

Research Article

History of Neurology and Psychiatry: Sewing Machine, Tabes Dorsalis, and Ovarian Hysteria

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Abstract. Hysteria was the Sphinx of nervous disorders. In ancient times the cause of hysteria was supposed to be sited in the womb. However the French Neurologist Jean-Martin Charcot favoured the ovaries as the site of the origin of hysteria, and he recommended the therapeutic compression of the ovaries in order to terminate hysterical fits. To this end, the treatment of hysteria in women was carried out by the surgical removal of one ovary. This surgical intervention was not without risk in the 19th century, but more to the point it did not help the patients. Most German Neurologists doubted this “hysterical ovary” theory, but it was not until after 1901 that Steinhausen was able to prove by statistical analysis, that the “hysterical” ovary did not exist at all. Statistical data analysis also helped to support the connection between Syphilis and Tabes dorsalis, which usually became clinically manifest several years after infection. In those days neither cerebrospinal fluid analysis nor serology were available. Apart from several nonspecific suspected causes of Tabes - it was the use of the newly invented sewing machine that came under suspicion as the trigger of Tabes dorsalis.

Keywords: Hysteria, ovary, syphilis, sewing machine, tabes dorsalis

1. Introduction

In former times the causes of various—otherwise non-classified—neurological disorders were suspected to lie in the lower abdomen. The French Neurologist Jean-Martin Charcot favoured the ovary as the site of origin of hysteria, and he recommended therapeutic compression of the ovary to terminate hysterical fits. Masturbation was believed to cause Tabes dorsalis in men [4], and in women the machine sewing was suspected to trigger Tabes due to the jiggling movements of the feet and lower abdomen. Since its successful invention by the Pfaff/Singer company (Kaiserslautern, Germany) in the 1870's, using the sewing machine had become an important contribution towards female emancipation. Now

many women were able to use a machine, which most men could not operate. Furthermore, women now found themselves in the position of being able to make their clothing themselves, to participate in fashion, and even to earn their own money, thus becoming, at least partially, socially and financially independent.

At a time when there was no serological Syphilis test and no cerebrospinal fluid (CSF) investigation it was the ‘quantifiers’ who were able to prove the correlation between Syphilis infection and Tabes dorsalis with the help of statistical analysis. However they could not prove a causal relationship before the *Treponema Pallidum* had been discovered (see time scale of discoveries).

2. The “hysteric ovary”

The word hysteria is derived from the Greek word “Hystera,” meaning the womb. In later years the ovaries were suspected of causing hysteria. Charcot (Paris) described the ovarian hysteria (p. 193 in [3]). He also described an “**ovary sign**,” an area of hypersensitivity over the region of the ovary (lateral lower abdomen, either right or left), and he insisted on its diagnostic significance (p. 190 [3]). By exerting pressure on the ovarian region a hystero-epileptic attack could be triggered as well as terminated. Even in 1905 the German Psychiatrist Emil Kraepelin described in his textbook how local pain followed by a hystero-epileptic attack could be elicited by pressure at the hypersensitive ovarian region (p. 267 [5]). According to Charcot the surgical removal of the ovary was a rational treatment of hysteria (p. 207 [3]). Ovarectomy did however not cure hysteria [10].

The doctrine of the “hysteric ovary” was doubted by some German neurologists, and Arndt described that ovaralgia was seen in male hysteria as well [10]. Other physicians showed that the ovaries were not influenced by the method described by Charcot. Also Gowers (London) described that hypersensitivity in the lower abdomen was sometimes seen in non-hysteric females [10]. In 1901 Steinhausen showed that in a systematic investigation of 500 healthy young men (soldiers), there was no basis to the theory of the “hysteric ovary” [10]. He was able to prove that pressure at the lateral lower abdomen in healthy young men could evoke symptoms both in a comparable frequency and manifestation as in women. In conclusion he wrote that if the constancy and severity of symptoms are taken into account, as well as their frequency, in 88% of otherwise completely healthy young men it can be demonstrated that this is a purely physiological phenomenon. In conclusion this type of “ovary” has no relationship to hysteria. He interpreted the phenomena of the termination of hysteric attacks due to pressure at the lateral lower abdomen as being a purely suggestive effect [10]. Consequently he concluded that it was highly likely that the unfortunate women (“*femmes ovariennes*” in Paris) would remain hysteric—even without their ovaries. Some years later Manfred Bleuler wrote in his textbook of psychiatry, “the formerly famous ovary is likely to be the result of psychiatrists’ imagination” (p. 376 [1]). Several scientists have worried about the psychodynamic emergence of hysteric symptoms. Nowadays the topic of hysteria has disappeared from modern diagnostic psychiatry.

3. *Tabes dorsalis*

For a long time it was a matter of discussion as to whether *Tabes dorsalis* was caused by Syphilis, since it became manifest several years after the first manifestation of Syphilis. That is why Virchow had suggested, on 6th July 1898 at the “*Berliner medicinischen Gesellschaft*,” that it was pointless to investigate the frequency of Syphilis in the case history

of patients suffering from *Tabes*, because this would not prove a causal correlation. What should be looked at was the frequency of *Tabes* in cases with “constitutional” Syphilis, meaning cases with amyloid degeneration of internal organs [2]. Several possible causes of *Tabes* were discussed. In 1898 Kron wrote about *Tabes* in female patients, mentioning the possibility of non-syphilitic causes [6]. Of the 41 women investigated 24 had been dressmakers. Anamnestically 23 of the 41 had had a proven or likely Syphilis (56%). At this time there were no serologic tests available. Amongst the other possible causes of *Tabes* **sustained machine sewing usage** over a longer period of time was discovered in 8 cases. Using a sewing machine had already been described as a cause of *Tabes* [6]. The author suspected that the on-going vibrations of the legs and the lower body could well cause alterations of the spinal cord. After all Decaisne had found 68 of 335 women who had mentioned sexual irritation whilst using the sewing machine [6]. It is not described how this survey was carried out. The only drawback to the argument was that only a few of the many sewing machinists developed *Tabes dorsalis* [6]. No data were provided with regard to the frequency of sewing machine usage in the female population at this time.

Leimbach investigated the clinical symptoms of *Tabes dorsalis* in 400 cases at Erb’s private practice in Heidelberg [8]. Goldflam, a leading neurologist from Warsaw, discussed both theories of the cause of *Tabes*: Syphilis (favoured by Fournier, Erb, Strümpel), and various other causes mentioned by Charcot [4]. He concluded that Syphilis was most likely to be responsible for the emergence of *Tabes*. The causal correlation of these two diseases had first been claimed by Fournier (Paris). Erb also dealt at length with the question of whether Syphilis infection was the cause of *Tabes*. Also Erb was the first to prove statistically a correlation between both disorders. He became more and more convinced of the hypothesis of Fournier [11]. At the international congress in London in 1891, Erb had shown that more than 90% of *Tabes* patients had had a previous Syphilis infection (p. 259 in [3]). Therefore both Fournier and Erb had set up the scientific doctrine of *Tabes* being a metaluetic disease [2]. Dinkler analysed 37 cases of *Tabes* in the city of Aachen (Germany). 23% had been immigrants into Aachen, and 77% were native inhabitants. 34 of the 37 *Tabes* cases (92%) had had a sincere Syphilis infection. The author’s interpretation was that the frequency of prior Syphilis infection was compatible with data from other cities such as Heidelberg, Leipzig and Berlin, thus confirming Syphilis infection as the cause of *Tabes dorsalis* [2].

Sidney Kuh from Chicago [7] worked with Erb in Heidelberg. He described Syphilis as the causal disease of *Tabes* and investigated the latency from the primary manifestation to *Tabes dorsalis*. Tumpowski (Warsaw, at the department of Goldflam) investigated 257 cases [12]. He also believed that Syphilis was aetiologically responsible for *Tabes*. The latency between the first signs of Syphilis and the manifestation of *Tabes dorsalis* was between 5 and 20

years. The causal relationship could not be proved, because a “specific syphilitic poison”—acting after an interval as long as this was not known [12].

4. Conclusion

Nowadays neither the ovary nor the sewing machine plays a role in the pathogenesis of psychiatric and neurologic disorders. However, Syphilis as well as Tabes dorsalis still exists. Also the therapists still deal with psychodynamic disturbances. Even in present days subjective symptoms have to be interpreted with grate caution.

5. Time scale of discoveries

Investigation of cerebrospinal fluid invented 1897 [9]. Treponema pallidum, microscopic proof, Fritz Schaudin and Erich Hoffmann 1905. Syphilis-serology 1906 [13]. First efficient treatment of Syphilis invented, Malaria-therapy, Julius Wagner Ritter von Jauregg 1917 (Nobel prize for medicine 1927)

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