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The contribution of Philippe Ricord (1800-1889) in the diagnosis and treatment of gonorrhea

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SUMMARY

Philippe Ricord was a French physician who made significant contributions to the field of venereal diseases, particularly syphilis and gonorrhea, during the 19th century. He is known for his work in distinguishing between the two diseases, which were often confused due to their similar symptoms. Although his opinion on the etiology of gonorrhea turned out to be wrong, his contribution to its treatment was significant. The humorous way he conveyed his instructions, as well as its treatment, was challenging. Nevertheless, his work laid the foundations for the discovery of its cause and the appropriate treatment of gonorrhea in the future.

Keywords: Syphilis, coarctotome instrument, unitary venereal diseases, Paracelsus, Monist theory.

INTRODUCTION

In the modern era, it is widely known that many bacteria, viruses, protozoa, fungi and parasites can be transmitted through sexual contact. These factors can cause lesions, either local or extended, inflammation, infertility and even cancer. The diseases caused from these factors are categorized as Sexually Transmitted Diseases-STD's or Sexually Transmitted Infections-STI's, which have been known since ancient times [1]. For their treatment, doctors relied mainly on their experience and on the techniques that had been established over the centuries [2]. However, in the late 19th and early 20th centuries, the identification of pathogens and the use of laboratory methods changed the way these diseases were treated. Among the pioneers who demonstrated a significant clinical and scientific work, enhancing the development of dermatology in Europe, was Philippe Ricord (1800-1889) [3] (Figure 1). Born in Baltimore, Maryland (USA), he moved to France at the age of 20, as an intern at the Hospital du Val-de-Grâce. He then worked with the French surgeon, Guillaume Dupuytren, at the Hôtel-Dieu hospital, from which he was dismissed following a disagreement. As a result, he completed his studies at l'Hôpital de la Pitie, where he received his doctorate in 1826 [4, 5]. Although he did not have a specific workplace for a few years, he applied for the venereal disease hospital Hôpital du Midi, despite having no relevant expertise. He worked at the hospital for at least 30 years [6].

However, his contribution to the diagnosis and treatment of STD's, mainly syphilis and gonorrhea, has been a milestone for their prevention and treatment.

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Figure 1 - Philippe Ricord. Lithograph by J.B.A. Lafosse, 1865, after P. Petit. Wellcome Collection. Source: Wellcome Collection.

GONORRHEA DIAGNOSIS THROUGHOUT THE TRANSITION FROM UNICISM TO DUALISM

The interconnection between syphilis and gonorrhoea into a unitary venereal disease prevailed for almost four centuries, till the first half of the 19th century [7]. The entire venereal patho-physiology seemed to arise from a single cause. This perception is found typically in Paracelsus' approach, where syphilis is mentioned as "french gonorrhea" [8, 9]. The main proponent of the Monist (Unicist) theory appears to be John Hunter (1728-1793) with his historic "unfortunate" experimentations (1767) having led him to the conclusion that these two genital diseases share the same nature [10, 11].

Before highlighting Ricord's involvement into the nosographic distinction of the aforementioned entities, it should be underlined that the monolithic predominance of Monism nearly led up to the emergence of degenerative theories or sophistries (Strasbourg, 1811) that went all the way up to contesting the very existence of syphilis itself [12].

Ricord classified venereal diseases, particularly syphilis, into three distinct phases: early or primary (syphilitic ulcer-chancre), secondary (between the 3rd week and sixth month after the onset of syphilitic ulcer), and tertiary (six months after the onset of syphilitic ulcer and congenital syphilis) [13]. His classification was based on the progression of symptoms and clinical manifestations observed in patients with syphilis. This division is characterized as classical as it remains to these days. It resulted in the distinction between gonorrhea and syphilis, as two different diseases, having their own pathogenesis and specific characteristics [13]. Thus, Ricord's greatest contribution to the etio-pathogenesis of gonorrhea consists in the consolidation of the dualist theory, causing the declassification of gonorrhea as a potentially syphiligenic morbid condition [13]. Based on the results of Benjamin Bell's (1749-1806) and Jean-François Hernandez's (1769-1835) prior studies, Ricord moved further and pointed out Hunter's error about the gonorrhoeic-purulent-matter-based inoculations having ended up with the appearance of indurated syphilitic ulcers [11, 14, 15]. In these cases, he suggested that the arisen hunterian sores on the inoculated person should have been provoked by an underlying, invisible primary syphilis of intrameatal (or uterovaginal) location yielding the donor's initial inoculum highly contagious for syphilis [11, 13, 16]. His main argument was that the syphilitic ulcer-chancre could occur through inoculation, while gonorrhea could not. Although these findings were important, they could not be precisely proven because there was no control in healthy populations, which Ricord considered unscientific. In particular, he argued that inoculation in healthy populations should be rejected by doctors in any case [13, 16]. Besides, such a potential (hidden) localization of a chancre is what a physician is asked to examine using Ricord's vaginal speculum.

A second dualism developed by Ricord is between the typical indurated "hunterian" ulcer and the soft one (called chancroid). He separated the differential clinical aspect and the evolution of these two sores: the suppurative inguinal lymphadenitis on chancroid and the secondary lesions as well

as the potential multiple systemic manifestations - imposing a mercury treatment - on syphilitic chancre [17]. However, concerning the nature of these two ulcers, Ricord believed in the causality of a single syphilitic "virus" [17]. He will take long to approve the real etiological dualism on the cause of chancroid and indurated chancre, a theory developed initially on 1852 by his student Léon Bassereau (1810-1887), followed by Joseph Rollet (1824-1894) [18].

To conclude with Ricord's pioneer work on the distinction between gonorrhea and syphilis, against the atherosclerotic Monism framework, the example of one of his contemporaries is cited. Viennese fervent antimerculiast syphilidologist Dr. Josef Hermann (1817-1902), even after 50 years of Ricord's studies, continued insisting on the unicist conception, according to which, gonorrhea and chancre constitute two different forms of primary syphilis. Besides, Hermann had always claimed that venereal disease (either gonorrhea or syphilis) exists only as a locoregional genital disease and never evolutes into a "constitutional" syphilis, i.e. implicating extra-genital or extra-cutaneous manifestations.

His open-mindedness together with his reputation as a "good teacher" made Ricord's lessons popular because he conveyed them in an understandable and humorous way. He used examples from hospital cases and his personal experience. More specifically, he set as an example for identifying people with gonorrhea, choosing blonde women with white skin, while giving instructions on how to spend an evening with them. The next day he recommended a hot bath and hoped they didn't have gonorrhea [19]. These guidelines challenged the subsequent diagnosis of gonorrhea.

Ricord was particularly concerned with the transmission of gonorrhea, looking for its causes and symptoms. He argued that gonorrhea could prevail under the influence of all those conditions, usually seen in inflammatory secretions. However, the determination of the exact causes could not be based solely on the patient's symptomatology. In addition, he supported the idea that the production of simple secretions, in the absence of a specific microbe, becomes sufficient to reduce the range of transmission. Similarly, the observation of production of white secretions in women was not always a sign of gonorrhea. The same woman who had white secretion for a short or longer period of time, could possibly transmit gonorrhea to the man she lived with. In many cases, women transmitted gonorrhea without having symptoms [16].

TREATMENT OF GONORRHEA

Despite the erroneous point of view about the etiology of gonorrhea, Ricord's contribution to its study and treatment is considered important. He acknowledged the fact that its treatment was challenging. The usual recommendations included the avoidance of any irrigation and taking hot baths, at the same time as consuming soothing and alkaline drinks. For local treatment he suggested placing in the urethra a mixture of zinc sulphate, lead crystalline acetate, opium, acacia tincture and distilled water [20].

The use of catheters (conical or cylindrical, flexible, soft or solid) was often used to investigate urethral shrinkage [21]. Ricord divided the bulges in the urethra into spasmodic and organic [21]. Specifically, he used the term spasmodic to describe conditions in which the urethral muscles experienced temporary contractions or spasms, leading to a narrowing of the urethra; the term organic was used to refer to conditions where there were actual structural changes or abnormalities in the urethra. These were subdivided into changes in the surface of the mucosa that was part of sometimes old ulcerations (urethral polyps) or sometimes was in-depth changes (actual bulges). He insisted on focusing in the treatment of inflammatory stenosis with ointments or solvent infusions, but acknowledged the large amount of inflammation as the main cause of dilation [21]. The dilation could be sudden, rapid or gradual (brusque, rapide, graduelle), with the placement of the catheter being temporary, if its insertion was neither too difficult nor too painful [21]. Following the above, Ricord invented his own elastic, rubber catheter, coated at both ends with metal reinforcements (Porte caustique de Ricord), facilitating the entry of a swab into the urethra for cauterization [21].

Ricord continued his effort, perfecting the puncture procedure of the dilation and clarifying how to decongest it. For this purpose, he used his invention, the coarctotome instrument (Coarctotome urétral de Ricord), through which he broke down the dilation. To insert the instrument, the level of stenosis had to be first identified and then properly fixed to an appropriate spot. By pushing the

blade, the doctor reached the spot and performed his intervention without risk of injuring the urethra [21]. Ricord believed, along with other scientists, that the use of bulky catheters weakened the healthy urethra and therefore recommended that dilation be performed only at the exact point of stenosis [21]. Moreover, using a mirror, the discovery of the characteristic ulceration of syphilis, even in the cervix, led Ricord to separate syphilis from gonorrhea [22].

CONCLUSION

Ricord was one of the most charismatic men of the 19th century and was regarded as the "Voltaire of pelvic literature". He considered himself a surgeon, but his reputation as a venereologist was widespread. Ricord holds a prominent place in the history of medicine for his description of syphilis and thorough examination of patients' skin and mucous membranes. Although he could not fully understand the etiology of gonorrhea, he argued that syphilis and gonorrhea are two different diseases. Several years later, in 1879, Albert Neisser pointed out the constant presence of pyorrhea in gonorrhea and named the observing diplococcus as "gonococcus". This discovery was the starting point of a new era.

Conflict of interests
None do declare.

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