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Atatürk's (1881-1938) Heart Disease: A Qualitative Research

ABSTRACT

Objective: This study aims to examine Atatürk's heart disease through historical documents and evaluate it in the context of the medical capabilities of the time and current cardiology knowledge. The symptoms, diagnosis, and treatment of his condition, along with physicians' practices, were retrospectively analyzed.

Methods: Qualitative research methods (document analysis and case study) were employed. Primary sources such as memoirs, newspapers from the period, and official records related to Atatürk's health were examined. The data were thematically analyzed and interpreted by comparing the medical understanding of the era with contemporary cardiology guidelines.

Results: Atatürk experienced 2 cardiac episodes in 1923 and 1927, both characterized by chest pain radiating to the left arm. Due to limited scientific knowledge and the absence of modern diagnostic tools (e.g., ECG, cardiac troponin, echocardiography, angiography), diagnosis was based solely on clinical observation and physical examination. His diagnosis was labeled Angine de Poitrine (angina pectoris), reflecting the terminology of the period. However, in light of current medical knowledge, these episodes can be reinterpreted as acute coronary syndrome (either unstable angina or acute myocardial infarction).

Conclusion: This study is one of the first systematic evaluations of Atatürk's heart disease from both historical and cardiological perspectives. It also highlights the evolution of diagnostic and treatment methods in cardiology and underscores the value of historical research in understanding the progression of medical knowledge.

Keywords: Atatürk, acute coronary syndrome, history of cardiology, history of medicine

SPECIAL INVESTIGATION

INTRODUCTION

After graduating from the War Academy in 1905, Atatürk held various domestic and international posts, playing key roles in major conflicts like the Tripoli War, Balkan Wars, and World War I.[1,2] Appointed Inspector of the Ninth Army on April 30, 1919, Atatürk launched the Turkish National Struggle upon arriving in Samsun on May 19, marking the start of a difficult period leading to the Republic's founding.[3] Before the Grand National Assembly was established, Atatürk faced strong political opposition, including efforts to dismiss, arrest, or execute him. He also dealt with revolts, assassination attempts, and opposition groups, enduring harsh conditions on the front lines and in military campaigns.[4,5]

Throughout his 57 years, Atatürk dedicated himself to his nation's independence and progress. Despite illness, he prioritized building a modern Turkish state over his health. After surviving an assassination attempt in İzmir, he declared, "My mortal body will surely turn to dust one day, but the Republic of Türkiye will live on forever," reflecting this commitment.[6]

Despite serving as Atatürk's personal physician from the founding of the Republic until his death, Ord. Prof. Dr. Neşet Ömer İrdelp (1882-1948) stated, "No one has observed Atatürk closely and for as long as I have. I have notes and one day I will write my memoirs. I treated Atatürk for nearly twenty years and his mother for about ten years." Nevertheless, he left behind no written documents or memoirs regarding Atatürk's health.[7] After Atatürk's death, Dr. Neşet İrdelp planned

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to travel abroad for rest. When he sought permission from President İsmet İnönü, İnönü asked him not to write about Atatürk's health. Dr. İrdelp replied that he had no such intention.[8]

Throughout his life, Atatürk suffered from various illnesses, including malaria, and diseases of the kidneys, heart, respiratory and digestive systems, as well as the ears. Since childhood, he also experienced minor injuries like war wounds, eye injuries, facial abscesses, rib fractures, and even dog bites and horse kicks.[7,9] Although several people close to Atatürk, including his physicians, published memoirs and notes about his final disease and overall health, these accounts lack detailed and comprehensive medical information.[8] His diseases have been the subject of numerous studies. The most well-known and widely discussed is his liver disease, which is considered to have ultimately led to his death.[10,11] Among these, his heart disease is undoubtedly one that warrants serious consideration.

This research aims to clarify the symptoms, diagnosis, treatment, and causes of Atatürk's heart disease, as well as the roles of his physicians, by analyzing key primary sources such as memoirs, newspapers, and official archives. The clinical approach will also be examined through the lens of history of medicine, combining contemporary cardiology with the knowledge of his era.

METHODS

Research Design

Document analysis, a qualitative research method, involves collecting, reviewing, and analyzing various documents as primary data sources. This includes printed, electronic, visual, and historical materials. By selecting and interpreting relevant documents, researchers can gather meaningful data aligned with the study's focus.[12,13] Any text-based document related to the case or period studied (such as books, newspaper articles, academic papers, or institutional reports) can be analyzed as part of the research.[14]

HIGHLIGHTS

- Atatürk experienced 2 cardiac episodes, one in 1923 and another in 1927.
- Both local and foreign physicians were involved in the diagnosis and treatment process of Atatürk's cardiac diseases.
- Three physicians with significant contributions in the field of cardiology were involved in the treatment process of Atatürk's cardiac diseases: 1 from Türkiye and 2 from abroad.
- The diagnostic and treatment methods applied during Atatürk's cardiac episodes are considered consistent with the scientific knowledge and medical standards of that time.
- This study, specifically focused on Atatürk's cardiac diseases, offers a perspective on the historical development of cardiology in Türkiye.

For this reason, the method is more commonly preferred in historical research.

Another qualitative method is the case study, which enables an in-depth examination of a specific event or process. It allows the use of various data collection tools over a defined period to explore cause-and-effect relationships. Key features of this methodology include (1) it is a research strategy, not merely a data collection method; (2) it requires inclusion of data relevant to the research topic; (3) it allows flexibility in sourcing materials (e.g., books, archives, manuscripts, visual/audio documents); and (4) the subject of analysis may involve an individual, group, organization, event, or decision.[15] Therefore, this method is well-suited for social research in the fields of medicine and health, allowing for a comprehensive understanding of complex medical and healthcare-related phenomena.

When applied to history of medicine research, these methods help contextualize past medical phenomena within their historical period and connect them to modern medical understanding.

Data Collection and Selection of Documents for Analysis

Sources on Atatürk's heart disease were examined using the Presidential State Archives of the Republic of Türkiye, the National Library of Türkiye, the Istanbul University Newspaper Archive (Gazeteden Tarihe Bakış), and the Wikilala database. Archival documents, primary sources, copyrighted works, analytical studies, and newspapers were reviewed. Only sources relevant to the research topic were included; unrelated materials were excluded from analysis.

This study relies on published memoirs, official documents, and primary sources related to Atatürk's medical history, with careful attention to the reliability of historical records. Most documents were authored by physicians of the time or individuals close to Atatürk. However, the potential subjectivity of these accounts and the differences between historical and modern medical terminology were also taken into account.

Research Team

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Data Analysis

Information specific to Atatürk's heart disease was extracted from primary printed sources and thematically analyzed by the research team. Using the documents' chronological order, data were identified on the physicians involved, symptoms, physical findings, diagnostic methods, treatments, recommendations, etiology, and outcomes. The findings were organized into tables, excluding duplicate or similar statements from different sources. Each entry included in the tables was referenced to its original source.

All data used in the research were systematically documented and analyzed by the research team without the use of software. The study's design and writing followed the SRQR Checklist, an internationally recognized standard for

qualitative research.[16,17] (https://onlinelibrary.wiley.com/pb-assets/assets/15532712/SRQR_Checklist-1529502683197.pdf)

The article was originally written in Turkish by the researchers. For the English translation, artificial intelligence (AI) and AI-assisted translation tools were utilized, and the final version of the text was refined through subsequent revisions.

RESULTS

Information regarding Atatürk's heart disease has been identified in the following sources (Figure 1):

Findings indicate that Atatürk suffered from 2 cardiac-related health episodes, one in November 1923 and another in May 1927. After thematic analysis of the findings regarding the heart diseases that Atatürk had suffered from, in light of the documents examined, 2 different tables were prepared. In addition, an observation report originally prepared in French to be presented to the physicians invited from Germany due to Atatürk's heart condition, but accessed in its Turkish translation, was also included in the findings in tabular form.

Documents related to the national and international correspondence regarding Atatürk's 2 cardiac illnesses, experienced in 1923 and 1927, have been identified in the Ottoman Archives, the Republic Archives, and the Archives of the Ministry of Foreign Affairs.

It has been understood from 2 national newspaper articles that Atatürk's heart condition attracted significant attention from the national public as well.

DISCUSSION

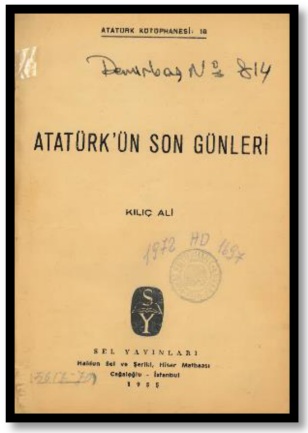
What Happened Regarding Ataturk's Heart Disease?

The political turmoil and wars in the late Ottoman Empire created conditions that demanded greater focus on public health. While various measures were introduced to protect it, not all health-related challenges of the period were fully resolved.[19] In this context, the demanding duties and extraordinary conditions Atatürk faced until the Republic's establishment likely led to significant stress. His lifestyle also resulted in irregular eating, lack of sleep, and excessive coffee and cigarette consumption. Although the proclamation of the Republic brought some relief, the accumulated fatigue began to affect his health, first appearing as cardiac symptoms.[4,5]

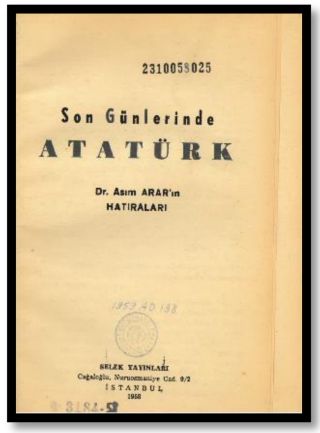
The first reports about Atatürk's health after his election as President emerged in November 1923. It is known that during a lunch, he suffered a heart attack at the table, and Dr. Refik Saydam, who was present, intervened and administered a morphine injection.[20] According to Mango, Atatürk became ill on November 11 after lunch. Dr. Refik Saydam performed the initial examination and diagnosed a cardiac spasm. Two days later, Atatürk had another episode while walking in the garden. Dr. Neşet İrdelp, urgently called from Istanbul, confirmed the diagnosis on November 13 and advised rest and dietary restrictions.[4,5] This incident is regarded as Atatürk's first documented cardiac event (Table 1).[4] Six days after the incident, Dr. Neşet İrdelp told journalists that Atatürk's condition was not a heart attack but the result of fatigue, and that he had fully recovered after 6 days of rest.[5] Following Dr. Neşet İrdelp's recommendation for rest, Atatürk traveled to İzmir, where Dr. İrdelp continued monitoring his condition. In an official statement dated February 2, 1924, Dr. İrdelp noted that Atatürk had experienced chest pain (angine de poitrine) due to overwork, but that his heart, blood vessels, and blood pressure were normal, and his overall health had significantly improved with rest.[4,21] Archival documents from 1923 reveal that Dr. Neşet İrdelp was invited from within Türkiye to diagnose and treat Atatürk's heart condition. Additionally, they show that Prof. Kraus, a prominent foreign cardiologist, was identified as a suitable expert and invited for consultation. The records include details of negotiations regarding his requested terms, agreed-upon remuneration, and his condition to be accompanied by an assisting physician (Figure 2).[22–25] Based on this information, it is clear that in 1923, Dr. Neşet İrdelp played a direct role in diagnosing and treating Atatürk's heart disease. Although plans were made to bring Prof. Kraus and a second physician of his choice to Türkiye as consultants, available records indicate that they did not travel to Türkiye at that time and did not take part in Atatürk's cardiac care.

News of Atatürk's disease spread both within Türkiye and abroad, understandably generating widespread concern and public interest.[21] Indeed, when Atatürk traveled to İzmir for rest on December 14, 1923, following medical advice, the newspaper İstikbal reported the event with the headline: "The President is Going to İzmir for Rest."[26] After news of Atatürk's illness circulated from Rome and reached Greece, Foreign Minister Tevfik Rüştü Aras, then in Athens as Chairman of the Turkish Delegates of the Mixed Exchange Commission, requested clarification from the Prime Ministry. In an official response dated December 18, 1923, it was stated that the reports were unfounded and that Atatürk's health was in good condition.[27] Following Dr. Neşet Ömer İrdelp's statement on February 2, 1924, regarding Atatürk's condition in İzmir, *Tanin* newspaper reported the news with the headline: "His Excellency the President of the Republic is Completely and Absolutely Well" on February 4, 1924 (Figure 3).[28] At the time, opponents of the Republic remained active and sought opportunities to further their agendas, while unresolved issues persisted in the international political landscape. For these reasons, it is believed that Atatürk's illness was deliberately kept confidential to avoid jeopardizing the stability and continuity of the Turkish state. Nonetheless, it is clear that his first cardiac episode in 1923 was closely monitored by both national and international public opinion.

Following the proclamation of the Republic, a politically turbulent period began, marked by growing challenges in governance. Efforts to build the new state brought numerous political struggles at both national and international levels. As a result, Atatürk was forced to continue living under conditions that negatively impacted his health.[20] Atatürk's second cardiac episode occurred in late May 1927. He experienced intense chest and left arm pain, reportedly saying, "Take this pain away from here." Dr. Refik Saydam and Dr. İsmail Arar responded immediately, and Dr. Neşet İrdelp



1955, Kılıç Ali, Sel Yayınları



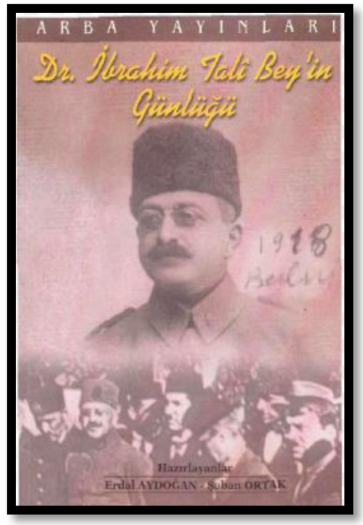
1958, İsmail Arar, Selek Yayınları

1959, Ruşen Eşref Ünaydın, Türk Tarih Kurumu Basımevi

1973, Hasan Rıza Soyak, Yapı ve Kredi Bankası A.Ş. Yayınları

1973, Hasan Rıza Soyak, Yapı ve Kredi Bankası A.Ş. Yayınları

1981, Prof. Dr. Bedi Şehsuvaroğlu, Hür Yayın



2000, Dr. İbrahim Talî Bey'in Günlüğü, Erdal Aydoğan, Şaban Ortak, Arba Yayınları

Figure 1. Primary sources containing somprehensive information on Atatürk's diseases.

Table 1. Findings from Sources Regarding Atatürk's Cardiac Disease in 1923

Physicians	Dr. Refik Saydam, Prof. Dr. Neşet Ömer İrdelp, Dr. İbrahim Tali Bey.[4,43,44]
Symptoms	In 1923, Atatürk seemed healthy and energetic, running and jumping behind the mansion. Suddenly, he turned pale and began sweating. He said, "Friends, I feel unwell," and sat on a rock. Seeing others worried, he stood up, walked, and reassured them: "Don't worry, it has passed, I'm fine now."[43]
	Signs of the heart attack he experienced were clearly evident on his face. He appeared pale, experienced shortness of breath, and exhibited noticeable general weakness. This weakness might have been the result of prolonged fasting.[45]
	Atatürk's first heart attack occurred in early November 1923, right after lunch, before leaving the dining table. Dr. Refik Saydam, who was treating Lady Latife for pneumonia nearby, quickly intervened with a morphine injection, easing Atatürk's symptoms.[4]
	Two days later, again after lunch, while strolling in the garden, he experienced a similar but milder episode. Consequently, Prof. Dr. Neşet Ömer Bey (İrdelp), a cardiologist from Istanbul, was invited to Ankara.[4]
	I arrived in Ankara on Tuesday, November 27, 1923. Subsequently, I visited the Minister of Health, Refik Bey, and learned that Ghazi Pasha had experienced another mild attack. At that time, consideration was being given to inviting a specialist physician from Europe.[44]
Physical examination findings	No pathology was detected either in the heart or the lungs. Additionally, his blood pressure was found to be normal.[4,43]
Laboratory tests	On Wednesday, November 28, 1923, Prof. Dr. Neşet Ömer Bey re-examined Atatürk and ordered blood tests for the next day. On Sunday, December 2, Dr. İbrahim Talî visited the Bacteriology Laboratory and was given verbal results. The written report, received on Monday, December 3, confirmed that the test results were negative.[44]
Diagnosis	Dr. Neşet Ömer Bey, who had been summoned from Istanbul, promptly examined Atatürk and conducted the necessary tests. He diagnosed the illness as resulting from fatigue caused by continuous overwork.[43]
	He diagnosed the President's chest pain as neurogenic pain (elemi asabî), attributed to excessive workload.[43]
	On November 14, 1923, Prof. Dr. Neşet İrdelp arrived in Ankara by train. Upon visiting Çankaya, he thoroughly examined Atatürk and diagnosed the episodes as neurogenic pain (elemi asabî), resulting from overwork and fatigue.[4]
	Based on his observations and examinations, Prof. Dr. Neşet Ömer İrdelp concluded that Atatürk had not experienced episodes of angina pectoris (angine de poitrine). Furthermore, he reported that Atatürk was in completely good health.[8]
Treatment and recommendations	The first attack happened in early November 1923, right after lunch, before Atatürk left the table. Dr. Refik Saydam, who had cardiac stimulants with him, quickly gave a morphine injection, relieving the symptoms.[4]
	After several days of rest, it was advised that he can travel to a location on the Mediterranean coast for a change of climate.[4]
	Among the recommendations given to Atatürk was to reduce his consumption of tobacco and coffee.[4]
	On Tuesday, November 13, 1923, Neşet Ömer Bey recommended dietary restrictions to Atatürk.[44]
	On Thursday, December 6, 1923, Refik Bey, Neşet Ömer Bey, and İbrahim Talî Bey unanimously decided that Atatürk should undergo serious medical treatment.[44]
Etiology	On November 14, 1923, Prof. Dr. Neşet İrdelp arrived in Ankara by train. Upon visiting Çankaya, he conducted a thorough examination of Atatürk and diagnosed the episodes as neurogenic pain (elemi asabî), attributing them to excessive workload and fatigue.[4]
	Following clinical examination and laboratory tests, Neşet Ömer Bey did not consider this cardiac episode serious, attributing it to fatigue and recommending rest.[8]
Result	On the evening of December 31, 1923, Atatürk traveled to İzmir with his spouse and stayed at Lady Latife's Göztepe mansion until February 20, 1924, a total of 50 days. Though initially affected by his recent health episode, after 5-10 days of rest and dietary care, he resumed his usual routine, returning to frequent coffee and smoking, albeit slightly reduced.[4]

was urgently called to Ankara. After examining Atatürk, Dr. İrdelp attributed the episode to extreme fatigue. At the time, Atatürk was facing political pressures while also working tirelessly on the Great Speech, sometimes for up to 30 hours straight. It was then decided to invite Prof. Dr. Kraus, Director of Internal Medicine at the University of Berlin, and Prof. Dr. von Romberg, Director of Internal Medicine at the University of Munich, for consultation. The Turkish Embassy in Berlin was instructed accordingly. A medical observation report in French, prepared by Dr. Asım İsmail, detailing Atatürk's health history, was created for the visiting physicians (Table 2).[4]

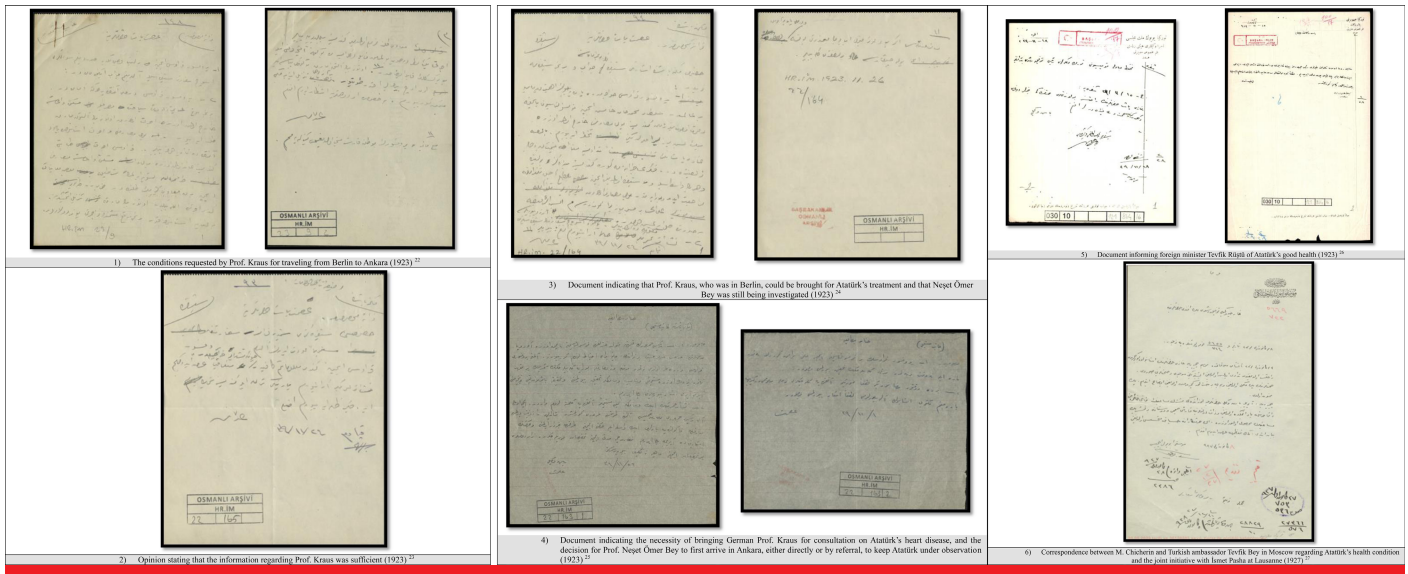


Figure 2. Archival documents related to Atatürk's heart disease.

The observation report states that the patient, aged 46, experienced radiating chest and left arm pain on 3 occasions. His medical history notes that his mother died of heart failure secondary to aortitis and that he had no serious childhood illnesses. He was identified as a heavy smoker and had suffered physical and mental exhaustion over the past 9 years due to intense and stressful work. Three years prior, he had retrosternal pain lasting about 20 minutes, followed 2 days later by exertion-induced pain of a similar nature, which resolved with rest and diet. The second significant episode occurred on the night of May 22-23, 1927, with recurring pain of the same type. His general condition was described as good. During the 1923 episode, blood pressure measured with a Vaquez sphygmomanometer was 14/9, with extrasystoles observed every 20-40 beats. In the 1927 episode, blood pressure measured with a Pachon sphygmomanometer was 14.5/9, with similar extrasystoles. Auscultation and percussion findings were normal. Radioscopic examination showed the heart and aortic vessels to be of normal size. The digestive and excretory systems were also normal. Rales had been present at the base of the left lung for the past year, and decreased leg reflexes were noted. Morphine was administered during both episodes. Iodine was prescribed for 2 months following the first. For the second episode, recommendations included rest, a ban on smoking and alcohol, and dietary restrictions.[8,18] Hasan Rıza Soyak also confirms the details provided in the observation report. He further notes that on May 28, Atatürk developed a fever reaching 40°C, accompanied by chills. His condition improved over the following days with treatment, and a peripheral smear test yielded negative results (Table 3).[4]

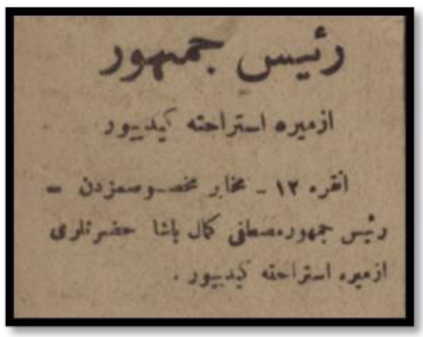
Prof. Dr. Kraus and Prof. Dr. von Romberg arrived in Ankara on June 6, 1927, and examined Atatürk at Çankaya. They stayed in Ankara for 4 days.[29] After a thorough examination, the German professors diagnosed Atatürk with angina caused by excessive smoking and strongly recommended rest along with a complete ban on tobacco use. In a 1958 article, Dr. Asım Aras referenced their diagnosis of angine de poitrine due to tabagique (excessive tobacco use), interpreting it in modern medical terms as a "myocardial infarction."[18]

Among the archival documents, one dated December 8, 1927, stands out regarding Atatürk's heart condition. According to this document, Russia inquired whether Atatürk was suffering from kidney disease. In response, the Turkish Ministry of Foreign Affairs stated that he did not have such a condition and that his overall health was good (Figure 2).[30] As in 1923, Atatürk's serious heart disease in 1927 was kept secret. This was considered necessary, as the internal and external challenges of the time threatened to undermine efforts to establish order in the newly founded state and could have provided an opportunity for both domestic opposition and foreign intervention.

However, around 8 months after Atatürk's heart disease, the French newspaper *L'Echo de Paris* published an article on February 13, 1928, titled "Kemal Pasha's Health is in Danger." The report claimed that Atatürk had fainted in the street in Ankara. On the same day, The *Daily Telegraph* in London also published the story, which was then picked up by the Reuter Agency and circulated widely across the European press. This news triggered pessimistic commentary in Türkiye and sparked public concern over the future of the country.[20]

Doctors Working During Atatürk's Heart Disease

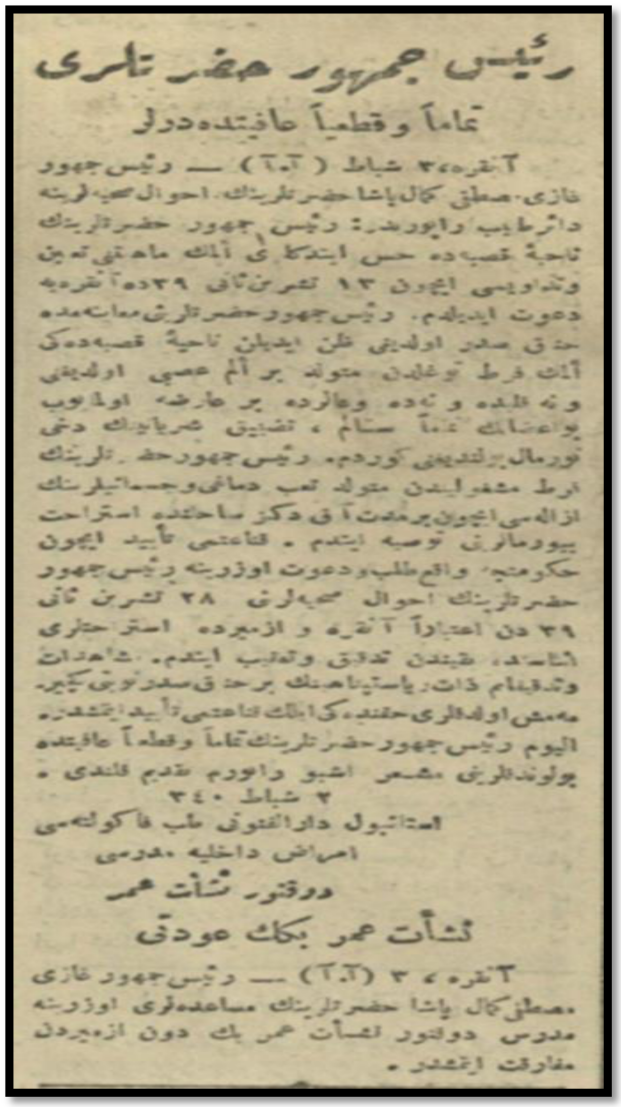
Dr. Refik Saydam (1881-1942): He graduated from the Imperial School of Medicine (Mekteb-i Tıbbiye) in 1905 with the rank of captain. After serving in several military hospitals, he was sent to Germany in 1910. Upon returning, he held various medical and health-related positions during the Balkan Wars, World War I, and the years that followed. In 1919, he joined Atatürk in Samsun and actively participated in the Turkish National Struggle. ***Ord.Prof. Dr. Neşet Ömer İrdelp (1882-1948):*** He graduated from the Civil Imperial School of Medicine (Mekteb-i Tıbbiye-i Mülkiye) in 1902. In 1908, he went to Paris, where he worked with 2 leading physicians


رئیس جمهور

ازمیره استراحته کیدیور

انقره ۱۲ - مخابر مخصوصمزدن -
رئیس جمهور مصطفی کمال پاشا حضرتلری
ازمیره استراحته کیدیور .

İstikbal Newspaper, December 14, 1923,
"The President Is Traveling to İzmir for Rest"
(Reis-i Cumhur İzmir'e İstirahat İçin Gidiyor)[28]


رئیس جمهور حضرتلری

تماماً وقطعیاً عافیتده درلر

آنقره ۳ شباط (آ.آ) — رئیس جمهور غازی مصطفی کمال پاشا حضرتلرینك احوال صحیه لرینه دائر طیب رایورلرندن: رئیس جمهور حضرتلرینك ناحیهٔ قصبه ده حس ایتدکلری آلك ماهیتی تعین وتداویسی ایچون ۱۳ تشرین ثانی ۳۳۹ده آنقره یه دعوت ایدیلدم. رئیس جمهور حضرتلرینی معاینه مده حدق صدر اولدیغی ظن ایدیلن ناحیهٔ قصبه ده کی آلك فرط توغلدن متولد بر آلم عصبی اولدیغی ونه البته ونه ده وعارضه بر عارضه اولدیغی براعضالك عموماً سالم، تشدید ضربانك دنی نورمال بولندیغی کوردم. رئیس جمهور حضرتلرینك فرط مشغولیتدن متولد تعب دماغی وجسمانیلرینك ازاله سی ایچون برمدت آق دکز ساحلنده استراحت بیورمالرینی توصیه ایتدم. قناعتی تأیید ایچون حکومتجه واقع طلب ودعوت اوزرینه رئیس جمهور حضرتلرینك احوال صحیه لرینی ۲۸ تشرین ثانی ۳۹ دن اعتباراً آنقره و ازمیرده استرحتری اثناسنده، یقیندن تدقیق وتداقب ایتدم. شاهدات وتدقیقاتم ذات ریاستپناهینك برحدق صدر تویی کیبی، همیشه اولدقلری حقنده، کی آلك قناعتی تأیید ایتمکده الیوم رئیس جمهور حضرتلرینك تماماً وقطعاً عافیتده بولوندقلرینی مشعر اشبو راپورم تقدیم قلندی.

۲ شباط ۳۴۰

استانبول دارالفنون طب فاکولته سی
امراض داخلیه مدرسی
دوکتور نشأت عمر

نشأت عمر بکك عودتی

آنقره ۳ (آ.آ) — رئیس جمهور غازی مصطفی کمال پاشا حضرتلرینك مساعده لری اوزرینه مدرس دوکتور نشأت عمر بك دون ازمیردن مفارقت ایتمشدر.

Tanin Newspaper, February 4, 1924,
"*His Excellency the President Is Completely and Absolutely in Good Health*"
(Reis-i Cumhur Hazretleri Tamamen ve Kat'iyyen Afiyettedirler)[29]

Figure 3. News reports reflected in the press regarding Atatürk's heart disease.

of the time, Henry Vaquez and Vidal. Upon returning to Istanbul, he completed his specialization in internal medicine at the Darülfünun Medical Faculty in 1910. During the war years, he served both on the front lines and in efforts to combat epidemics across various regions. In 1921, he rejoined the faculty and was appointed professor of internal medicine, later becoming an Ordinary Professor in 1933. His significant contributions to cardiology include lectures on cardiac diseases (Emraz-ı Kalbiye Konferansları, 1911), diseases of the heart and viscera (Kalp ve Ev'iye Emrazı, 1923), and clinical electrocardiography (Klinik Elektrokardiyografi, 1934). ***Dr. İbrahim Talî Öngören (1875-1952):*** He graduated from Mekteb-i Tıbbiye in 1893 with the rank of captain and became a certified surgeon in 1896. He served on various fronts, holding military ranks such as senior captain (kolağası), colonel (miralay), and also served as a district governor. In 1912, he conducted research on military surgery in Germany. In 1919, he joined Atatürk in Samsun and participated in the Turkish National Struggle. ***Dr. Asım Arar (1890-1955):*** He graduated from the Darülfünun Faculty of Medicine in 1911 and began his specialization in internal medicine at the same institution. Between 1916 and 1918, he completed his training in Berlin. ***Prof. Dr. Friedrich Kraus (1858-1936)****:* He was born in Böhmen/Bodenbach and graduated from the University of Prague in 1882. Between 1882 and 1885, he worked as an assistant in the institutes of physiology, anatomy, pathology, and chemistry. In 1893, he joined the Rudolf Hospital in Vienna and, a year later, became a professor of medical pathology and therapy. In 1902, he moved to the Berlin Medical School, where he served as dean and continued working until his retirement. His main focus was internal medicine, with a particular interest in heart diseases. ***Prof. Dr. Ernst Von Romberg (1865-1933)****:* He was born in Berlin and pursued his medical studies in Tübingen, Heidelberg, and Berlin, completing his

Table 2. Findings from Sources Regarding Atatürk's Cardiac Disease in 1927

Physicians	Dr. Refik Saydam, Prof. Dr. Neşet Ömer İrdelp, Dr. Asım Arar, Prof. Dr. Kraus (Consultant), Prof. Dr. Von Romberg (Consultant).[4,8,18]
Symptoms	According to Refik Bey, in 1927, Ghazi suffered a severe nighttime heart attack. Though medication eased the pain, he remained bedridden, reporting intense chest discomfort and tightness. Prof. Dr. Neşet Ömer Bey confirmed the heart attack, attributing it to tobacco-induced angina. While confident in the diagnosis and treatment, it was decided to consult more specialized physicians for further evaluation.[18]
	On the evening of May 28, the patient experienced intense shivering and a fever reaching 40°C, followed by heavy sweating hours later. By the next morning, the fever slightly exceeded 37°C but normalized by evening. The only remaining symptoms were fatigue and a mild headache. A blood smear (frotté) performed the next day was negative.[18]
	In late May 1927, Ghazi experienced severe chest pain radiating to his left arm, reaching the elbow, with 3 similar episodes over the next 3 days. A similar episode had occurred in November 1923, involving intense retrosternal pain radiating to the left arm, lasting about 20 minutes and accompanied by distress and sweating. Two days later, a milder episode followed, after which he adhered to a strict 2-month diet, avoiding tobacco and alcohol, leading to rapid recovery. Three years and seven months later, on the night of May 22-23, 1927, the pain returned and occurred 4 times within 3 days—this time milder, but longer-lasting.[4]
	Three years later, on the night of May 22-23, 1927, the President woke with severe chest pain, sweating, and nausea. The episodes recurred twice in the following days.[8]
Physical examination findings	The patient's general condition remained stable. During the first episode 3.5 years earlier, blood pressure was 140/90 mmHg (measured by Vaquez), with extrasystoles occurring every 20-40 beats. In the recent episodes, blood pressure peaked at 145/90 mmHg (measured by Pachon), with continued extrasystoles. External cardiac exam was normal, and orthodioscopic evaluation showed normal heart and aortic size. Digestive and urinary systems were also normal. Rales had been present in the lower left lung for a year. Leg reflexes were reduced, and the Wassermann test was negative.[4]
Laboratory tests	On the evening of May 28, the patient experienced intense shivering and a fever reaching 40°C, followed by heavy sweating a few hours later. The next morning, his temperature was slightly above 37°C but normalized by evening. He reported only fatigue and a mild headache. A blood smear performed the next day was negative.[4,8]
Diagnosis	After evaluating the patient's condition and based on the observed symptoms, we concluded that this episode could be an attack of angina pectoris, known as "Angine de poitrine" or "Hunnak-ı Sadır".[18]
	In conclusion, the specific terminology used to label the illness was of minor importance, as the symptoms remained consistent. Based on current medical knowledge, it is evident that the condition Ghazi experienced was a mild myocardial infarction. However, around 28 years ago, due to limited understanding and diagnostic capabilities, these episodes were classified as "Tabagique," referring to tobacco-induced angina.[18]
	On the day they arrived, the foreign specialists were promptly received by the patient. Alongside Refik Bey and Neşet Ömer Bey, I attended the initial examination and acted as interpreter. Ghazi personally described the symptoms he had experienced during the episode. The German specialists, aligning with the assessment, diagnosed the condition as tobacco-induced angina and asked me to record Ghazi's account.[18]
	In his 1956 memoirs, Dr. Asım İsmail Arar wrote that, after examinations and evaluations, the professors concluded Ghazi had suffered an anginal attack caused by excessive smoking. He later added, "Today, we would define this as a mild myocardial infarction. However, at that time, about 28 years ago, due to limited knowledge and investigation, we classified such episodes as 'Tabagique,' meaning tobacco-induced angina."[4]
	From the beginning, Prof. Neşet Ömer İrdelp maintained that the chest pain, initially thought to be angina pectoris (angine de poitrine), was actually neurogenic pain (elemî asabî) caused by excessive workload, stressing that there were no abnormalities in the heart or blood vessels.[4]
	The condition diagnosed at the time as angina pectoris (Angine de poitrine) could today, with advanced diagnostic methods, be classified as myocardial infarction (infarctus).[8]
Treatment and recommendations	Upon the recommendation of Dr. Refik Saydam, it was decided to invite several specialists from Germany.[18]
	Since the patient reported experiencing heaviness in his head due to tobacco withdrawal, starting from June 4, he was permitted to consume 6 cigarettes and 3 cups of coffee daily.[18]
	During the initial attack, the patient was given a morphine injection and prescribed small doses of iodide for 2 months. In later episodes, 1 cg of morphine was administered during each pain episode. The patient was placed on strict rest, with all activities, tobacco, and alcohol prohibited. A milk and vegetable-based diet was recommended.[4]
	Following treatment, it was strongly advised that the patient minimize tobacco use and strictly avoid overexertion.[4]
	After reviewing all examinations, the professors confirmed their initial diagnosis, concluding that Ghazi had experienced angina pectoris due to excessive smoking. They approved the treatment given and strongly recommended reducing alcohol and tobacco use, along with avoiding overexertion.[8]
Etiology	Ultimately, after completing their evaluations, the professors confirmed their initial diagnosis: Ghazi had experienced an anginal episode caused by excessive smoking. They deemed the treatment appropriate and recommended preventive measures, stressing the need to minimize alcohol and tobacco use and avoid excessive exertion.[8,18]
Result	This serious cardiac disease experienced by Atatürk fortunately resulted in a positive outcome and did not recur, an occurrence attributable largely to good fortune. Otherwise, as commonly observed in similar cases, repeated episodes could have led to an earlier adverse outcome. Unfortunately, the expected consequence eventually occurred 11 years later. Nevertheless, despite Atatürk's excessive use of tobacco and alcohol and his previous health episodes, no signs of weakness in his cardiac or circulatory system had ever been detected.[18]

Table 3. "Atatürk's Observation Report" Prepared for Consultant Physicians[8,18]

Atatürk's Observation Report
Approximately 2 weeks ago, the patient reported experiencing severe pain originating in the central chest area and radiating toward the left arm. This pain has recurred twice since then, though with reduced intensity. The patient is 46 years old. His father died at a young age due to a sudden illness, while his mother passed away at the age of 65 from heart failure caused by chronic aortitis. He has 1 sister who is currently in good health.
Medical history: The patient has not suffered from any significant acute or chronic illnesses apart from common childhood infectious diseases and malaria. He contracted gonorrhea (blennorrhagia) before the age of 20, which occasionally recurred and resulted in pyelitis (kidney inflammation) on the left side 12 years ago. He is a heavy smoker and has habitually consumed alcoholic beverages since his youth. Additionally, over the past 9 years, he has been subjected to severe mental and physical exhaustion (overwork). Three years earlier (in November 1923), the patient experienced severe retrosternal chest pain radiating down to his left elbow for the first time. This pain lasted approximately 20 minutes and was accompanied by distress and sweating. Two days later, during a walk following lunch, the episode recurred, albeit milder and shorter in duration. Following these episodes, the patient underwent a strict diet for 2 months, completely abstaining from tobacco and alcohol. His health rapidly improved and soon returned to normal. However, 3 years and 7 months after the initial episode, on the night of May 22-23, the patient experienced another similar episode of pain while lying in bed. This crisis recurred once more 3 days later, and twice within a span of 3 hours on the fourth day. In these recent episodes, the pain was milder but lasted longer compared to the initial attack.
General condition of the patient: The patient's overall health condition is normal, without any notable abnormalities. During the initial episode approximately 3.5 years ago, blood pressure was measured at a maximum of 140 mmHg and a minimum of 90 mm Hg (using Vaquez). Extrasystoles were observed every 20-40 heartbeats. In recent episodes, blood pressure was recorded at a maximum of 145 mm Hg and a minimum of 90 mm Hg (using Pachon), with the extrasystoles persisting. External cardiac examination (auscultation and percussion) revealed no abnormalities. Radioscopic assessment indicated that the volumes of the heart and aorta were normal. Digestive and urinary systems are functioning normally. However, respiratory examination has revealed rales in the lower region of the left lung for the past year. A decrease in leg reflexes was observed, and the Wassermann test yielded negative results.
Treatment: During the initial episode, the patient received a morphine injection and was administered small doses of iodide for 2 months. In the recent episodes, 1 cg of morphine was injected with each recurrence of pain. Additionally, all forms of mental and physical activity, smoking, and alcohol consumption were strictly prohibited, and absolute bed rest was enforced. A specialized diet consisting primarily of milk and vegetables was implemented. The patient has completely abstained from alcohol consumption over the past month.

doctorate in Leipzig in 1888. In 1891, he finished his specialization in internal medicine and became a professor in 1895. He conducted extensive research and authored works on heart and circulatory system diseases.[7] Prof. Kraus was a highly knowledgeable, cultured, and internationally renowned physician. Known for his open-mindedness and exceptional intelligence, he was frequently consulted in the treatment of monarchs and their families, with many relying on his medical opinions and recommendations. He even traveled to Istanbul during World War I to treat Sultan Reşad. While not as internationally recognized as Kraus, Prof. von Romberg was well-regarded within German medical circles, particularly for his expertise in heart disease.[18] An examination of these physicians' backgrounds reveals that they were notable specialists in cardiac diseases of their time, possessing significant expertise and recognition in the field of cardiology (Figure 4).

Evaluation of the Diagnosis and Treatment of Atatürk's Heart Disease in Terms of Medical Developments

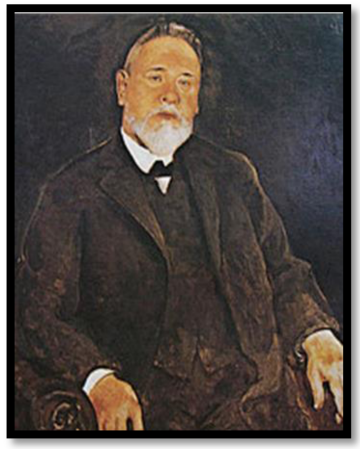
Wilhelm Conrad Röntgen's 1895 discovery of X-rays quickly found medical use, especially in locating foreign objects from injuries and gunshots, proving vital in military surgery. In 1896, Dr. Esat Feyzi, an intern at Mekteb-i Tıbbiye-i Şahane in Istanbul, took the first radiographs in the Ottoman Empire. These efforts advanced radiographic work at the medical school, leading to the use of X-rays for diagnosing war injuries during the 1897 Turkish-Greek War.[31] In 1896, American radiologist Morton began using X-rays to outline the heart. A year later, Walsh produced a chest X-ray showing the heart's size and position, marking the start of radiographic diagnosis of cardiac and aortic conditions. In 1902, Albert Abrams began measuring normal heart dimensions, later using fluoroscopy, orthodiography, and radiography. Kassabian's 1907 textbook included Moritz's heart size chart from Germany. Later, Claytor and Merrill studied the link between heart and body size, and lesions were identified using orthodiagrams.[32] From the perspective of the period, radiology was a contemporary scientific method used to detect pathologies by visualizing the heart and aorta. It appears that this method was also employed in diagnosing Atatürk's heart disease.

Dutch physiologist Willem Einthoven invented electrocardiography in 1902, advancing earlier, limited electrophysiologic studies of the heart. This invention provided physicians with a powerful tool for diagnosing conditions like arrhythmias and acute myocardial infarction (AMI). As a result, clinical practice began shifting from reliance solely on the senses and stethoscope to incorporating machines and technical methods.[33] There is no definitive record of when electrocardiography was first used in the Ottoman Empire. However, given Dr. Neşet İrdelp's strong interest in cardiology, it is likely that he closely followed advancements in this field. If an electrocardiography device existed in Türkiye at the time, it was most likely housed in the Internal Medicine Clinic of the Darülfünun Medical Faculty, where Dr. İrdelp worked. Therefore, it is plausible that an electrocardiogram (ECG) could not be performed on Atatürk while he was in Ankara.

Human blood vessels were first imaged in January 1896, just a month after the discovery of X-rays. Haschek and Lindenthal used Teichmann's mixture of calcium carbonate to visualize the vessels of an amputated hand. In 1920, a radiographic atlas published in England included clear images of arteries in cadavers. Arterial radiography on living patients began in 1923. By 1938, Castellanos et al published detailed angiocardiographic images, identifying both normal and pathological conditions such as atrial and ventricular septal defects, pulmonary stenosis, tetralogy of Fallot, and transposition of the great arteries, marking a significant advancement in cardiac imaging (Figure 5).[32] Although arterial angiography on living patients began in 1923, the first cardiac angiography was not performed until 1938. Therefore, considering the scientific context of the time, the absence of angiographic methods in diagnosing Atatürk's heart disease is entirely expected.

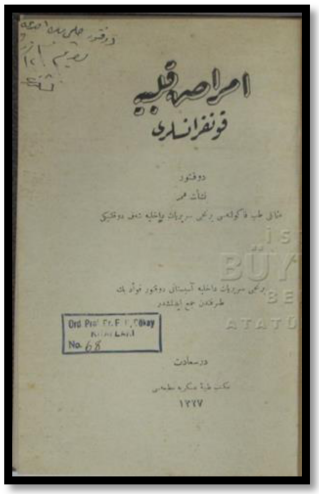
In 1920, Eyster and Meek reported capturing radiographs of the human heart simultaneously with electrocardiographic tracings. By 1922, Karshner and Kennicott had described radiographic findings associated with various cardiac conditions, including mitral stenosis with pulmonary edema, mitral regurgitation, aortic regurgitation, and pericardial effusion. In a seminar presentation, it was emphasized that X-ray imaging provided the most accurate method for assessing cardiac size and morphology in clinical practice. This was particularly important in patients where physical examination was limited, such as those with obesity or emphysema, making radiography potentially the only viable diagnostic tool. The presentation also noted that X-rays could reveal pericardial calcifications and aortic aneurysms, and accurately assess the size of the aorta, left atrium, and, in some cases, the left ventricle. Additionally, abnormalities in hilar shadows and pulmonary arteries were sometimes detectable only through radiological means. The use of fluoroscopy to observe the heart and major vessels in real-time further highlighted the growing diagnostic value of radiographic techniques in cardiology during that period.[32] Scientific advancements indicate that after 1920, cardiovascular diseases began to be diagnosed using a combination of

Ord. Prof. Dr. Neşet Ömer İrdelp (1882-1948)



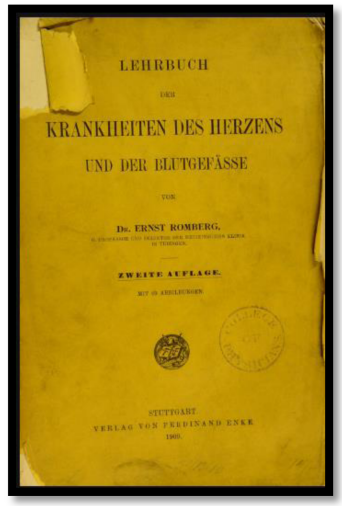
Prof. Dr. Friedrich Kraus (1858-1936)

Prof. Dr. Ernst Von Romberg (1865-1933)



Emrâz-ı Kalbiye Konferansları (1911)
Heart Disease Conferences

Das Elektrokardiogramm (1910)
Electrocardiogram



Lehrbuch Der Krankheiten Des Herzens Und Der Blutgefässe (1909)
Cardiovascular Diseases Textbook

Figure 4. Cardiologists who diagnosed and treated Atatürk's heart disease and wrote works in the field of cardiology.

X-rays and electrocardiography. However, there is no evidence that this combined diagnostic method was applied in Atatürk's case.

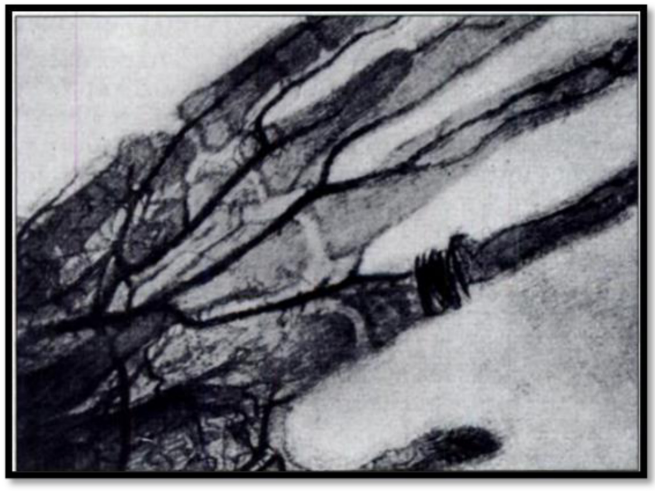
The discovery and clinical use of biomarkers, key tools in diagnosing and managing cardiovascular diseases, represent a major milestone in medical history. The first heart-related biomarker, AST, was identified in 1954. Over time, additional biomarkers were discovered, including lactate dehydrogenase, creatine kinase (CK, CK-MB), heart-type fatty acid-binding protein, CK-MB mass, troponins (TnI, TnT), B-type natriuretic peptide, high-sensitive C-reactive protein, Galectin-3, sLOX-1, and most recently, sST2 in 2013.[34] Considering this historical timeline, it is clear that biomarkers were not yet available for diagnostic use during the period when Atatürk experienced his cardiac diseases.

The medical diagnostic potential of sound waves was recognized as early as the 17th century. However, research specifically focused on the diagnostic use of echocardiography began in the 1950s, and it was introduced into clinical practice as a cardiac imaging and diagnostic tool in the early 1960s.[35,36] The use of echocardiography in the diagnosis of heart diseases emerged well after the period in which Atatürk's cardiac disease was observed.

According to the European Society of Cardiology (ESC) guidelines, acute coronary syndrome (ACS) is diagnosed based on recent-onset clinical symptoms or signs, with or without changes on a 12-lead ECG and elevated cardiac troponin levels. Acute coronary syndrome is categorized into 2 main types: unstable angina and AMI. Acute myocardial infarction s diagnosed by elevated cardiac troponin levels, in line with the fourth universal definition of myocardial infarction. Unstable angina involves myocardial ischemia without detectable myocardial necrosis. It is typically marked by retrosternal chest pain lasting over 20 minutes, possibly radiating to the left arm, new and severe chest pain, angina that is worsening in frequency or duration, and angina occurring shortly after a recent myocardial infarction.[37] At the time of Atatürk's diagnosis, only clinical symptoms and patient history (anamnesis) were used, as diagnostic tools such as ECG and cardiac troponin testing were not yet available. He was diagnosed with angina, attributed primarily to excessive fatigue and tobacco use, rather than ACS. However, in 1958, Dr. Asım Arar, who documented Atatürk's medical history, retrospectively described the condition as a myocardial infarction based on the clinical picture.

Aspirin is one of the oldest known medications. After Felix Hoffmann synthesized acetylsalicylic acid in 1897, Bayer registered it under the trademark Aspirin in 1899. It was patented in the U.S. in 1900, and by 1904, Bayer began producing it in tablet form.[38] It took until 1925 for the drug to enter Türkiye.[39] In 1948, Paul Gibson recommended salicylic acid for the treatment of coronary thrombosis. By then, even in its aspirin form, the drug was already well-known for its analgesic and antipyretic properties.[38] In 1974, Elwood et al conducted the first randomized controlled trial on the secondary prevention of myocardial infarction, demonstrating the beneficial effects of aspirin in reducing the risk of further cardiac events.[38,40] Recent evidence from contemporary studies confirms that aspirin remains a highly effective medication for both the treatment and prevention of cardiovascular diseases.[40,41] In ACS, aspirin should be given as soon as possible after diagnosis and then used as maintenance therapy.[37] In retrospect, Atatürk's symptoms in 1923 and 1927 were most likely consistent with ACS. However, since the antiaggregant effect of aspirin was not yet known, it is believed that aspirin was not administered. Instead, morphine, still recognized today as an effective pain reliever, was prescribed during both cardiac episodes.

Atatürk spent much of his life engaged in struggle and hard work, often in wars and on the front lines. He endured long periods of intense effort and exhaustion, maintaining this demanding pace through the end of the War of



1896, First angiography image taken on an amputee hand.

1938, First in vivo cardiac angiography image.

Figure 5. The first angiography image and the first in vivo cardiac angiography image.[32]

Independence. These harsh working conditions inevitably affected his health. The founding of the Republic and the reform era that followed brought significant political challenges, adding intense stress that further impacted him physically.[42] Heavy smoking and chronic stress are well-established risk factors for coronary artery disease and were likely major contributors to the cardiac episodes Atatürk experienced.

Limitations of the Research

Since modern cardiac diagnostic tools such as biomarker testing, electrocardiography (ECG), echocardiography, and angiography were not available during the period covered by this study, Atatürk's heart conditions were evaluated solely based on clinical symptoms and physical examination findings. This limitation makes it difficult to establish a definitive diagnosis. The study is based on archival documents, physicians' memoirs, and historical records from the time. However, the scarcity of primary sources and the unavailability of original medical records may have led to gaps in information or reliance on interpretation. Atatürk's health status has been retrospectively assessed using current medical knowledge, but fully aligning the medical terminology of that era with today's literature is not always possible. This evaluation considers early 20th-century medical practices, and thus, comparisons with modern cardiology have inherent limitations.

CONCLUSION

This study aims to evaluate the diagnostic and treatment processes of Atatürk's heart conditions within the context of the medical capabilities of his time, using historical data analyzed through qualitative research methods. Findings indicate that Atatürk experienced at least 2 cardiac episodes, in 1923 and 1927, both marked by chest pain radiating to the left arm. Based on the medical understanding of the period, these symptoms align with what is now classified as ACS. However, in the absence of widely available diagnostic tools such as cardiac biomarkers, electrocardiography (ECG), echocardiography, and angiography, diagnosis relied solely on clinical observation and symptom evaluation.

Atatürk's heart disease is linked to predisposing factors such as excessive workload, chronic stress, and heavy smoking. Current scientific evidence identifies these as major risk factors for coronary artery disease, with poor management potentially leading to myocardial infarction. In this context, the historical classification of his condition as angine de poitrine (angina pectoris), and its contemporary interpretation as a possible ACS, either unstable angina or ACI, is particularly significant.

According to the medical practices of the time, preventive measures for Atatürk's cardiac health focused on rest, dietary regulation, and limiting tobacco use. However, the absence of routinely used cardiovascular therapies, such as antiplatelet agents (e.g., aspirin), statins, ACE inhibitors, and beta-blockers, which are now essential in managing ACS, represented a significant limitation in the long-term treatment and management of his condition.

This historical analysis of Atatürk's cardiac condition offers important perspectives on the history of medicine and highlights the cardiological practices of the early 20th century. The findings underscore how scientific advancements in diagnosing and treating cardiovascular diseases have significantly contributed to the development of modern medicine. In this context, it can be concluded that history of medicine research not only enriches the understanding of past practices but also provides valuable insights for contemporary clinical care and the ongoing evolution of medical knowledge.

Availability of Data and Materials: The data sets generated and analyzed during the present study are available from the corresponding author upon reasonable request.

Ethics Committee Approval: As this research was conducted using historically significant documents that are publicly accessible and available for use and employed historical methodology and the qualitative research method of document analysis, ethics committee approval was not required.

Informed Consent: As this research did not involve the collection of data from human subjects, informed consent was not required.

Peer-review: Externally peer reviewed.

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