



Editorial

Averroes, Rationalism and Systematization in Medicine

Averroes, racionalismo y sistematización en medicina



Averroes (*Abu Al-Walid Ahmed Ibn Mohammad Ibn Rushd*) was one of the most important doctors of the Iberian Peninsula in the Middle Ages. He was born in Cordova in 1126 into a Muladi (Iberian-Visigoths converted to Islam) and Berber family, under the Almohad domain.¹ In order to understand the context in which his birth occurred it is important to remember that after the fall of the Cordoba Caliphate (1031), the Iberian Muslim world became progressively divided into small territories (*taifas*). Later on, some of the leaders of these *taifas* requested help from North Africa to deal with this political decomposition. One of the key moments motivating this decision was the conquest of Toledo and its *taifa* by the Christian king of Leon (1085). The Berber tribe of the Almoravids then came to the aid of Muslim Iberian Peninsula, and achieved to some degree a reunification of their territories (1147). In addition, its ruling class actively promoted cultural development, characterized by great architectural works and the protection of intellectuals and artists.

Under Almoravid rule, the family of Averroes prospered, and his grandfather and father became successive Qadis (Islamic judges) of Cordova.^{2,3} In that context, Averroes had a privileged education, with great teachers such as *Ibn Rizq*, *Ibn Bashkuwal* and, probably, the philosopher *Ibn Bajah* ('*Avempace*'), and an integral formation in religion, laws, poetry, classical world philosophy and mathematics.^{2,4} Moreover, his personal and professional profile was favored by an eclectic environment of cultural diversity (Muslim, Jewish and Christian backgrounds). As for medicine, Averroes was trained by two great teachers, *Ibn Juryul* ('*Gudriol*', a Valencian physician) and *Ibn Harun at-Turjali* (from Seville).³ Unfortunately, at that same time, a certain level of relaxation of the religious precepts by the Almoravids, together with the progressive threat from the peninsular Christian kingdoms, motivated a strong fundamentalist reaction. This reaction, led from North Africa by the Almohads, also Berbers, overthrew the Almoravids, took the power in the Iberian Peninsula (1145)³ and conquered Cordova (1149). Initially, they did not modify the liberal environment of the city. In fact, its first governor, *Ya'qub Yusuf*, who would become the Caliph later on, had a cultivated profile and was only discreetly religious. In this context, Averroes traveled to the capital of the new empire (1150), where he participated in the creation of educational centers and met Doctor *Ibn Tufayl*, from Guadix, with whom he developed a great friendship dotted with philosophical controversies. Around 1168,³ *Ibn Tufayl* introduced him to the then Caliph, *Ya'qub Yusuf*, and Averroes became his personal doctor.^{1,4} It is interesting to note

that *Ya'qub Yusuf* surrounded himself with intellectuals,³ and also contributed to Averroes' political dimension by naming him Qadi of Seville.¹ However, *Ya'qub Yusuf* died in a city siege in Portugal (1184), and was succeeded by *Ya'qub al-Mansur*.⁵ This Caliph was characterized by great religious intolerance and Averroes underwent various trials for heresy due to religious and philosophical issues. Amongst them, it is worth mentioning those related to maintaining that truth comes from demonstration by logic reasoning, and understanding is mainly achieved by reasoning. In some of these lawsuits he remained unscathed, but unfortunately, he was convicted in 1197, and was persecuted as other intellectuals and doctors.⁵ He had to flee from Cordova and apparently took refuge in the family home of another famous doctor of his time, Maimonides. Later, Averroes was exiled in Lucena, with many of his books being banned and destroyed.¹ Finally, he was called to Marrakech where he lived under house arrest until he was amnestied and vindicated shortly before his death in 1198, which was perhaps the aftermath of a possible rheumatic fever he suffered in his youth. Averroes was buried in Cordova and it is said that his coffin 'was placed on one side of a mule, while on the other side were his books, which served as a counterweight'.⁶

Therefore, during his youth and young adult years Averroes was a person who developed multiple intellectual facets in a rich social and cultural context. He could easily be seen to be a philosopher, lawyer and doctor. His literary and scientific productivity was extraordinary, and it may be useful to highlight his comments on Aristotelian philosophy and his work to bring philosophy and religion closer together. Among his non-medical works the 'Book of the necessary in logic', 'Summary exhibition of philosophy' (1159) and the 'Treaty which exposes the relationship between religion and wisdom' (1180), should be mentioned.¹ Then, he wrote a work, the 'Destruction of al-Gazzali's philosophy', that caused him multiple doctrinal problems. An important element that emerges from this and other Averroes' works is the preeminence granted to naturalistic rationalism over religion. Sometime later he also published the 'Treaty of the Pilgrimage' (1188) and the 'Paraphrastic Exhibition of the Republic of Plato' (circa 1194),¹ which harshly criticize the successive political systems of the Muslim Iberian Peninsula and were also a courageous plea for the role that women should play in that society. His exaltation of Andalusia and its way of life is also characteristic of the work of Averroes.⁷ Fortunately, his works and books were initially translated into Hebrew, and later into Latin; in part thanks to the Toledo School of Translators. This also resulted

in an excellent dissemination in the Christian world. In fact, his ideas greatly influenced Western thought and Medicine in both the Middle Ages and the Renaissance.^{1,2}

His enormous medical work must also be highlighted, and as other authors in the Arabic world, Averroes not only acted as a transmitter of Greco-Roman knowledge, but also incorporated his own reflections.⁸ His main conceptual contribution to Medicine was to have reintroduced rationalism into the comprehensive analysis of symptoms and signs linked to different syndromes, facilitating diagnoses in the relatively dark Middle Ages era. We owe to Averroes the 'Generalities' (of medicine) or *Kulliyat* (1169), called *Colliget* in the Latin translation; a true encyclopedia of the medical knowledge of his times, and a compendium of the Galenic medicine in use enriched by the Oriental Arab works. This text is comprised of seven volumes, dedicated to anatomy, physiology, pathology, semiology, treatment and hygiene.^{1,9} It might be true to say that other important Averroes contributions are as seeing medicine not only as a science dealing with diseases but also with the preservation of health, the predominance that he gave to personal observations, and the importance of understanding the causes (etiology) and mechanisms (pathogenesis) that lead to diseases. In addition, he systematized anatomy and physiology into body systems, in a similar way to what is understood today.² Furthermore, these seven volumes were adopted as study texts by the best medieval and Renaissance faculties of medicine, such as those in Montpelier, Oxford and Paris. In addition, Averroes wrote comments to medical texts of Galen and Avicenna.

With respect to the respiratory system, Averroes considers the air (one of the four classic fluids) as the warmest and wettest part of the organism,¹⁰ and as a positive quality since it can be considered as 'the vapor that is transmitted through the arteries and it is perceived in the heart and the brain'.⁷ On the other hand, he encompassed both respiratory and circulatory systems within the so-called 'vital power', essential for the maintenance of life, and included in the former system not only airways and lungs, but also the diaphragm. However, he gave to the respiratory system the predominant function of cooling the left heart, and not gas exchange as Galen had advocated. On the other hand, and despite contemporary prohibition of performing human dissections, Averroes describes in detail the pulmonary circulation.¹¹ Furthermore, in his 'Commentary on the Canticle of Avicenna',¹² Averroes confirms different aspects of pulmonary and thoracic mechanics, such as air inhalation and exhalation 'the logical consequence of the expansion and contraction of the thorax and subsequently, of the lung . . . with refreshing effects of ventilation on the left heart and vessels'.¹³ Regarding the appearance of the dry or productive cough mentioned by Avicenna, Averroes interprets it as implying the 'beginning and progression of the pulmonary or outer membranes

processes', respectively. When these symptoms or signs are accompanied by fever and chest pain he mentioned that it is indicative of inflammatory involvement of the pleura. Averroes also concludes that a dark or purulent sputum indicates poorer prognosis.¹²

In summary, Averroes was key both as a doctor and a philosopher for the development of further Western thought and scientific Medicine. He emphasized the use of observation and reasoning in medical practice, as well as systematization of Medicine by systems to facilitate the development and learning of this art-science. With the latter contribution, it is possible to say that he laid the foundations for what would eventually become medical specialties, such as pulmonology and thoracic surgery.

Acknowledgements

To Jonathan McFarland for his editing aid.

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