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DUBROVNIK HOSPITAL IN THE FIRST WORLD WAR. SURGICAL PROCEDURES IN THE DUBROVNIK HOSPITAL DURING THE FIRST WORLD WAR AS THE FOUNDATION OF THE FUTURE SURGICAL DEPARTMENT

Abstract: Civilian hospitals under the Austro-Hungarian Monarchy continued to operate during the First World War, some converted into military hospitals, others served as both military and civilian, and still others continued to treat only civilian patients. In Dubrovnik during the First World War, there were two military hospitals, along with the Dubrovnik city hospital, which remained civilian with a military part. As the war continued, the shortage of doctors and medical personnel became increasingly worse. The situation was aggravated by lack of food and occasional epidemics of infectious diseases. In the hospital in Dubrovnik, demographic growth was slowing down due to the drop in births and a persistent high mortality rate. However, the hospital met the requirements of Dubrovnik and its surroundings under the difficult wartime circumstances and followed advances in the surgical treatment of diseases. In 1914, the Dubrovnik Hospital had no organized departments. The first to be established in 1922 were the surgical, venereal and internal diseases departments. Surgical procedures during the First World War became the basis for the creation of the surgical department of the Dubrovnik hospital.

Keywords: First World War, surgical procedures, hospital departments

Non MeSH: Dubrovnik Hospital

Introduction

In the bibliography of Dubrovnik, there is little information at all about the First World War, and in particular about the hospitals themselves, which at that time under the Austro-Hungarian Monarchy provided aid to both civilians and soldiers. Among the historiographical novelties dedicated to the topic of World War I, it is worth highlighting the book *Prešućeni rat. Korčulanski kotar u I. svjetskom ratu* [The neglect-

ed war. The district of Korčula in the First World War] by Tonko Barčot, which considers the wider area of southern Dalmatia, *Prvi svjetski rat u Dalmaciji: (1914.-1918.)* [World War I in Dalmatia (1914-1918)] by Filip Škiljan, which partly includes events in Dubrovnik but not how the health system functioned in the city, the book *Za cara i domovinu: Konavle u Prvom svjetskom ratu* [For the Emperor and the homeland, Konavle in the First World War] by Niko Kapetanić, which is related to the Konavle area, the article *Mobilizacija ljudi, konja, stoke i prijevoznih sredstava u Dubrovačkom kotaru 1914.* [Mobilization of people, horses, cattle and means of transport in the Dubrovnik district in 1914] by Tad Oršolić and Dino Nekić, or the catalogue of the exhibition *Dubrovnik u Prvom svjetskom ratu 1914.-1918.* [Dubrovnik in the First World War 1914-1918] with textual contributions by Tonko Marunčić and Đivo Sjekavica. In these publications, the activities of hospital institutions in the area of the Austro-Hungarian Monarchy, which provided assistance to both civilians and soldiers, remains poorly researched.

Information about the Dubrovnik hospital in the First World War was collected from various sources. Data from the State Archives in Dubrovnik were used for the analysis of the health infrastructure. The most frequently used materials were medical histories and files created during the First World War found in the collection of the Dubrovnik General Hospital, which includes about 400 boxes of unorganized material.

The dynamics of childbirth were monitored from the Register of births from 1915 to 1929, and what operations were performed on the people of Dubrovnik during the war period was found out from the Records of operations performed from 1913 to 1919. For an explanation of how healthcare functioned in the Dubrovnik area during the war, an attempt was made to answer the question of how far the hospital responded to the needs of the people of the Dubrovnik area in wartime conditions.

Hospital

In the First World War, the Dubrovnik hospital was given the demanding task of providing health services to soldiers in addition to providing services to the civilian population, despite the existence of military health institutions of smaller capacity, such as the home defence (field) hospital in Gruž and the military hospital in city. [1]

The Dubrovnik hospital itself was built in 1888. It was a one-story building with a central part connecting two side wings with patient wards. According to the administrative rank, it was a municipal public hospital. [2] Of all the public hospitals, the Royal Land Hospitals were the best equipped, they had a manager – a paid clerk and a director who was a doctor. Very soon after opening, it became a facility that was described in very positive terms. Dr. Kosta Vojnović considered it „a building that is among the most beautiful in the Austro-Hungarian Monarchy“ and in the report to Parliament it is stated that „the institution in its entirety, either because of the building or because of its location, is truly magnificent, and in every detail is perfect so that it meets the requirements of today‘s science and serves the country with pride.“ [3]

During the war years, the director was Dr. Filip Smolčić and the manager Uroš Montana. In 1914, the hospital complex consisted of five buildings. [1] During the war years (1914-1918), the director was Dr. Filip Smolčić and the administrator was Uroš Montana, the pastor was Father Ivan Car, Dr. Gjuro Orlić was the assistant physician, Dr. Lujo Fouque was the pharmacist, and Nikola Kosovac was the records clerk. Until 1922, two doctors worked in the hospital, one primary doctor who was also the director of the hospital and one secondary doctor. There were 24 nurses for 150 beds, 22 under the age of 20 and two under the age of 30. All were described as having impeccable conduct and capable of caring for patients. The number of janitors varied, most often 27.

The hospital was connected to the city's water supply system and waste water was led to the sea through a concrete channel. [1] After the war, in 1922 it was organised into departments: surgical, venereal, and internal diseases, and in 1924, a tuberculosis department. [4]

During 1916, under the extraordinary circumstances of war, a decision was made that hospital administrations could, without the approval of the Provincial Committee, occasionally employ soldiers as nurses who would receive a salary. The administrations undertook to subsequently inform the Provincial Committee about each employment. [4]

At the outbreak of war in 1914, in addition to this city hospital in Dubrovnik, there were two other mentioned hospitals about which little information is available. One was a military hospital from 1806 in the Collegium Ragusinum, in the very centre of the city, and the other was a Civil Defence hospital in Gruž. [1] The Civil Defence Hospital in Gruž occupied the premises of Villa Roma and the neighbouring building („kleine villa Roma"). The municipality of Dubrovnik was against the idea of the Civil Defence hospital moving into Villa Roma. They believed that the part of the road that went down to the port of Gruž should be lined with villas with gardens and represent the elite new centre of the city. They suggested that the hospital be built on the other side of the road next to the Civil Defence barracks, which was more logical, but not good enough for the military authorities. The military authorities tried to negotiate with the owner of the land, Mr. Srinčić, about the purchase of the land on the old road near the barracks, but the negotiations failed. They revived the idea of moving the Civil Defence Hospital to Villa Roma and the building next door, and negotiated with the owner, Mr. Capursi, about renting these facilities for the hospital. [5]

The city wanted to prevent the hospital from being moved to these facilities at all costs, and took upon itself the obligation to adapt the so-called office building of the Civil Defence Barracks into the Civil Defence Hospital. The costs would be covered by the City of Dubrovnik with the obligation of the army to pay 8½ % interest per year on what is spent „until the amortized principal together with interest is covered". The city also lobbied in the capital of the empire, Vienna. Mayor Melko Čingrija visited and informed the President of the National Government Georgi, and explained to him other plans of the City for that area. Apparently, the army had not given up on the idea of locating a Civil Defence hospital in the Villa Roma. The City still protested because it claimed that one possible elite centre of development, Lapad, where the Austrian gov-

ernment had built gunpowder store, had already been lost. The fire of 1918, that devastated Villa Roma, led to various conspiracy theories, since the real cause was never determined. [6] Then the Home Defence Hospital was moved to the barracks. At that time, a large number of soldiers were stationed in Dubrovnik, so the Dubrovnik hospital met the needs for hospitalization of soldiers who could not be treated in the Civil Defence or Military Hospital. There is no information in the Dubrovnik hospital that a special department was formed exclusively for soldiers. Since the mobilized Dubrovnik residents and residents of the Dubrovnik area were sent to the Balkan (Serbian, and later Montenegrin and Albanian) battlefields and, after the Kingdom of Italy entered the war in May 1915, also to the Italian front, they made up a part of the soldiers treated in the hospital, while the rest were from various parts of the Austro-Hungarian Monarchy.

Already at the beginning of the war, the city hospital was burdened by military recruitment because its employees were enlisted and it could not find replacements. From time to time, the administration of the Dubrovnik hospital tried to ask the military authorities to protect people who were essential for the operation of the hospital from being mobilized. Already on August 5, 1914 that request was being made, since about 20 soldiers were already being treated in the hospital and it was planned that the hospital in wartime conditions would also be military. The chief pharmacist of the hospital, Božidar Cassani, who was appointed as a pharmacist at the „*Truppenspital*" in Tivat, was considered exempt from mobilization. According to later correspondence, it can be seen that the Command did not comply with the hospital's request. Pharmacist Cassani was nevertheless mobilized and the hospital continued to submit his appointment fee and pension contributions. [4] He would be replaced by the pharmacist Spasoje (Salvatore) Radmili, and from May 3, 1919, by the trainee doctor Dr. Fouque. Later, the hospital would repeat the request to give up mobilization of other doctors and paramedics, but also for head butcher Vicko Grbić, who had the contract with the hospital for the supply of meat and was particularly important for the nutrition of both patients and hospital staff since, there were no longer enough butchers in the city due to recruitment. [4]

In the first year of the war, in December 1914, an attempt was made to improve the economic condition of doctors outside the hospital. The inclusion of doctors from Gruž and Župa Dubrovnik in the category of municipal officials in 1912 did not lead to any improvement in the status of doctors. With that decision, doctors had a salary of 3,000 krones and an allowance of 360 krones, with all increases according to years of service with child allowance and the right to a personal pension and the right to a widow's pension. Since the economic condition of society worsened and food prices rose two years later, a decision was made to increase the salary in the amount of 720 krones to the doctor from Gruž for running the infirmary of St. Jakov and to the doctor of Župa Dubrovačka of 600 krones for keeping horses for home visits. The doctor in Gruž was supposed to alternate with the city doctor to examine prostitutes every other month; he was supposed to help city doctor run the infirmary and, in case of need, replace the parish doctor for a week. Likewise, the doctor from Gruž and the doctor from the city were supposed to take turns in case of absence of one of them and keep

the clinic running according to the schedule. One part of the funds was supposed to come from the services of prostitutes, coroner and slaughterhouses, since doctors were supposed to replace the veterinarian in the inspection of livestock and meat in case of negligence or the absence of a veterinarian. Doctors devoted the rest of their time to the patients of their private practices. [4]

During the war years, the doctors of the Dubrovnik hospital were paid a war allowance and occasionally a one-time extraordinary war allowance. [4] The one-time war allowance was paid not only to doctors but also to hospital employees and retirees. In 1916, midwives were paid a war allowance of 60 krones. In 1918, the director received 650 krones, the hospital priest 180 krones, and pensioners 30 – 120 krones. [4]

As early as 1916, there was an increasing shortage of medicines in hospitals in Dalmatia, and the Superintendence of Pharmacies of Provincial Hospitals asked the National Committee to provide them with the necessary medicines. [4]

There was not only a shortage of medicines but also of food. The hospital raised its own livestock and poultry and grew vegetables. From time to time, the hospital's electricity was cut off, so the land committee was to restore their electricity, with the explanation that the price of both coal and electricity were conditioned by the shortage. [4]

Even in Dubrovnik at that time, home births predominated, and only poor and unmarried mothers gave birth in hospitals. According to the gynaecologist Dr. Žarko Veramenta, the maternal mortality rate in Dubrovnik was still high between the two world wars and amounted to 10–15%.

Records of births in the Dubrovnik hospital from 1915 to 1929 shows a significant drop in births during the war years. (Table 1.) [8] The Register referred to mothers who gave birth in the hospital, and there is a smaller number of those who gave birth at home and were subsequently entered in the Register. A proportion of births at home were probably not transferred to the Register of Births. The decline followed the trend in all European countries that were at war. The financial picture of the family was bad because the men did not work, but fought in the war and received only meagre compensation. Although there were many mobilized men who were not at the front, economic reasons and an uncertain future were often the reason why spouses decided not to have children. It is worth mentioning that in some countries there were so many deaths that the birth rate of the nation fell, for example in France during the First World War the birth rate fell by 1.4 million people, which is as much as those that died in the war. [9]

Table 1. Partial insight into births from 1915 to 1929.

Year	1915./1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Number of births	23	32	19	30	40	51	43	55	43	86	65	70	62	76

Source: HR-DADU-185. Upisnik rodilja 20.VIII.1915.-18.VI 1929.

There were 14 beds for abandoned children. During the war years, a permanently high mortality rate of those children continued. From January 1914 to the end of 1918, a total of 155 abandoned children were received and 104 of them died. Already before the war, there was a problem with the number of nursing mothers. One wet nurse attended to four babies. Fewer and fewer were choosing to breastfeed. This was explained either by the improvement of the economic condition of the people or by the miserable benefits they received. Monthly allowances for nursing mothers as of January 10, 1917 amounted to 30 krones, and it was left to the doctor to judge how many children a nursing mother could breastfeed. [4] In the first year of the war, 1914, out of 53 new-borns, 34 died. Deaths of new-borns usually occurred two or three months after admission, probably due to poor hygienic conditions, poor medical care, minor hospital epidemics and inadequate nutrition. The most common diagnoses were enterocolitis, bronchitis and congenital weakness caused by the child's poor health. Some of the abandoned children died in foster families. The conditions of war resulted in a change regarding the reception of donations from Italian mothers to the institute. The national board made a decision according to which the child of an Italian mother could be admitted to the institute, but steps should be taken immediately to extradite the child to the native municipality of Italy to which the Italian woman belonged. [4]

Visits to the hospital were allowed on Thursdays and Sundays from 10 a.m. to 12 p.m. with police control to prevent those unvaccinated against smallpox from entering the hospital. [4] There were 24 nurses for 150 beds, 22 under the age of 20 and two under the age of 30. All were described as having impeccable behaviour and being capable of caring for patients.

During 1916, under extraordinary wartime circumstances, a decision was made that hospital administrations could occasionally employ soldiers – paramedics who would receive a salary - without the approval of the Committee from Zadar. The administrations were obliged to notify the National Board about each recruitment later. [4]

In the hospital reports, they specifically distinguish the soldiers who were admitted directly from the battlefield, from the garrison and from other health institutions. Those discharged from the hospital were classified into those who recovered and were able to continue their service, those who were given leave, those who were transferred to another institution and those who died. Then they were classified into soldiers, Civil Defence, soldiers of the national uprising (Imperial-Royal Landwehr) and in the third category were legionnaires and civilians serving in the army. Further divisions were into the wounded, and those sick with 'external' and 'internal' diseases.

Operative interventions

In the years of the First World War, the surgical department of the Dubrovnik hospital continued to care for the civilian population of the city. Despite the attempt to create aseptic working conditions, postoperative infections were common. The operating theatre itself was wrongly oriented to the south and exposed to the sun and heat. Lighting during the day was provided by several south-facing windows. In the sum-

mer, during the high heat, it was very difficult for the surgeons to operate because of the condensation, and ventilation was only possible by opening the windows and the consequent invasion of insects. The room for unsterilized procedures was accessed through the aseptic area, which would be contaminated by the passage of dirty paramedics with stretchers and patients. [10] In April 1914, an attempt was made to improve the hygienic working conditions by installing more sinks and Sirius appliances. At first there were suggestions for introducing central heating, but it was considered to be unnecessary for Dubrovnik's climate and bad for health. The decisive factor was the director's trip to Berlin, when he determined that the Sirius device provided the best gas heating, and also provided water heating and includes a device for sterilizing instruments.

On the eve of the First World War, in 1913, the name of Dr. Filip Smolčić appears, who came to the hospital from Šibenik, where he was an assistant to Dr. Colombani. He operated with the help of Dr. Katić. A figure of 300 operations is recorded during the year, acts of considerable bravery for general medicine doctors such as Dr. Smolčić and Dr. Katić. In 1914, a total of 311 surgical interventions on Dubrovnik's residents were recorded. A year later, during the global war, 54 surgical interventions were recorded, in 1916 there were 111, in 1917 there were 181 surgical interventions, in 1918, 149 and in 1919, when the war had already ended, 304. [11] Obviously, a number of citizens sought help in military hospitals, and a significant proportion of men were on the battlefield. Of the eight patients who underwent surgery and were killed by firearms, only one was a soldier who had died on leave.

In addition to the expected surgical diagnoses (e.g., ringworm, gallbladder inflammation, hemorrhoidal nodes, arm and leg fractures, adenoid vegetation, phlegmonous angina, etc.), the people of Dubrovnik also had a need for surgical interventions as a result stemming from the complication of tubercular infection. According to Dr. Đuro Orlić, from 1910 to 1920 an average of 150 people died annually in Dubrovnik, and of those, an average of 27 from tuberculosis, which was thus a cause of one in five deaths. Out of 27 deaths, 12 were male and 15 were female. As stated by Dr. Orlić, „the highest mortality is in the age of maximum strength, i.e., from 20 to 30 years of age, but in childhood about 3/5 of all cases die from tuberculosis of the brain, and in adulthood mostly from pneumonia." [12] The largest number of deaths from tuberculosis according to age specifically in the Dubrovnik hospital from 1908 to 1919 were patients in the active life age, between 15 and 50 years old, just as in previous periods. A total of 144 people died between the ages of 15 and 30. Of these, there were 76 men and 68 women. A total of 137 people, 71 men and 66 women, died between the ages of 30 and 50. After the age of fifty, the proportion of deaths from tuberculosis decreases, so that in the group between the ages of 50 and 70, a total of 40 people died, of which 29 were men and 11 were women. [13 p174-5] The most common surgical intervention for tuberculosis was laparotomy, opening the abdominal cavity in case of tuberculous peritonitis. In case of complicated pulmonary tuberculosis with empyema, accumulation of pus in the chest cavity, a thoracotomy was performed, surgical opening of the chest with resection of the ribs. For diagnostic purposes in the case of cold hip abscess, purulent swelling in the hip, only a puncture of an obviously diagnostic nature was per-

formed. [11] In the case of tension tuberculous peritonitis, abdominal puncture and fluid evacuation - abdominal paracentesis were performed. In the first year of the war, there were four cases of tuberculous peritonitis treated with a surgical approach. Chest empyema as a result of tuberculosis with rib resection was carried out in two cases. There were three cases of „cold" hip or neck abscess. One case was a tubercular pregnant woman who was induced to have an abortion with manual extraction of the foetus. It is interesting that there were five surgical treatments for echinococci, mainly of the liver, where a laparatomy with marsupialization was performed, a cyst drainage operation (e.g., echinococcus of the liver), which establishes an external link with the cyst. [14]

Echinococcosis, a zoonosis most commonly caused by the small dog tapeworm Echinococcus granulosus, was a common disease due to poor hygiene and poor disease control. It was manifested by damage to the liver and lungs, sometimes other organs and allergic manifestations. [14]

In 1915, there were four cases of tuberculous peritonitis with laparotomy, in two cases of complicated pulmonary tuberculosis a thoracotomy with rib resection was performed and in one case an artificial abortion of a tuberculous mother. Due to the high incidence of tuberculosis, the effectiveness of the treatment of pulmonary tuberculosis with vibroinhalation using the Bayer device was also checked. [4] Although Hugo Bayer's device was constructed before the First World War, its main application was on soldiers who suffered massively from tuberculosis. The working principle of the device was to inhale drugs (most often guaiacolic acid or Liquosan) with the aim of softening the mucus in the respiratory tract and facilitating expectoration. The device was used until 1919. [15]

Even before the war, the hospital had a problem with a shortage of doctors. Urologist Dr. Carlo Ravasini, who performed more complex urological operations, offered to treat the poor in the Dubrovnik hospital for free who could not pay for hospital treatment. [4]

During the war years, the hospital had a shortage of doctors, nurses, and general service personnel. Although a position was offered for two assistant doctors in 1914, the National Committee was unable to secure a single doctor. [4] Occasionally they had visiting doctors of various specialties who would stay for up to a week. During the war, the situation worsened even though the Land Committee occasionally decided to assign doctors to the Dubrovnik hospital. So, in 1916, Dr. Juraj Gentilizza from Knin was assigned to the hospital in order to help his colleagues. [4]

In the Dubrovnik hospital in 1915, a laparotomy was performed for the first time due to intussusceptions, twisting of the intestine, with disinvagination. [10]

A year later, there were three exploratory laparotomies for intestinal tuberculosis and three for liver echinococcus. In 1917, one cold abscess of the chest with resection of the ribs, two tuberculous peritonitis and four laparotomies due to echinococcosis of the liver were recorded. A further increase in interventions in 1918 included five cases of cold abscess, and as many as six laparotomies with marsupialization in echinococcus. [11]

In 1918, a radical operation according to Wertheim (hysterectomy, removal of the uterus) was mentioned for the first time, followed by several operations on the digestive system for ulcers on the stomach or duodenum, the first nephrectomy (kidney removal), the first anus praeternaturalis (a surgical opening on the abdominal wall), the first resection of the transverse colon and the first pyelolithotomy. [10] The most common were operations for inguinal hernia, according to Edoardo Bassini, an Italian surgeon who reinforced the back wall of the inguinal canal by sewing muscle tissue in three layers. [10]

The aforementioned operations were performed with general anaesthesia administered by nuns because there was no specialised anaesthesiologist. Anaesthesiology developed rapidly during the First World War. In the case of war injuries, the use of morphine derivatives in combination with other anaesthetics made it possible to carry out difficult operations. Newer techniques of putting patients to sleep very quickly found application in civilian hospitals during the war. Ether and chloroform narcosis were most often used. Ether was first synthesized by Valerius Cordus in 1540. [16] Ether narcosis was used in Dubrovnik for many years. A year after the first case in Boston, it was applied on April 20, 1847. According to Hugo Gjanković, the first ether anaesthesia was used in breast tumour surgery, and the operator was Dr. Frane Lopišić with the help of Dr. Sarić and others. [10] It was known to give scopolamine as a sedative as a premedication for intestinal tuberculosis and inguinal hernia surgery. Otherwise, in the case of hernia or intussusceptions of the intestine, a combination of morphine and „narcosis", usually chloroform, was administered. Morphine was combined with chloroform, as in the case of tumours of the lip and face, or cocaine with adrenaline in the extirpation (removal) of a breast adenoma or anal fistula surgery. [11]

In case of need for local anaesthesia, Novocain was most often administered. Cocaine was used when an atheroma of the scalp was removed or during a tracheotomy, a surgical procedure on the neck that opens the trachea on the neck and thus enables breathing. Cocaine was also used in numerous eye surgeries, e.g., in the practice of Dr. Löwenstein in cataract, eye pterygium surgery (degenerative conjunctival duplication that is pulled onto the cornea like a triangular wing) or corneal ulcer and corneal ulcer with iris prolapse. [14] A combination of adrenaline and cocaine was administered when treating a leg wound from a firearm. [11]

It is believed that nine million soldiers and seven million civilians died of disease in the First World War. Today, social advances such as the realization of the rights of women or minority communities are often referred to as positive consequences of the First World War. In addition to social improvements, contributions to the fight against infectious diseases through vaccinations introduced during the war, prostheses for lost limbs, eyes or noses, the rapid development of plastic surgery through skin and bone grafts, osteoperiosteal grafts, etc., are mentioned. [17]

The rapid development of orthopaedics and disinfection was also recorded. Radiology was already showing progress in the first year of the war when Marie Curie went to the front and created mobile radiology clinics for diagnosing wounded soldiers with X-ray machines equipment carried on hundreds of vehicles. [17] For the survival of the seriously wounded, a new transfusion technique was used, following

the idea of the Belgian Dr. Albert Hustin, with the addition of blood citrate which reduced blood clotting was also important, and once it reached the front significantly increased the chance of survival of seriously wounded soldiers. The first blood transfusion in the Dubrovnik hospital took place years later, on 9 November 1927. [10]

A different approach to wartime psychological trauma, with access to the patient immediately after the trauma and the movement of psychiatric inpatients back from the front lines was also noted. However, a serious change of attitude in the treatment of wartime PTSD disorder occurred only years after the First World War, a result of the unfortunately numerous local and wider scale wars that raged around the world. However, it must not be forgotten that the price of medical progress in the First World War was incredibly bloody and came at a terrible cost, as Montara said: „Human history is entwined with the horrors of myriads of wars and they mark the stages of what we call, ironically, the path of progress." [18]

The Dubrovnik Hospital tried to keep up with advances in medicine. A few years before the First World War, Dr. Katić was educated by Dr. Paul Ehrich and upon his return introduced Salvarsan and Neosalvarsan into the treatment of syphilis, and experiments were also carried out with the previously mentioned Bayer device for the treatment of tuberculosis. During the war, there was no progress in the treatment of infectious diseases in the hospital itself, but new surgical techniques and advances in anaesthesiology were introduced. This was probably also contributed to by doctors who occasionally arrived to help Dubrovnik doctors from other parts of the Austro-Hungarian Monarchy or from areas directly adjacent to the front, such as Dr. Jakov Miličić, a military chief physician who came once a week throughout 1916 to help his colleagues at the hospital.

Conclusion

The Dubrovnik hospital in the First World War was a civil-military hospital. It provided health services to residents of two districts, Dubrovnik and Kotor, and took care of soldiers who were not cared for in a military or Civil Defence hospital. The hospital itself tried to feed the patients and staff in a time of great food shortage by raising poultry and livestock and growing vegetables. Medical care suffered from a shortage of staff, shortages of electricity, heating and adequate nutrition. The state of war worsened the already high rate of deaths on birth and the reduced the number of births in the demographic picture of the city and its surroundings. Although there were no new therapeutic advances in the approach to infectious diseases, the main breakthrough was in the application of new surgical and anaesthesiologic techniques to treatment and the establishment of the foundations of the surgical department of the Dubrovnik hospital. The number of relatively routine surgical interventions that were carried out by the generally only two surgeons gave them an increasing confidence to decide on more demanding operative interventions.

Rezime

Civilne bolnice pod Austro-Ugarskom monarhijom nastavile su da rade tokom Prvog svetskog rata, neke su pretvorene u vojne bolnice, druge su služile i kao vojne i civilne, a treće su nastavile da leče samo civilne pacijente. U Dubrovniku su tokom Prvog svetskog rata postojale dve vojne bolnice, uz dubrovačku gradsku bolnicu, koja je ostala civilna sa vojnim delom. Dubrovačka bolnica je pružala zdravstvene usluge stanovnicima dva okruga, dubrovačkog i kotorskog, i zbrinjavala je vojnike koji nisu bili tretirani u vojnoj bolnici ili bolnici civilne odbrane. Sama bolnica se trudila da u vreme velike nestašice hrane pacijente i osoblje prehrani gajenjem živine i stoke, kao i uzgojem povrća. Medicinska zaštita je imala problema sa nedostatkom osoblja, nestašicom struje, grejanja i adekvatne ishrane. Ratno stanje pogoršalo je ionako visoku stopu umrlih na rođenju i smanjilo broj rođenih u demografskoj slici grada i okoline. Iako nije bilo novih terapijskih pomaka u pristupu infektivnim bolestima, glavni iskorak je bio u primeni novih hirurških i anesteziooloških tehnika u lečenju i uspostavljanju temelja hirurškog odeljenja dubrovačke bolnice. Dubrovačka bolnica 1914. godine nije imala organizovana odeljenja. Prvi koji su osnovani 1922. godine bili su hirurško, venerično i interno odeljenje. Broj relativno rutinskih hirurških intervencija koje su izvodila uglavnom samo dva hirurga davao im je sve veće samopouzdanje da se odluče za zahtevnije operativne intervencije.

Ključne reči: Prvi svetski rat, hirurški zahvati, bolnička odeljenja, Dubrovačka bolnica

References:

1. Perić I. Organizacija i djelovanje pokrajinske bolnice u Dubrovniku od izgradnje njene nove zgrade do Prvog svjetskoga rata [Organization and operation of the provincial hospital in Dubrovnik from the construction of its new building to the First World War]. Anali Zavoda za povijesne znanosti Istraživačkog centra JAZU u Dubrovniku. 1985;22-23:175-222.
2. Herman-Kaurić, V. Bolnice u Požeškoj županiji i sustav javne zdravstvene službe 1874.-1918. [Hospitals in Požega County and the public health service system 1874-1918]. Scrinia slavonica. 2003;3:247-80.
3. John B. Bolnica u Dubrovniku od 1888. do 1968 [Hospital in Dubrovnik from 1888 to 1968]. Zdravstvo. 1968;10 12):43–58.
4. HR-DADU-186 Opća bolnica Dubrovnik (1880.-1941.) [General hospital Dubrovnik 1880-1941]
5. Domobranska bolnica i naša općina [Home Guard Hospital and our municipality]. Crvena Hrvatska 1913 Jun 28
6. Požar [Fire]. Dubrovnik. 1914 Apr 9
7. Veramenta Ž. Tragovima dubrovačkog rodilišta [In the footsteps of the Dubrovnik maternity hospital]. In: Marinović I, editor. Zbornik 100 godina zdravstvene službe u Konavlima 1900.-2000. Cavtat: Hrvatski lječnički zbor, podružnica Dubrovnik; 2001. p. 83-182.
8. HR-DADU-185. Upisnik rodilja 20.VIII.1915. - 18.VI 1929.
9. Vandenbroucke G. On a demographic consequence of the First World War. 2012 Aug 6 [cited 2025 Jan 12] In: cepr.org [Internet]. London: VoxEU, Centre

for Economic Policy Research. 2012. – [about 9 screens]. Available from: https://cepr.org/voxeu/columns/demographic-consequence-first-world-war

10. Gjanković H, Ilić, I. Kirurgija u Dubrovniku od otvaranja bolnice 1888. do danas [Surgery in Dubrovnik from the opening of the hospital in 1888 until today]. Dubrovnik. 1968;11(1):93-104.
11. HR-DADU-186. Zapisnik operacija obavljenih od 1913.-1919. [Record of operations carried out from 1913-1919]
12. Orlić Đ. Dani zdravlja. Tuberkuloza u Dubrovniku [Health Days. Tuberculosis in Dubrovnik]. Dubrovački list. 1925 May 30:1.
13. Car A. Skonsumacijun – Tuberkuloza u dubrovačkom društvu od 1825. godine do sredine 20. stoljeća [Consumption – Tuberculosis in Dubrovnik society from 1825 to the mid-20th Century]. Dubrovnik: Sveučilište u Dubrovniku; 2023.
14. Enciklopedijski rječnik humanog i veterinarskog nazivlja [Encyclopedic dictionary of human and veterinary terminology]. In Padovan I, editor. Zagreb: Hrvatska akademija znanosti i umjetnosti; Leksikografski zavod Miroslav Krleža; 2006. p 952.
15. Dietrich-Daum, E. Die ‚Wiener Krankheit": eine Sozialgeschichte der Tuberculose in Osterreich. München: R.Oldenbur; 2007.
16. Chaturvedi R, Gogna RL Retd. Ether day: an intriguing history. Med J Armed Forces India. 2011 Oct;67(4):306-8. doi: 10.1016/S0377-1237(11)60098-1
17. Ruiyan H. World War I: A Watershed for Medical Progression. European Journal of Humanities and Social Sciences 2024;3:3-9. https://doi.org/10.29013/EJHSS-24-3-3-9
18. Martini M, Simonetti O, Orsini D, Armocida E, Zimmermann AP. The avid eaters of lives. New and old infectious diseases in Italy at the time of World War I: a historical overview of military medicine and public health. J Prev Med Hyg. 2022 Jan 31;62(4):E972-E980. doi: 10.15167/2421-4248/jpmh2021.62.4.2240. PMID: 35603252; PMCID: PMC9104665.

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