

Unit 5 - The Middle Age: Byzantine, Arabic and European Medicine

Reading

1. Periodization of the Middle Age History

The history of the Middle Age starts in the fifth century with the end of the Western Roman Empire and the sack of Rome in the 410 A.D. accomplished by Alaric, the Kings of Goths, a Germanic population coming from the southern Sweden and spread in the North and Central Europe. Roman Empire in 286 A.D. has been divided by the emperor Diocletian in two different political realties the Western Roman Empire which capital was Rome, and Eastern Roman Empire, which capital was Constantinople later turned out in Byzantium (the current Istanbul, Turkey). On 4th September 476 A.D. after the deposition of the young Romulus Augustus the Western side collapsed after the invasion of the Visigoths and Ostrogoths, whereas the Eastern side started a long period of stability. The political unity, the use of Greek language and the Hellenistic culture heritage consented to the Eastern Roman Empire, the new Byzantine Empire to survive for thousand years more and become the core of Orthodox Christianity. This new socio-political reality consented to the Ancient medicine to survive and contribute to the pass of medical knowledge from the Ancient Age to the Middle Age. The expansion of the monotheistic religions through the ancient Roman Empire territories has been essential to differentiate Middle Age medicine from ancient and Modern medicine.

2. Christianity and Medicine

The relationship between Christianity and medicine is clear from the early account of Christian Religion, in the The Gospel Book Jesus announces the duty of care for sick people, this represents an innovative approach, illness is not a simply divine punishment, but became a trial for the believers to promote the word of the Lord and the love for neighbour. The dichotomy between soul and body established in the Christianity assigned to the physician a subordinate role compared to the priest, the soul is superior to the body, the care of soul is more important than the healing of body. The duty of care and the extension of the Jewish tradition of help and hospitality are both essential to define the relationship between Christianity and medieval medicine. From the 250 A.D. the Roman Church established the duty to provide food and shelter to poor and sick, and progressively between the 3rd and 7th centuries in the East Roman Empire the nosokomeia appear Jerusalem, Constantinople, Edessa. In the West the Rule of St. Benedict synthetises these aspects and integrate the practice of medicine in the Monastery activities since the 6th century, and the duty of healing became an obligation of the Monks. The Monastery has one infirmarium for the internals sick and a hospitalis for the external visitors, the hoppers. Through the obligations established by the ethos of charity imposed by the Christian religion the hospitals have been introduced in the history of healthcare and became the most significant innovation of medicine, affecting the role of physicians into the healthcare institution, designing a new model of the ancient civitas hippocratica, establishing a new model of medical education. But this progress of medicine is not fully understood without other factor influencing the medical history in the Middle Age: the influence of Greek and Roman medicine.



3. Influence of the Ancient Medicine

In the Eastern Roman Empire there are three kind of physicians or iatrosophoi: commentators of ancient texts coming from the Alexandrian School tradition, physicians philosophers influenced by the Plato Academia, opened until the 529 A.D. and other authors of small monographic works. All these physicians represent a period of transition between the imposition of Galenism and the end of the creativity of Hippocratic medicine. Among the most significant we can enumerate two of the 4th century: Posidonius, one of the first to locate in the brain the psychological activities such as imagination, rational thinking and memory, and Zeno of Cyprus, who created a school in Alexandria with influent scholars promoting the doctrine of physis. In the Western Roman Empire some follower of Greek medicine and Galen works produces a minor literature, the most important is Celio Aureliano, who imported the medical tradition of Soranus of Ephesus in the Latin culture. The medicine and the role of iatrosophoi to promote the Galenism represent a transition period between the end of Old medicine and the start of Byzantine medicine with the work of Oribasius and the descent of Galenism.

4. The Byzantine Medicine

The political unity and the growth of the Byzantine Empire has been possible by the use of ancient Greek, by which vehiculated the benefits of Ancient culture, the Orthodox Christianity and the power of the Byzantine Church, and the economic stability imposed by the feudal order and the dynamism of big cities as Alexandria and Constantinople.

Medical practice during this period is influenced by the Galenus' version of the Hippocratic medicine, even than creativity of Greek medicine is progressively failing. The reasons of this decline are due to the radical modification of Greek world, the political organization changes from the polis to the empire, the influence of Eastern cultures integrated in the new political configuration, the mentality change produced by the extension of the Christianity on a cultural model inspired by the Paganism. This aspect produced some rejection of the Galenic medicine and its intrinsic rationalism and left more influence on his philosophical works. The mediation of the Galenic works aroused by the Christianity contributed to the prevalence of philosophical contents and to the weakening of the physiological rationality. In addition, the success of coming from Egyptian culture restored the practice of magic medicine, centred on the use of rituals and amulets, which allowed great influence in the entire society. A synthesis between Eastern and Greeks rituals contributed to the extension of curative practices integrating religion beliefs with practical knowledge. In this socio-economic context Lain, following Neuberger and Temkin, splits the characterization of Byzantine medicine in two different periods divided by the conquest of Alexandria by the Arabs in the 642 A.D.

5. Alexandrian Stage

This stage is characterised by the dissemination of Galen's works and the introduction in medical history of synopsis, a traditional approach characterizing the Hellenistic culture consisting in the ordered classification of the most important works of medicine, particularly the Galenic knowledge. This period has two significant well-known doctors: Oribasius and Alexander of Tralles. The first one, born in Pergamum in the 325 AD represents the transition from the Hellenistic to Byzantine medicine, author of the Medical Compilations a synthesis of the anatomy and physiology and therapeutic of Galen's works and other



physicians representing the late Ancient Age. He was a convinced Pagan; its works are an example of the creative crisis of Greek medicine and the twilight of Galenism. Alexander of Tralles born in 525 AD is a more creative writer, author the Twelve Books of Medicine about the pathology and treatment of internal illnesses, even than the style of writing and the precision of his observation are closer to the Hippocratic tradition, he show some indulgence with the magic and superstitious medicine of the Byzantine Age.

6. Constantinopolitan Stage

This stage starts in 642 with the Arabic invasion of the Alexandria and with the thriving of the Gundeshapur School. In order to understand the circumstances of the Gundeshapur school success it is important make some elucidation about the influence of Nestorianism, a sect birth under Nestorius, the patriarch of Constantinople in the 428 who denied the divinity of Jesus Christ. As consequence of the Council of Ephesus, Nestorians should leave the Byzantine Empire and are transferred to East, in Edessa (currently Syria) and in Gundeshapur (currently Iran), current Iran since the 3rd century. Gundeshapur took advantage from the closing of Plato Academia in Athens by Justinian emperor in 529 and the integration of Greeks philosophers coming from Athens. This circumstance will be essential to impulse the birth of Arabic medicine and create the condition to integrate Greek medicine and Arabic culture and assure the conservation of Hippocratic medicine for the posterior Renaissance. Gundeshapur became a meeting-place for Greeks, Syriac, and Jewish and Arabic culture.

7. Constantinopolitan Stage

With the birth of Islam, the West Mediterranean area became a turmoil region due to the plurality of cultures coexisting under the political power of Byzantine Empire and the influence of Christianity. Islam conquered Egypt, Persia, and Maghreb with part of Spain. The enlargement of the Islamic empire gains favour with the encounter between Arabic and Greek culture. The medical school of Gundeshapur is the loci where Greek science and medicine have access to the Islamic culture and made possible the recovery of Greek philosophy and Hippocratic medicine in the Western Latin Europe. The integration of the Gundeshapur legacy into the Arabic medicine is the “The house of wisdom” in the hospital of Baghdad, one of the most influent places for the development of Arabic medicine. Among the most significant Arabic physicians we count with Razhes (865-925), author of more than 200 essays, he studied medicine at the Bimaristan of Baghdad and his works are known as the *Materia Medica*, a very detailed description of a consistent number of illnesses on the basis of his own clinical experience. Rhazes works gave special attention to the medical practice and represent an innovation for medical education. Despite Rhazes relevance, the most influent and original doctor of the Islamic Golden Age is Avicenna (980-1037 A.D.) considered by most medical historians. Avicenna is a controverted personality, philosopher, theologian, astronomer, politician, he wrote around 200 books, and can be considered the perfect example of iatrosophist, according to the Galenic doctor-philosopher model. Due to his natural talent he was the first scholar to write a synthesis of Greek philosophy in Arabic, a treaty in 4 parts logic, physics, mathematics and metaphysics, the *Book of Healing*. The most significant work is the *Canon of medicine* a synthesis of Hippocrates, Galen and the Alexandrian physicians. It is structured in 5 books, from the general principle of medicine, constituted by anatomical, physiological and clinical knowledge, to the therapeutic focused on drugs and treatments, more than 760 drugs are listed alphabetically, a book on the diseases and related treatments. Following the Hellenistic tradition, the *Canon* is structured in disciplines, treatise, sections and



chapters. Despite his work is a description of Galenic medicine; there are frequent elements of originality in his descriptions, like the attempt to explain the rational casualty of the treatment. For that reason, we can consider Avicenna as one of the fathers of evidence-based medicine and his ideas had a great influence in the Modern Medicine.

8. Medical Knowledge

The Arabic medicine under the influence of Greek medicine classified medical knowledge in theoretical and practical. All the Arabic medical texts started with a systematic exposition of Galenic physiology, including anatomy and physiology. Due to the lack of dissections the Arabic anatomy was not original and conserved all the Galen's mistakes, the physiology was a synthesis between Galen and Aristotle research. Illnesses have been classified and ordered in the Arabic medicine following two criteria: physiopathology and clinics, the first one associates illnesses to the humours and elementary qualities of the body components, and the other on clinical observation and Rhazes's Alexandrian nosography.

9. Clinical Practice

Baghdad became the centre of Arabic medicine due to the connection with the Gundeshapur School, and several physicians found the city a great opportunity for a successful professional carriers and better incomes. Traditional Islamic doctors were educated in the madrasa, school of theology where medicine was part of the knowledge acquired by the hakim, a doctor-philosopher and theologian who received an individual practical training by another hakim. The success of the Gundeshapur's doctors among the local aristocracy is due influence of the Alexandrian tradition imported through the Christian Nestorians. But original contribution of the Arabic medicine has been the Bimaristan, and essential contribution for the success of Gundeshapur's doctors. The hospital of Baghdad was the first and the most important of a series located in the most important cities of Arabic domains, such as Damascus, Cordova and Cairo among the biggest. In addition to the general hospitals other smaller and specialized institutions were part of the Islamic health care services, specific hospitals for mental health have been opened to follow The Coram recommendation to care the mad. The role of the hospital in the Arabic medicine placed the clinical practice at the centre of medical knowledge, and despite the enrichment produced by Galen's legacy Arabic medicine respect to Byzantine medicine allowed a better efficacy and precision. Nevertheless, the contribution of Aristotle and Plato philosophy to the Gundeshapur School after the Plato's Academia closing is certainly other important factor.

10. The Medieval Medicine In Europe

The healing of the high Middle Age (V-XI) is defined as monastic medicine and is characterized from a residual Hippocratic medicine translated by monks and Christian religion. Since the first monastery funded in Monte Cassino (currently in South of Italy) on 529 A.D. the doctor is essentially a monk who started to attend sick people in the monastery facilities. In the Western Europe the only way to receive medical education in the high Middle Age was monastic medicine, until in Salerno, a small city at 70 miles from Monte casino, flourished a new school of medicine which will became under the influence of Arabic medicine the most important of the Latin Europe: the School of Salerno. The monastic medicine is practiced in the monasteries of all Europe and is considered as philosophia segunda by Isidore of Seville. Cassiodorus and a group of other authors in Benevento (currently in South of Italy) revitalized the interests for Greek



medicine. The medicine of the High Middle Age will cross the monasteries walls at the end of the XI century impulse by the success of the School of Salerno. Even though to recover a proper disciplinary dignity and have access among the disciplines of the incoming European Universities medicine should wait for the XIII c., when the effect of the Arabs and the assimilation of the Alexandrian Greek science will convert the School of Salerno in a new milestone for the modern medicine.

11. The Salerno Medical School

The school opened in the X century A.D. as a Collegium Hippocraticum, with a supposed relationship with the monastery of Monte Cassino, which became more influent when the medical doctor and abbot the Monastery Alphanus in 1063 became the Archbishop of Salerno and introduced Greek medical books in the school due to his travels in Constantinople. This initial stage is called by Lain Entralgo a “primitive stage” because the elaboration of the Christianised Galenism is made in the school through the influence of Byzantine medicine. If Alphanus is a foundational figure that contributed to the Latinization of Greek medicine in Salerno, the most important leader is Constantinus Africanus (1020-87 A.D.). With him starts a new stage called by Lain the “High Salerno”, and the Arabic medicine accedes to the Western Latin Europe. The most significant Constantine’s contribution is the translations of some Arabic medical books in Latin, which became a reference in the medical education of the Middle Age. Among the most relevant translation there are the Galen’s Method of Healing, the Johannitius’s Liber Yasagogarum and the commentaries to the Hippocrates Aphorisms. Through the Constantine leadership the Salerno Medical School became a reference for the European Medieval medicine until the early XIII A.D. The School contributed to the advance of clinical practice, anatomy, pathology, physiology, pharmacotherapy and surgery. The Salernitan educational model is resumed in the Articella (Little Art of Medicine) a synthesis between the Galen and Hippocrates works. The anonymous Regimen Sanitatis Salernitanum is other famous Salernitan work, a poem to disseminate dietary rules according to the Galenic model of the six-nonnaturals depicted in the Liber Ysagogarum. The School was a great model of civitas hippocratica and the first one to admit women, the most known is Trotula which most important work is the De Passionibus Mulierum ante, in, et post-partum. The mediation of the School of Salerno represents other significant milestone for the consideration of medicine as academic discipline. With the birth of the Universities in the XII c. the interest for the translations and the influence of Arabic medicine improved the quality of medical education. After the Salerno translations, the other most significant contribution to the advance of medicine is the work of Translation School of Toledo. Through the Toledan translations medical education elaborated a format influencing the scholasticism, affecting particularly philosophy and medicine. The University of Montpellier adopted the Canon of Medicine and other translations coming from Toledo and contributed to enrich the terminology of medicine.

12. The Birth of The Medieval Universities

Since the XIII c. the Universities started to be flourishing and contributed to regenerate knowledge. Before in Bologna (1088), Paris (1150), Oxford (1167), Padua (1209), Salamanca (1134), Cambridge (1209) became centres of reference contributing to the innovation of education. The principal success factor of the Universities is the methodological standard they provide to their students. The Scholasticism represents a stage of modernization of the education and at the same time the consolidation of the ancient tradition in Europe. Scholasticism is integrated in medical education progressively, under the impulse of other



disciplines, such as philosophy, theology and natural sciences, thanks to the influence of the new translations of the Aristotle work. Lain identified 4 significant contributions of medieval knowledge to medicine: the application of encyclopaedic approach to the natural sciences, the initiation of experimental method operated by Roberto Grosseteste (1175-1252) and Roger Bacon (1212-1292) in Oxford, the introduction of Scholasticism in medical education done by Aranau de Villanova (1234-1311) in Montpellier, Taddeo Alderotti in Bologna and Pietro d'Abano (1250-1315) in Padua, the renaissance of the surgery in Bologna and Paris. The medicine of the Middle Age grown around five important medical schools: Montpellier, Paris, Bologna and Padua), all these centres contributed to the use of treatise, handbooks, glossaries, collections. From the point of view of clinical knowledge, the new standard used in the Universities medical schools is case-based methodology and patient-centred medicine. Taddeo Alderotti introduced in Bologna the use of consilium, a new gender of medical literature focused on the single clinical case and useful at the same time for clinical learning of physicians and the therapeutic learning of patients. The gender is applied previously in Salerno School as regimina, imitation of the Salernitan Regimen Sanitatis for kings and royal families recommending individual diets and personalized lifestyles.

References

