

The Life and Works of Sadid al-Din Kazeroni: An Iranian Physician and Anatomist

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Abstract

Background: One of the great physicians in Iran who had expertise in medicine, surgery, and pharmacy was Sadid al-Din Kazeroni. He was a 14th century physician. No information is available on his birth and death – only “Al-Mughni”, a book, has been left to make him famous in surgical and medical knowledge.

Methods: We used desk and historical research methods in this research, with a historical approach. This commonly used research method in human sciences was used to criticize and study the birthplace and works of Sadid al-Din Kazeroni.

Results and Conclusion: Sadid al-Din Kazeroni discussed the exact issues in the field of anatomy, surgery, and gynecology. He was fluent in pharmacology. In his pharmacology book, for the first time, he named drugs considered necessary before and after surgery. In this study, we reviewed the biography and introduction of the works and reviewed “Al-Mughni”, a book on breast cancer.

Keywords: Sadid al-Din Kazeroni, Breast cancer, Anatomical illustration, Al-Mughni, Persian medicine

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Introduction

Professor Maryam Mirzakhani, who formerly taught at Stanford and Princeton Universities, was well-known in the world of science for her discoveries in mathematical science. She was the only woman who won the Fields Medal, known as

the Nobel Prize in Math. Unfortunately, she was diagnosed with breast cancer and underwent treatment at a hospital in the United States for 4 years. This news was released in June, 2017. As the disease progressed, with metastasis to her bone marrow, ultimately, Professor

Mirzakhani died at a hospital in California. Breast cancer and the onset of metastasis contributed to the death of Professor Maryam Mirzakhani.¹ The death of this scientific lady greatly affected the authors of this paper, causing this article to be written. The question arises as to what breast cancer is and why it happens. The minds of numerous physicians from ancient times until now have been engaged. To this day, despite the increased medical knowledge, its treatment in some cases has been ineffective.

The first description of cancer was in approximately 1600 BC in Egypt's ancient civilization. Although the term cancer was not used, 8 patients with breast cancer have been described in the papyrus since then. Egyptian doctors burned the cancer site with fire drills. This method increased the patient's longevity. However, in the remaining papyrus, the cancer was untreatable.²

Ancient Greek physicians were the first to recognize cancer as a disease. Hippocrates, known as the father of medical science, lived between 370 and 460 BC. He had seen skin and nose and breast cancers, and likened them to crabs. He used the word crab (carcinus-carcinoma) to address cancer. Later, Aulus Cornelius Celsus (c. 25 BC - AD 50 AD), a Roman doctor, used the word cancer from Latin synonyms. Muslim doctors also used the synonym of this word, cancer (meaning crayfish). Approximately 150 years after the birth of Galen, the Roman physician used the word oncos (the Greek equivalent of swallowing) to describe the tumors. His term is now used as part of the term oncologist.²

Ancient doctors believed that cancer should be removed surgically and generally believed that the disease would recur after the cancer surgery. Greek physicians knew that mastectomy would improve the condition of this disease. At the same time, they knew that breast cancer could recur in these patients and spread to other parts of the body. The Greeks sought to find a solution to treat cancer metastases, but they did not succeed. Galen, a famous Roman doctor of the second century, whose books were taught in medical

schools up to a thousand years later, considered cancer as inconclusive. Galen believed that if breast cancer was detected at an early stage, it could be completely removed by surgery.²

In Islamic civilization, there were doctors who discussed breast cancer: Hunayn Ibn-Is'haq (809-873), Rhazes (845-925), Avicenna (980-1037), Al Zahrawi (936-1013), Ibn al-Nafis (1218-1288) Qutb al-Din al-Shirazi (1236-1311), and Mansur Ibn Elyas (late 14th century and early 15th century). They believed that surgery was the only treatment for cancer. These physicians believed that the cancer should be completely removed from the body, as well as the veins and tissue surrounding the cancer. If necessary, the tissue around the cancer should be burned. In some cases, amputation was considered a cancer treatment method. Methods that included the use of certain diets, use of herbs and drugs that had less poisonous materials were also used that Islamic physicians, who could be considered pioneers in chemotherapy.³

Perhaps today's science owes itself to the thousands of years of Iranian and Islamic civilization of these scholars, in particular of Bouali Sinai and his commentators. The science of the world of cancer has not changed significantly. Iranian-Islamic doctors, except surgical procedure, prescribe multiple medical prescriptions for breast cancer treatments. Some of which are edible, especially if the patient's diet is consistent and include foods that are cold and moisturizing, and healthy foods compatible with the cancer-infected patient like non-alcoholic beer, trout, egg yolks, which are most commonly used on the wound.

Apart from the above-mentioned Iranian-Islamic physicians, we came across a unique subject while persuing a special written work, whose author seemed to be unknown in Iran's medical history as well as the 14th century AD, Shiraz scientific center. It is noteworthy that in the present study, we addressed the discovered subject which was concerned with a physician whose biography and medical works are presented here in detail. Moreover, his surgery book, a precious

contribution to breast cancer treatment for the first time in the world, is also discussed.

Sadid al-Din Kazeroni

Sadid al-Din Kazeroni was born in Kazeron, a city in Southern Iran. He was a famous 14th century AD, Iranian physician and pharmacist who probably studied at one of Shiraz's scholarly schools under the supervision of Hakim Burhanuddin Nassiri Shirazi. Unfortunately, no information is available on his date of birth and death. His most famous work, "Al-Mughni fi sharh al-Mujiz" which is also known as "Sharh Sadidi" has given some brief references. He described this with the help of the law of the "The Canon of Medicine" by Ibn Sina. In particular, two extras of the law, "Qutb al-Din al-Shirazi al-Tuhfat al-sa'diyah", and a description of "Ibn al Nafis", "Sharh tashrih al-qanun li 'Ibn Sina" has been written in Arabic.^{4,5}

Furthermore, Sadid al-Din Kazeroni had read all the medical books written in the past and had attended his contemporary physicians' sessions, thereby dubbing his descriptive work "Al-Mughni", an Arabic word meaning "Self-contained" so as to alleviate the need to read other medical books on the part of physicians.⁴ He finished writing the book in 1344 AD.^{4,6} However, according to Zabihollah Safa, the book was said to be entitled as "Tozihat" (literally meaning The Descriptions) and date of its end as in 1345 AD.⁷

In the bibliography of "Al-Mughani Phi Shahr-Al-Mu'julz", this book is in 12 pages and consists of two chapters as follows:

The first one is about singular members and in 22 chapters as follows: in the bones, in the cartilage, in the ligaments, in the muscles, in the description of the muscles of the head, neck and shoulders, in describing of the pharynx, larynx, tongue, etc., in the muscles of the other body, in the muscles of the chest, in the leg muscles, in the description of the nerve, in the spinal nerve, in the description of the sweat of the gut, the hands, in the part that the bowels and goes to the lower parts of the body, describing the arteries, in the meat,

in the fat, in the bosom, in the skin, in the hair and nails.

The second part - in the mechanism of the members, includes 17 chapters as follows: in the description of the nose, in the eyes, in the ear, in the nose, in the mouth and tongue, in the throat, in the breast, lung and heart, in the food, in the liver, in the spleen, in the kidneys, in the bladder, on the abdominal cavity, in the production members, in the womb.⁸

For the first time in Islamic civilization, he thoroughly studied female anatomy. In addition to surgery, Al-Mughni described a women's body in numerous topics and subtle details of the fetus, uterus and detailed descriptions of how childbirth, detailed information on many references to cesarean section, maternal and obstetric diseases, and traditional women's surgery as well as breast cancer, which opened the way for other surgeons and expositional researchers who appeared in Iran in the 15th century. In this study we do not focus on authors like Mansur ibn Elyas, who appeared one hundred years later in 1450 AD, and presented very interesting forms of women's anatomy.^{9,10}

Additionally, apart from Al-Mughni, he is believed to have two other works entitled as "Sharh-e Kolliyat" (literally meaning The Description of The Complete Works" as well as "Sharh-e Mofradat-e al-Qānūn fī al-Ṭibb") literally meaning The Description of The Expressions in The Canon of Medicine by Avicenna. Contemporary with Kazeroni, one of his pupils called Jalinus Ibn Mahmud al-Matbab al-Jali duplicated the latter on November 13, 1368 in Orhan School in Tabriz. In 1344 AD, Kazeroni wrote a book entitled "Description" (Tozehat), which was a commentary on the Canon of Medicine of Avicenna. In this book, both sections of the generalities and the narrations were described. The name of the description of the narrations is Rozati al-Atiba and Jnna al-Albaa. In his general descriptions, Kazeroni has chosen the method of Qutb al-Din Shirazi, and his additions were worthwhile. He described the explanation of the law, which Qutb al-Din Shirazi

had put without explanation and it was not generally accepted like the succinct Kazerooni's description. There are both general descriptions and narrations in Imam Reza's library. In Dar al-ulum Deuband and Khodabakhsh Patane, the description of the law means only the general descriptions and is reserved for the description of the text in the Egyptian drama school.¹¹ Most likely, the first one who used the "Al-Biruni" pharmacy was Sadid al-Din Mohammed Kazeroni. In his commentary on the second article of the Ibn Sina Law, he quoted extensively from "Kitab al-Saydana fi'l-tibb" to compensate for the inadequacies in describing a large number of drugs in it, before and after the surgery.¹² A book titled "Mufradat fi'l-tibb" was attributed to Sadid al-Din Kazeroni, Al-Sadidi is available at the Turkish Library of Istanbul.¹³

Sadid al-Din Kazeroni is not only superior in scientific terms among the three well-known figures of Qutb al-Din Shirazi's and Aqsara'i's and Ibn Nafis's laws, but also in distinguishing technical topics. For the best explanation and explanation of the generalities of the spice, this part of the social work has been part of the curriculum. On the other hand, due to the fact that Al-Mughni's book was a common book, many manuscripts have been discovered from it; on the other hand, it is mentioned in the first publications of India. In addition to the descriptions of Qutb al-Din Shirazi and Ibn Nafis Gharashi, Kazeroni has used the information of his unknown master Borhanuddin Nassiri. (Haly Abbas) Kitāb Kāmil aṣ-ḥinā'a aṭ-Ṭibbiyya, al-Mā'a fi-l-Sanā'a al-Tabi'iyah from (Abu Sahl 'Isa ibn Yahya al-Masihi), Nokhbat al-Alaj (Ibn Abi Sadiq al-Naishaburi), Kitab al-Mukhtarat al-tibb (Ibn Hubal), Comprehensive Kitāb al-Jāmi'-li-Mufradat al-Adwiya wa-l-Aghdhiya (Ibn al-Baitar) and Kitab al-taysir (Ibn Zuhr) as his special sources.⁸

Conclusion

Sadid al-Din Kazeroni is one of the Iranian famous doctors and surgeons who, although his books have been regarded as references for years in Iran and India, historical information about

him is very limited. The authors of this paper worked diligently to obtain accurate information. This physician and surgeon mentioned, for the first time, discussions on gynecologic surgery, which was not previously considered by other doctors and surgeons. He paid much attention to maternal and obstetric diseases, which were thoroughly discussed in his book. Breast cancer was assigned, even in his talk of pharmacology; he discussed a detailed discussion of pre-and post-cancer drug treatments. This Iranian physician and surgeon has been considered scientifically important in the history of Iranian medical science.

Dedicated to

We present this work in memory of Professor Maryam Mirzakhani, may her soul be blessed.

Funding

The authors disclosed financial support for the research, authorship, and/or publication of this article from Shiraz University of Medical Sciences.

Acknowledgment

We thank the Research Center for Traditional Medicine and History of Medicine. In addition, we express our appreciation to Shiraz University of Medical Sciences for its support.

Conflict of Interest

The present work was conducted aiming to examine the life and books of one of the first breast-cancer treating physicians in Iran and Shiraz Medical Center in the 14th century in order to pay off the debt owed to the Iranian-Islamic history and civilization. It should be noted, moreover, that no financial benefit is to be derived from performing this research.

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