offered the best chance that the sufferer's immune system would “wall off “pockets of pulmonary TB infection.

Anna O. remains in the sanatorium of Bellevue (Kreuzlingen, Switzerland) from 1883 to 1887. Charlier reports an improvement in Anna O's health during high-altitude stays and this seems to confirm his hypothesis.

Whether sanatorium care changed the ultimate outcome for diseased persons is not clear. Many study that compared patients treated at home with those treated in sanatoria A careful and statistically sophisticated review of experience at New York State sanatoria similarly found that patients with minimal disease did well; those with far advanced disease did not [4]. Overall the cure rate in New York sanatoria did not differ greatly from the spontaneous cure rates summarized by Grzybowski and Enarson [5].

Tiemersma et al. reviewed the natural history of untreated pulmonary tuberculosis studies in the pre-chemotherapy era. Untreated smear-positive tuberculosis among HIV negative individuals has a 10-year case fatality reported a weighted mean of 70%. Ten-year case fatality of culture-positive smear-negative tuberculosis was nowhere reported directly but can be indirectly estimated to be approximately 20%. The duration of tuberculosis from onset to cure or death is approximately 3 years and appears to be similar for smear-positive and smear-negative tuberculosis [3].

In literature there are no studies on the natural history of CNS tuberculosis or CNS tuberulosis prognosis at the time of Anna O.

A.Cherian in a review claims that the single most important determinant of outcome, for both survival and sequelae, is the stage of tuberculous meningitis at which treatment has been started. If treatment is started in stage of Anna O. symptoms almost 50% of patients die, and those who recover may have some form of neurological deficit [6]. About 20% to 30% of survivors manifest a variety of neurological sequelae, the most important of which are mental retardation, psychiatric disorders, seizures, blindness, deafness, ophthalmoplegia and hemiparesis. Endocrinopathies may become evident months or year after recovery. The endocrinopathies are most probably due to progressive damage of either the hypothalamus itself or adjacent basal cisterns [7].

Neurotuberculosis is an extremely disabling and progressive disease that causes death or neurological sequelae in a short time if it is not timely treated with antibiotic therapy.

Anna O. after illness had a normal life for a long time and she dies over 50 years after the onset of symptoms.

For these reasons we consider unlikely the hypotheses proposed by the author, even if the chance of an organic diagnosis subsists.

A paleopathological study [8], combined with an archival assessment at the Bellevue sanatorium, on the remains of Bertha Pappenheim could finally lead to a conclusion on the matter.

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References

[1] P. Charlier, S. Deo, The Anna O. mystery: hysteria or neuro-tuberculosis? J. Neurol. Sci. 381 (2017) 19.
[2] T.M. Daniel, The history of tuberculosis, Respir. Med. (2006) 1862–1870 100.11.
[3] E.W. Tiemersma, et al., Natural history of tuberculosis: duration and fatality of untreated pulmonary tuberculosis in HIV negative patients: a systematic review, PLoS One 6 (4) (2011) e17601.
[4] D.W. Alling, E.B. Bosworth, The after-history of pulmonary tuberculosis. VI. The first fifteen years following diagnosis, Am. Rev. Respir. Dis. 81 (1960) 839–849.
[5] S. Grzybowski, D.A. Enarson, The fate of cases of pulmonary tuberculosis under various treatment programmes, Bull Int Union Against Tuberc 53 (1978) 70–75.
[6] A. Cherian, S.V. Thomas, Central nervous system tuberculosis, Afr. Health Sci. 11.1 (2011) (2011) 116–127 Mar.
[7] R.K. Garg, Tuberculosis of the central nervous system, in: H. Morris (Ed.), Neurology Update: Reviews for Continuing Professional Development, CRC Press, 2016, pp. 97–116.
[8] A.R. Zink, W. Grabner, A.G. Nerlich, Molecular identification of human tuberculosis in recent and historic bone tissue samples: the role of molecular techniques for the study of historic tuberculosis, Am. J. Phys. Anthropol. 126.1 (2005) 32–47 Jan.

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