

## 115 Years since the First Brain Operation in Bosnia and Herzegovina

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The first brain operation in Bosnia and Herzegovina was performed in the Muslim Charity Hospital (Vakufska Bolnica – Vakuf Hospital) in Sarajevo in 1891. In fact, three brain operations were performed in that hospital. All of the three patients operated on had sustained head injuries several months prior to the operation, and subsequently, they suffered from epileptic fits caused by bone fragments in the brain. The operation consisted of craniotomy, removal of the bone fragments, and closure of the dura matter. The epileptic fits ceased in all patients following the operation. The above indicated operations were performed by Dr. Carlo Bayer. The hospital was founded in 1866, and it is generally considered the first modern hospital in Bosnia and Herzegovina

**Key words:** History of neurosurgery; Bosnia and Herzegovina

### Introduction

There were no hospitals in Bosnia and Herzegovina before the year 1866 (1, 2). The first general hospital in Bosnia and Herzegovina was opened on October 8<sup>th</sup>, 1866 (3, 4). It was founded by a Muslim Charity (Vakuf) and called Vakuf Hospital (Vakufska bolnica), while all the expenses for the hospital facilities and its staff were covered by Ghazi Husref Bey's Vakuf (a Muslim Charity Foundation). The hospital was opened by Sherif Topal Osman Pasha, the last Ottoman Turkish governor of Bosnia. The hospital had

40 beds, with separate wards for males and females, the outpatient unit and pharmacy. Only several months later, the Ottoman military hospital was opened in Sarajevo (5). There were several attending doctors in the Vakuf hospital. One of them was Dr. Joseph Koetschet who was assisted by two Turkish military doctors, namely by Dr. Jammal, and Dr. Nuri, the latter being a surgeon. Topal Osman Pasha sent four younger students to Istanbul and Vienna to study medicine. Two of them had successfully completed their studies. They were Dr. Zarif Skender and Dr. Mehmed Samii Serbic. The other

two students gave up their medical studies; instead, they set up trading companies. Dr. Sebic did not come back to the Vakuf Hospital; instead, he settled down in Tuzla and became the first general practitioner there. Dr. Skender came back to the Vakuf Hospital and practiced there until he died from tuberculosis.

### **Brain operations performed by Dr Carlo Bayer**

Dr. Carlo Bayer was born in Hradec Kralove, Bohemia, in 1850. He joined the Serbian army as a war surgeon in the Serbian-Turkish war in 1876. Once the war was over, he came back to Bohemia where he started working as a doctor of forensic medicine. A year later, he joined the Austrian Navy in the capacity of a ship surgeon and remained on the ship until 1880. In the following years, he changed several positions, including a post of professor of Forensic Medicine in Prague. It was in 1885 when he finally settled down in Sarajevo. He became a chief doctor in the Vakuf Hospital. Dr. Bayer stayed in Bosnia for the rest of his life. After a new hospital had been built and opened in 1894, the Vakuf Hospital was turned into an Asylum for Mental Illnesses. Dr Bayer was appointed head of this institution. He retired in 1911, and died soon afterwards in 1916. Unfortunately, there is no photograph of him.

The first brain operation in Bosnia was performed in the summer of 1891. The patient was a young male who suffered from epilepsy. He had sustained a head injury seven months earlier, resulting in a wound in the scalp. The wound had healed naturally without any medical intervention, but, however, three weeks after the injury the patient suffered the first epileptic attack. Gradually, fits became increasingly frequent and the patient finally decided to see Dr. Bayer who found “that the parietal bone had been punctured while several small bone fragments

penetrated into the brain. The wound healed leaving a small scar. Nevertheless, the patient kept complaining of epileptic seizures which occurred almost every day.” Over the next nine months, Dr. Bayer examined the other two patients, both diagnosed with the same condition. He operated on them and during operation he “found small pieces of bone in the brain which he removed and, subsequently, closed the dura” (2).

Dr. Bayer reached the brain by applying the osteoplastic craniotomy; he fixed the lobe by interrupted sutures and put plaster on the head after skin suturing had been done. It was recorded that seizures ceased in all three patients following the operation.

There are no official documents in respect of Dr. Bayer’s specialist surgical training. Doubtless, he must have acquired some experience as a war surgeon, but, unfortunately, there is no written record of his operating techniques/ procedures. Hence, we are unaware of either the kind of surgical instruments he used or a method he applied to control bleeding, etc.

Even before Dr. Bayer, there were several Ottoman Turkish military surgeons who performed various operations, including trepanation for extra cerebral hemorrhage, operation of the severely depressed fracture, but none of them had dared carry out the osteoplastic craniotomy or cerebrotomy.

Dr Bayer did the brain surgery shortly after the first craniotomy was performed by F. Durante in 1882, which makes the achievement of the former even more impressive, especially taking into consideration the fact that it was carried out in a provincial hospital with little experience in the field of surgery. The description of the operating procedures is preserved only in his personal papers, because the Vakuf Hospital had no operating protocol.

These pioneering efforts of Dr. Bayer were also the only ones made at the Vakuf Hospital. In 1894 a new General Hospital

also housing a modern surgery department was opened in Sarajevo, The head of surgery department was Dr. Preindelsberger, an experienced surgeon from the General Hospital of Vienna. The old Vakuf Hospital became an asylum for mentally sick patients with Dr. Bauer in charge of it. He never operated again.

#### References

1. Anonym. Bosanski vjestnik.14:6,1866.
2. Anonym. Bošnjak.16:10-1,1891.
3. Jeremić R. Prilozi istoriji zdravstvenih i medicinskih prilika Bosne i Hercegovine pod Turskom i Austrougarskom. Beograd: Naučna knjiga, 1951: 68-9. (Biblioteka Srpskog lekarskog društva; v. 8)
4. Konjhodžić F, Šimunović V. Prve operacije na glavi i mozgu u Vakufskoj bolnici u Sarajevu. Med Arh. 1978;32:325-8.
5. Kreševljaković H. Vakufska bolnica. In: Spomenica Gazi Husrev Bey: povodom njegove 400 godišnjice. Odbor za proslavu. 2-3,1932.

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