German progenitors of Polish orthopedists

Niemieccy protoplaści polskich ortopedów

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Abstract
The profiles of outstanding German orthopedists were presented as well as the influence they had on the development of Polish orthopedics. Their greatest achievements for European and world orthopedics have been outlined as well. Special attention was given to those luminaries of the German orthopedics under whom Ireneusz Wierzejewski, the creator of modern Polish orthopedics, began his studies, had his clinical practice and developed his professional interests. Among them, special attention is due to Ottmar Angerer, Fritz Lange, Albert Hoffe and Konrad Biesalski.

Key words: luminaries of the German orthopedics, Ottmar Angerer, Fritz Lange, Albert Hoffa, Konrad Biesalski

Streszczenie

Słowa kluczowe: luminarze ortopedii niemieckiej, Ottmar Angerer, Fritz Lange, Albert Hoffa, Konrad Biesalski
Ottmar Angerer (1850-1918)

Ottmar Angerer was born on 16 September 1850 in Geisfeld, Bavaria (Fig. 1). After completing medical studies in Würzburg, he became an assistant to von Linhart (Fig. 2) and then Ernst von Bergmann (Fig. 3), under whom he completed his habilitation in 1885 [1].

Bergmann headed the Charité Clinic in Berlin and was at that time one of Germany’s most outstanding surgeons. In 1885 Angerer, as a professor and the head, takes over the Surgical Polyclinic in Munich after Johann Nepomuku von Nussbaum (Fig. 4), who promoted the use of antisepsis.

Angerer also served as a physician for Luitpold, Prince Regent of Bavaria and as the chief physician of the medical corps of King Ludwig III of Bavaria. At that time, the Munich Clinic had 400 beds and could boast a modern operational and sterilization unit. The operating room was designed as an auditorium to allow students to view surgeries. At that time, due to the number of students, learning at patient's bed was practically impossible. In one of his few preserved letters written during his stay in Würzburg, Angerer apologized for his insufficient knowledge of French without which he was unable to critically evaluate an article that had been sent to him (Fig. 5).

In 1913 Angerer was elected President of the German Society of Surgery. His main interests were to fight wound infections. He also contributed to the development of surgery of the head and abdomen. For some time, at Ludwig-Maximilians University in Munich, Angerer supervised Fritz Lange, who since 1896 began treating patients in an orthopedic laboratory which he founded. Angerer’s greatest achievement was the promotion and wide application of diagnostic X-ray in Germany. He died on 12 January 1918 in Munich [1].
Fritz Lange (1864-1952)

Fritz Lange was born in Dessau in 1864 (Fig. 6) [2]. He attended school in Arnstadt. He studied medicine in Jena, Munich and Leipzig. After obtaining a doctorate, he worked as an assistant to Professor Buchner (Fig. 7) in Munich. His entire research and medical career was linked to this city. These were great years for German medicine. Here is a list of just a few luminaries of that time: Pettenkofer (Fig. 8), Koch, Friedrich von Esmarch (Fig. 9), Theodor Kocher (Fig. 10), Madelung (Fig. 11), Hoffa (Fig. 12), Langenbeck (Fig. 13), Billroth (Fig. 14), von Graefe (Fig. 15) and Nussbaum (Fig. 4), Volkmann (Fig. 16), Tiersch (Fig. 17), Willy Anschütz (Fig. 18 and Ferdinand Sauerbruch (Fig. 19), Gerhard Küntscher (Fig. 20).

Fig. 6. Fritz Lange.
Fig. 7. Hans Buchner (1850-1902).
Fig. 8. Max Joseph von Pettenkofer (1818-1901).
Fig. 9. Friedrich von Esmarch (1832-1908).
Fig. 10. Theodor Kocher (1841-1917).

Fig. 11. Otto Madelung (1846-1926).
Fig. 12. Albert Hoffa (1859-1907).
Fig. 13. Bernhard von Langenbeck (1810-1887).
Fig. 14. Theodor Billroth (1829-1894).
Fig. 15. Albrecht von Graefe (1828-1870).

Fig. 16. Richard von Volkmann (1839-1889).
Fig. 17. Carl Thiersch (1822-1895).
Fig. 18. Willy Anschütz (1870-1954).
Fig. 19. Ferdinand Sauerbruch (1875-1951).
Fig. 20. Gerhard Küntscher (1900-1972).
The anatomist von Hertwig exerted great influence on Lange (Fig. 21). He managed to present a model of muscular system in a moving human. This inspired Lange in his surgical practice to replace the paralyzed muscles with normal muscles. He became a Privatdozent at the University of Munich in 1896 [3], a professor extraordinarius in 1903 and a full professor in 1908. He was the first full university professor of orthopedics in Germany. Other specialists in orthopedics at that time were Oskar Vulpius (Fig. 22), Richard Scherb, Konrad Biesalski (Fig. 35) and Leo Mayer (Fig. 23).

In 1903, Lange established the first Orthopedic Clinic in Germany. Thanks to a rich sponsor, Amelia Stiftung [4], Lange was able to double the number of beds in the clinic and expand the radiological laboratory under the direction of Rudolf Grashey (Fig. 24).

Private surgeries were also carried out in the Jochaner Family Clinic. His first assistant at the clinic was Hans von Bayer, who later moved to Heidelberg, where in 1919 he established a University Department of Orthopedics [5]. In 1908 he was elected President of the German Society of Surgery. Before him, this renowned position had been held by Hoffa, Mikulicz (Fig. 25), Lorenz (Fig. 26), Bardenheuer (Fig. 27) and Schulthess (Fig. 28).

In the surgical annals, Lange is presented as having made the greatest contribution to modern orthopedic surgery. His subperiosteal method of tendon grafting, transposition of the paralyzed muscles and the use of an artificial silk tendon are, to this day, called the Lange method. Among his numerous research works, a unique book devoted to the treatment of scoliosis deserves particular attention. Lange was the Head of the Department of Orthopedics and Polyclinic at the University of Munich (Fig. 29, 30), he was also the chief surgeon of the Royal Hospital for the Disabled in Bavaria [6].

Fritz Lange holds the same position in the development of German orthopedics as Robert Jones in England in (Fig. 31). Lange’s intellectual and medical endeavors were very vigorous. In addition to his professional interests, he was also an expert in art, a sensitive connoisseur of music as well as a painting and sculpture aficionado. He described his early-life ventures, marriage and travels in his book “Venus of Cyrene”. In the next two years, he perfected his surgical skills under Wilhelm Madelung (Fig. 10) in Rostock. He also worked briefly in Strasbourg, but he was not fully satisfied with his work there. He soon moved to Vienna, where he corroborated with Adolf Lorenz, the promoter of modern treatments for scoliosis, hip and foot defects. He expressed some criti-
cism of Lorenz’s simultaneous reposition of a displaced hip in children. It is worth pointing out that Adolf Lorenz, one of the luminaries of orthopedics, was born on the Polish-Czech border (Nysa-Jesienica) in Vidnava. Lorenz’s enthusiasm for orthopedics was aroused by a Czech doctor, Professor Eduard Albert (Fig. 32), Head of the Surgery Department in Vienna, the successor of Professor Dumjrecher. Lorenz’s next trip was to Würzburg to see Hoffa who, at the time, had considerable standing in the field of orthopedics as well as organization. He came back in Munich in 1896 and started a private orthopedic practice. He developed and promoted the use of splints and casts in the stabilization of fractures. During this time he frequently fought with Hessing – a known “orthopedic mechanic” – who, in Lange’s opinion applied to many outdated ideas of using apparatuses from the past. Apart from Lange, a number of physicians doing orthopedics, who called themselves specialists, worked in Munich; they were Frank Tausch, Ottmar Amann and Artur Dreyer. Lange’s reputation as a surgeon knowledgeable in all orthopedic issues continued to grow. He was the first to introduce a remote evaluation of the treated patients and he believed that the development of orthopedics was not possible without diagnostic imaging studies. He was one of the main experts and organizers of surgical aid during World War I, including the creation of field hospitals on the Western front. His methods of fracture fixation facilitated the transport of injured soldiers and reduced mortality to 40% compared to the soldiers of the Allies, whose mortality was reaching 80%. It wasn’t until Robert Jones who used the Thomas splint that the mortality of the wounded Britons and Americans was reduced to 20%. The Thomas splint (not only fixation but simultaneous use of traction) was immediately adopted by first the American orthopedic surgeons, and then by their German counterparts. Lange vastly expanded the then existing knowledge and management of tuberculous spondylitis, flat foot, congenital hip displacement and infantile cerebral palsy as well as muscle grafting. He also authored the first manual of orthopedics “Lehrbuch der Orthopädie” published in Jena in 1914 (Fig. 33). The manual was co-authored by Hohmann, Schede (Fig. 34), Biesalski, Bode and Spitzy. Some of the major interests pursued by Lange which materialized as scientific publications include: treatment of congenital hip dysplasia, orthopedic treatment of spondylolisthesis, pediatric orthopedics and surgery, conservative treatment of bone fractures, construction of artificial arm, treatment of tuberculous spondylitis using plaster jacket.

Fritz Lange died on 19 November 1952 in Bad Tölz (Wachhersieg).
Albert Hoffa (1859-1907)

Albert Hoffa was born on 31 March 1859 in Richmond – he was a German physician, surgeon and orthopedist (Fig. 12). He described the condition known as Hoffa's disease, and he is also commemorated by an eponym – Hoffa fracture. In 1901 he founded the German Society for Orthopedic Surgery (Deutsche Gesellschaft für orthopädische chirurgie). One of the German associations of orthopedists awards an annual prize named after him (Albert Hoff-Preis).

He was born in Richmond in the Republic of South Africa (Transvaal Republic), as the son of Moritz Hoff, a German physician and his wife, Mathilde, née Lelienfeld. In his birthplace Hoffa is still considered to be one of the most outstanding people who had been born there (apart from him Christian Barnard, who had a farm in Richmond, is also named [1]). He attended a gymnasium in Kassel and then studied medicine at the University of Marburg and the University in Freiburg im Breisgau. He was awarded the title of doctor of medicine in 1883 based on the dissertation “Ueber Nephritis saturnina”. Afterwards he was an assistant in hospitals in Freiburg and Würzburg. In 1886 he became a Privatdozent and a professor in 1895. In 1887, together with Ernst Bumm, he founded a private clinic of orthopedics, medical gymnastics and massage in Würzburg. In 1891 the first edition of his manual of orthopedics was published.

He died of a heart attack on 31 December 1907 in Cologne, on his way back from Amsterdam to Berlin.

Konrad Biesalski (1868-1930)

Konrad Biesalski was born in Ostróda on 14 November 1868 in the then Eastern Prussia (Fig. 35). He began his medical studies in Halle and completed them in 1894 in Berlin. The main directions during his education were pediatrics, surgery and orthopedics. For a short time he practiced in Würzburg and then at the Berlin City Hospital where he was later head of the Department of Orthopedics. Initially, he also headed the Department of Orthopedics and Radiology Department at Urban-Krankenhaus, and then he served as the Director of the Berlin-Brandenburg Therapeutic and Educational Institute for the disabled. He played a central role in the fight against disability and he promoted this idea in Germany. For this reason, he was later named the “father of social protection of the disabled” [10]. In 1906 he wrote his famous survey which aimed at statistical and diagnostic recognition of the problem of disability among children. The results of this survey received a lot of publicity not only in Germany but worldwide [7]. It turned out that in the case of more than 50% of disabled children disability can be treated, in 30% it can be reduced, and only in around 11% the disability is untreatable. Konrad Biesalski’s institute applied what is called today a combined (comprehensive) rehabilitation of young children. His approach is best characterized by the following statement: “it’s not just the foot that should be treated, but the whole person”. Biesalski applied rehabilitation therapy excluding, if necessary, surgical procedure, orthopedic devices and aids. General and vocational education was not yet equivalent to vocational training due to the too young age of the patients. It was at Biesalski’s facility that Wierzejeewski wrote his doctoral dissertation titled “Congenital absence of ulna”. His stay there, as Biesalski’s first assistant, determined his future professional development. Wierzejeewski was also a member of the German Society for Orthopedics (Deutsche Orthopädische Gesellschaft), which also included the following Polish physicians: Chumsky, Epstein from Kraków, Jasiński from Łódź, prof. Bronisław Kader, W. Łapiński, J. Pomorski, W. Reklewski from Warsaw. It was Biesalski’s facility that ultimately shaped Wierzejeewski as an orthopedist and in a way that was ahead of the perspectives on this medical specialty held at the time. During stays with Ottmar Angerer and Fritz Lange, he learned the art of orthopedics and orthopedic surgery. From Wierzejeewski, however, Biesalski took over the passion for the fight against disability [9]. Apparently, in recognition of his achievements in orthopedics, Biesalski was considered for the Chair of orthopedics at one of the German universities and it seems that he was continuously passed over for this positions whenever there was a vacancy due to his nationality. Based on the fruitful cooperation between Biesalski and the “teachers of the disabled”, a socio-medical and educational approach to people with disabilities was developed in 1911 through the establishment of the Oskar and Helena Pintsch Foundation (Fig. 36, 37) (OHH – Oskar-Helene-Heim) [8]. Thanks to the founders and his own involvement, Biesalski was instrumental in passing the Act on disabled people which was breakthrough legislation in the Prussian Law. On 27 May 1914, Biesalski became the
medical director of the Oskar-Helene-Heim Foundation in Berlin-Dahlem (Fig. 38, 39, 40). It was the world’s first hospital which treated people with disabilities. Biesalski also made contributions to the development of the rehabilitation of adults, war-disabled people and their reintegration into employment. He founded Deutsche Krüppelflüsse. He died in Berlin on 27 January 1930 of a heart attack.

References