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Some historical reflections on the ageing male

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Abstract Throughout the early history of medicine, discourses on the “ageing male” can be found, although most authors addressed the aspect of old age rather than the early onset and beginnings of this period of life. With reference to the typical climacteric changes in women, the term “climacteric disease” in males was coined by H. Halford in 1813 and finally reintroduced into modern medical terminology in the 1930s by A. A. Werner. In between, several authors have described this clinical entity, often called “climacterium virile”, by considering hormonal and neurological changes to be the underlying causes. All these early writings should be of certain interest to those who are dealing with modern aspects of the ageing male and are reflected in this article.

Keywords Ageing male · Andropause · Climacteric · History of medicine · Urology · Andrology

Introduction to terminology

Over the last years, the “ageing male” has emerged as a new field of interest among urologists and other medical specialties. This was accompanied by a partly confusing terminology and different definitions of this medical entity. A comparison of the male situation with the female menopause initially led to the term “andropause”, which was first introduced at the 5th Forum International d’Andrologie held in Paris in 1987. As

andropause implies several misunderstandings, “ageing male” has now been widely accepted as the most adequate and general description.

Although the historical term “male climacteric” is today best known through the works of August A. Werner from the 1930s [34], it had already been used and described adequately with the same symptoms by Henry Halford in 1813 as the “climacteric disease” [11]. The equivalent French term “retour d’âge de l’homme” was used by Maurice de Fleury in 1909 [8] and the German equivalent “Wechseljahre des Mannes”, as well as the Latin version “Climacterium virile” by Kurt Mendel and other authors since 1910 [15, 21, 22].

With respect to male sexual dysfunction, the lay press coined the word “penopause”. This special aspect of the ageing male was also unsuccessfully approached with the term “presbyrectia” by Helen Kaplan in 1989 [18].

In the age of acronyms, additional terms like “PADAM” (partial androgen deficiency of the ageing male), “ADAM” (androgen deficiency of the ageing male) or “PEDAM” (partial endocrine deficiency of the ageing male) try to combine the clinical symptomatology with the suspected etiology of the problem.

“Ageism” was introduced about 30 years ago with the negative meaning of systematic stereotyping of old people or even discrimination against them because of their age [3, 6].

This article will trace back the roots of how the medical community was occupied with the problem of the ageing male throughout history, and it will become apparent that medicine from ancient times until the 19th and early 20th centuries has dealt extensively with this problem. Thus, history is repeating itself in many ways and everybody is invited to go back to the old references and reread history in order not to run the risk of rewriting it!

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The ageing male through the ages

If we reflect on this special period of a man’s life, nowadays called “ageing male”, through the eye of history

we have to be aware of the many other terms that have been used to mainly address the problem of old age [24, 25, 27]. Perhaps the most brilliant writing from ancient literature on this aspect is “De senectute” by Cicero [17, 24]: “Every age is painful to those who have no means in themselves for living well and gladly. But those who can find in themselves every good cannot consider as a damage any event caused by natural necessity: Advanced age (senectus) is just one of the most important among the natural events. But human stupidity is so foolish and absurd, that everyone hopes to reach it, and when they do, they blame it!” It is important to know that reaching old age was either called “senectus” or “senium” by the Romans. The first, as used by Cicero, corresponds to “advanced age” in the positive sense of still-lasting intellectual and physical vigour; the second means “senility” with a loss of these two capacities.

One has to differentiate carefully between those passages that are related to gerontology rather than to the early onset of the ageing process. “Ageing” or “aging” is a rather new term that does not appear earlier than the 19th century and from then on it was used with a meaning that is similar to what is used today [6]. Aphorisms like Shakespeare’s “Age is as a lusty winter frostily, but kindly” from the play *As You Like It*, rather, address the “aged” than the ageing male and are, therefore, not exactly the topic of this article, which can better be presented by Solon’s aphorism: “I get aged always learning a lot of things”.

Another aspect to consider is the different life expectancy [20] and the question of who was actually considered old throughout the ages [7]. It is enough to remember that at the time of Caesar and Cicero, a 60-year-old man was a “senex” and, therefore, a Roman began “ageing” at the ages of 40–50! When Guido da Vigevano wrote the “Liber conservacionis sanitatis senis” (A book about preserving the health of an aged male) for Philip VI of Valois in 1335, the King was only 42 years old, but he was considered not only to be ageing but also an aged male by his court doctor [26].

Modern medicine and the ageing male

The earliest contribution of modern medicine to the understanding of the clinical features of a disorder related to the beginning of ageing was the article “On the climacteric disease” by Sir Henry Halford, which was read at the Royal College of Physicians in London in 1813 [11]: “...I will venture to question, whether it be not, in truth, a disease rather than a mere declension of strength and decay of the natural powers.” He seems to be the first to connect the term climacteric with the symptoms observed in some men between the ages of 50 and 75: “Sometimes the disorder comes on so gradually and insensibly, that the patient is hardly aware of its commencement. He perceives that he is sooner tired than usual, and that he is thinner than he was; but yet he has nothing material to complain of. In process of time

his appetite becomes seriously impaired: his nights are sleepless, or if he gets sleep, he is not refreshed by it. His face becomes visibly extenuated, or perhaps acquires a bloated look. His tongue is white, and he suspects that he has fever.” Halford pointed out that this disease had been overlooked so far: “We find it generally complicated with other complaints, assuming their character, and accompanying them in their course, and perhaps this may be the reason why we do not find the climacteric disease described in books of nosology as a distinct and particular distemper.” Concerning the aetiology of this climacteric disease, he drew no connection to the testes: “It is not very improbable that this important change in the condition of the constitution is connected with a deficiency in the energy of the brain itself, and an irregular supply of the nervous influence to the heart.” The therapeutic options were rather limited: “In fact, I have nothing to offer with confidence, in that view, beyond a caution that the symptoms of the disease be not met by too active a treatment.” And, after suggesting “local evacuations” and “warm purgatives”, Halford came to the conclusion: “For the rest, ‘the patient must minister to himself’. To be able to contemplate with complacency either issue of a disorder which the great Author of our being may, in his kindness, have intended as a warning to us to prepare for a better existence, is of prodigious advantage to recovery, as well as to comfort, and the retrospect of a well-spent life is a cordial of infinitely more efficacy than all the resources of the medical art.”

For unknown reasons, the term climacteric was not used again in relation to the ageing male for more than 100 years, although the problem in general was discussed by other scientists, as demonstrated, for example, in the studies of Charles Edouard Brown-Séquard, which will be dealt with later [2].

The French physician Maurice de Fleury reactivated the topic in 1909 with his contribution “Sur le retour d’âge de l’homme”, a condition detected in males “de quarante et quelques années” [8]. In addition to the clinical symptoms, he found significant changes in the patients’ urine and postulated that, unlike the changes in the genital organs of women, the thyroid gland was the main cause of the disease in men: “Pourtant, il est une autre glande à sécrétion interne qui me paraît jouer un rôle dans la genèse de ce faux retour d’âge: je veux parler de la thyroïde”.

In July 1910, Archibald Church, professor of nervous and mental diseases in Chicago, Ill., USA, published his article on “Nervous and mental disturbances of the male climacteric”, not citing any of the above-mentioned works [5]. On the other hand, he gave a detailed review of the literature dealing with the issue of certain symptoms that might occur in a “monthly rhythm in men”, e.g. variations in weight and temperature, frequency of nocturnal emissions, hemorrhoidal flux or attacks of cardiac asthma. He even refers to the earlier “Selected papers on Hysteria” of Sigmund Freud, who wrote: “There are men who show a climacterium like women,

and merge into an anxiety neurosis at the time when their potency diminishes.” Church continues with his own description of symptoms observed over 10 years at the “involutional or climacteric period” of his patients between the ages of 50 and 65: “The particular interest of my subject does not pertain to the insanities, but to minor psychoses and neurotic disturbances. These, one and all, however, have a mental background.”

In October 1910, the German physician Kurt Mendel [22] and, in response to Mendel’s article, Bernard Hollander [15] from England both published articles entitled “Die Wechseljahre des Mannes (Climacterium virile)”, claiming that they were also aware of this clinical entity and had treated patients over the last decade. Mendel’s father, a well-known university professor of neurology, had already used the term when presenting those patients in his lectures. Although Mendel and Hollander approached the problem from the point of view of neurologists; they both agreed that the involution of the testes is the main pathomechanism responsible for the climacteric disease that can then be influenced by other factors [22]: “Sehe ich somit die Hypofunktion der Keimdrüsen als Grundursache des beschriebenen Krankheitsbildes an, so können daneben aber andere Momente in Betracht kommen, die als mitwirkende Faktoren bei Auslösung und Entwicklung des Leidens anzusprechen sind”. Despite organotherapy with “Spermin” and unspecific treatments like cold showers and faradisation of the body, Mendel suggested psychotherapy as the preferable and most successful therapeutic modality. Furthermore, he discussed some forensic aspects of the climacteric in males. As is the case with women, a higher rate of criminal acts – mainly consisting of insults towards others – is to be expected in the sixth decade of a man’s life and this circumstance should be kept in mind by medical experts who are asked for their professional opinion in court.

In 1916, the dermatologist and sexologist Max Marcuse from Berlin drew a connection between the “climacterium virile” and some urosexual disturbances or changes of the prostate making his work of special interest to urologists [21]. In most of his patients he detected an involuted small and soft prostate, a status he called “Prostata-Atonie”. In several cases, he successfully applied either organotherapy with “Testikulin”, “Testogan” and “Hormin” or faradisation of the prostate.

Two examples of comprehensive monographies on the topic written in German are “Über den Mann von 50 Jahren” by F.K. Wenckebach from 1915 [33] and “Die Wechseljahre des Mannes” by A. Hoche from 1928 [14].

August Werner from St. Louis re-introduced the term male climacteric in America in the late 1930s and today his name is still associated with it by most authors. In 1939, Werner suggested the following theoretical background for this clinical condition [34]: “It seems reasonable to believe that many if not all men pass through a climacteric period somewhat similar to that of women, usually in a less severe but perhaps more prolonged

form...The endocrine dysfunction, plus the imbalance of equilibrium between the two divisions of the autonomic nervous system, with evidence at times of disturbance in the psychic centers, is the climacteric. The true climacteric is due primarily to decline of function of the sex glands. Decline of sex function is not limited to women but is also a heritage of all men.” The detailed results of the evaluation of 273 patients with this condition were then presented in 1946 [35]. Of these patients, 177 were treated with intramuscular testosterone propionate injections, only four of whom did not benefit from the treatment. Werner’s conclusions from these data are quite convincing: “1. Men are subject to the hypogonadal or climacteric syndrome, just as are women, when there is decrease of function or afunction of the sexual glands. 2. Testosterone propionate is as effective in relieving the subjective symptoms of this syndrome in men as estrogen is in relieving the symptoms of similar origin in women. 3. Sex hormones should not be administered to men and women of climacteric age with the idea of stimulating increased sexual potency; if this is the object of treatment, disappointment will result in the great majority of instances.”

Testosterone and the testis: the ageing male’s youth fountain?

Throughout history, many concepts have been suggested and practised to achieve eternal youth, longevity and rejuvenation. To point out only one example, one might think of the biblical case of King David, who was old in years and showed a significant loss of “heat”. A young virgin was chosen to compensate this deficit: “...and let her lie in thy bosom, that my lord the king may get heat” (I Kings 1:1). As the name of this virgin was Abishag the Shunammite, the method of bringing an aged man in close contact with a young woman was, henceforth, called shunamitism and this idea, among many others, was kept up until recent centuries [31].

Tales and myths about aphrodisiacs and rejuvenating extracts from testicular tissue or blood were reported from ancient times up to the present. With the birth of modern endocrinology in the 19th century, the testes and, later, their identified hormonal product testosterone increasingly attracted the interest of scientists who were investigating the ageing process. The French physiologist Charles Edouard Brown-Séquard suggested injecting semen into the blood of old men in order to increase mental and physical strength in 1869 and performed the first animal experiments 6 years later. His famous self-experiment at the age of 72 with several subcutaneous injections of a mixture of blood from the testicular veins, semen and juice extracted from crushed testicles of young and vigorous dogs and guinea pigs in 1889 was one of the first milestones for androgen therapy in the ageing male, although his “pharmaceutical” prescription must have been equivalent to a placebo [2, 28, 31]. The following passage on “seminal losses”, a

condition Brown-Séquard also called “spermatic anaemia”, and which was generally better known as “spermatorrhoe”, reveals the limited understanding of testicular endocrinology at that time [2]: “Besides, it is well known that seminal losses, arising from any cause, produce a mental and physical debility which is in proportion to their frequency. These facts and many others have led to the generally admitted view that in the seminal fluid, as secreted by the testicles, a substance or several substances exist which, entering the blood by resorption, have a most essential use in giving strength to the nervous system and to other parts.”

In Vienna, the physiologist Eugen Steinach started conducting experiments with testicular transplantation in animals at the turn of the century in order to study the sexual differentiation and the hormonal function of the gonads. In his theory of “autoplasmic” treatment of ageing, he postulated an increased incretory hormonal production following the cessation of the secretory output of the gonads after surgical ligation of the seminal ducts [29]. Steinach nicely summarised the results of his scientific life in his late biography [30]: “It has frequently been said that a man is as old as his blood vessels. One may have greater justification for saying that a man is as old as his endocrine glands.”

Early in his career, Serge Voronoff had discussed the life expectancy and signs of ageing in castrates and later became the leading surgeon to transplant testicular tissue from ape to man [32]. A rejuvenation boom took place in the early 1920s with both Steinach’s vasoligation and Voronoff’s testis transplantation, which were performed by many doctors in Europe and America [28, 31].

The biochemical identification and synthesis of testosterone and other steroid hormones was achieved in the 1930s [13]. This was a “conditio sine qua non” for the further development of modern endocrinology and the basis for a rational therapy with sexual hormones. The first years obviously implied a too generous application of this new therapeutic option with regard to the problem of the “climacteric in ageing male”, as was hinted at by an editorial in the *Journal of the American Medical Association (JAMA)* in 1942 [9]: “Recently many reports have appeared in medical journals claiming that a climacteric occurs in middle aged men. Brochures circulated by pharmaceutical manufacturers depict the woful course of aging man. None too subtly these brochures recommend that male hormonal substance, like a veritable elixir of youth, may prevent or compensate for the otherwise inevitable decline. What of the postulated occurrence of a climacteric in men?”

In the following years, systematic studies like “The male climacteric, its symptomatology, diagnosis and treatment: use of urinary gonadotropins, therapeutic test with testosterone propionate and testicular biopsies in delineating the male climacteric from psychoneurosis and psychogenic impotence” [12] and later “The microdetermination of testosterone in human spermatic vein blood” [16] finally opened the door for modern

research projects in the field of “androgen deficiency in the aging male”. Monographies like “Urologische Endokrinologie” (1951) by R. Chwalla [4] or “Hormones and the Aging Process” (1956) by E.T. Engle and G. Pincus [10] were the results of these efforts.

Epilogue

History is repeating itself! At the height of the discussion on the male climacteric in America during the early 1940s, Julius Bauer in 1944 wrote a comment entitled “The male climacteric: a misnomer” [1], critically pointing out the differences between the hormonal changes of ageing in males and females. In 2000, Morales, Heaton and Carson, in “Andropause: a misnomer for a true clinical entity” [23], described the same imperfections of the term andropause, using the same arguments that had been used half a century earlier.

Today, the scientific world apparently agreed on the term “ageing male” and there is even a new international society “The International Society of the Study of the Aging Male” (ISSAM) and its medical journal *The Aging Male*, both founded in 1998 by Bruno Lunenfeld [19]. Interestingly, the modern American spelling “aging” has finally dominated over the classical English “ageing”.

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