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Source / Izvornik: **Acta medico-historica Adriatica, 2009, 7, 83 - 90**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:184:826001>

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Download date / Datum preuzimanja: **2024-05-14**



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ANTONIO GROSSICH - ON THE CENTENARY OF HIS INTRODUCTION OF IODINE TINCTURE PAINTING IN THE PREOPERATIVE INFECTION CONTROL

ANTONIO GROSSICH - STOGODIŠNJICA
PREMAZIVANJA OPERACIJSKOG POLJA JODNOM
TINKTUROM I SPRJEČAVANJE INFEKCIJA

Franjo Gruber*, Ante Škrobonja**

SUMMARY

The article presents the life and achievements of Doctor Antonio Grossich, the head of the Department of surgery and gynecology of the Civic hospital in Rijeka. He wrote several literary works, but deserves to be remembered for his clinical and experimental work on antiseptic and aseptic procedure. He introduced the method of painting the operative field with 10 % iodine tincture at first in traumas, then in general surgery. The method, for its rapidity, efficacy and not expensive had soon a worldwide success. He also participated actively in the political life of Rijeka before and after the World War I.

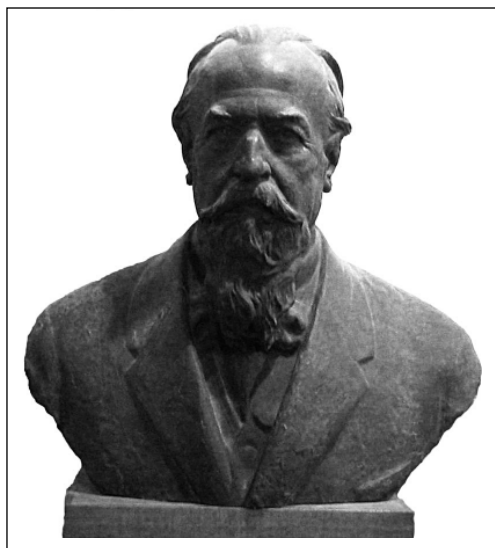
Key words: History of medicine, 20th century, surgery, asepsis, antisepsis, iodine painting, Antonio Grossich

Antonio Grossich was born on June 7 1849 in Draguć, a small town near Buzet in Istria. His grandfather and father both were the mayor of the town. After the primary school and the grammar school in Pazin and Kopar, for a time he studied law in Graz, then he went to Vienna to study

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Bust of Dr Antonio Grossich (1849 – 1926).
Archive - History Museum of Rijeka, Rome

Poprsje dr. Antonija Grossicha (1849.–1926.).
Archivio – Museo storico di Fiume Roma (Arhiv
– Muzej Rijeke, Rim)

medicine, graduating in 1875. He returned to Istria and worked as a physician in Kastav from 1876 to 1878. Most of the people in Kastav spoke Croatian, while his mother tongue was Italian so he had some problems, and settled for a short time in Rijeka (Fiume). Later, he returned to Vienna to specialize obstetrics (under J. Spaeth), and surgery working with the prominent professor of surgery Eduard Albert (1841-1900), who advocated the use of antiseptics in surgery. Professor Albert recognized his talent and tried to persuade Grossich to remain as his assistant in Vienna. Grossich, rather returned to Rijeka, married Edvige Maylender a young woman of an eminent local family, and finding employment at the civic hospital [1]. He worked masterly, gained reputation and in 1886 became the chief of the Department of surgery, where he remained to his retirement before the beginning of the World War I [2]. Rijeka at that time was a town without Medical school, under the Hungarian government with the special status of a *Corpus separatum*, inhabited by a multinational community formed mostly by Italians and Croats, but there were also Hungarians, Germans, Slovenians and other minorities [3].

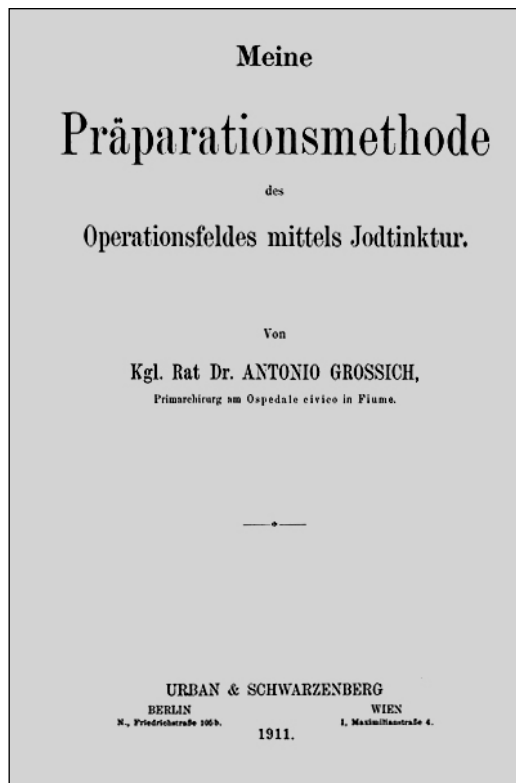
Antonio Grossich was an excellent and humanitarian surgeon, a friend of professor Jan Miculicz-Radecki, and professor Theodor Billroth who even operated sometimes at the Rijeka civic hospital. Grossich wrote several medical articles, books and novels [4-8] but deserves to be remembered for his work on antiseptics.

Around the half of 19th century Ignaz Semmelweis (1818-65) introduced hand washing with chlorinated water or soap and water before attending births what diminished the rate of death rate from puerperal sepsis . Interestingly, his ideas were first exposed to Vienna physicians by the dermatologist Hebra. Later, Joseph Lister (1827-1912) following the J. Henle and L. Pasteur “germ theory of diseases” introduced the antiseptic system, based on the destruction of germs by carbolic acid which became a well known method [9]. The antiseptic method prevented the entry of bacteria in to the organism during the surgical operation. An important progress was the introduction of sterilization of surgical instruments with steam by Ernst von Bergmann in 1885. So, the introduction of anesthesia (1846) and the aseptic and antiseptic techniques improved greatly the surgical interventions, lowered the mortality rates and permitted the



City Hospital of Rijeka in which Dr Grossich applied his groundbreaking method for disinfection of skin and minor injuries with iodine tincture

Gradska bolnica u Rijeci u kojoj je dr. Antonio Grossich, među prvima u svijetu, počeo primjenjivati jednu tinktura za raskuživanje kože i manjih rana.



Coverpage of the book *Meine Präparationsmethode des Operationsfeldes mittels Jodtinktur.* Berlin-Wien: Urban-Schwarzenberg, 1911.

Naslovnica knjige A. Grossicha "Meine Präparationsmethode des Operationsfeldes mittels Jodtinktur" (Moj način pripreme kirurškog polja pomoću jodne tinkture). Berlin-Wien: Urban-Schwarzenberg, 1911.

development of more complex surgery. As antiseptics in the preoperative prevention of infection there were used washing with soap, the use of phenols, iodoform or sublimate. Antonio Grossich's innovation consisted in sterilizing the operation field without washing it, with direct application of iodine tincture about 10 minutes before the surgical intervention, and then repeating it after anesthesia just before initiating the operation, and then after suturing. A similar method was inaugurated by the surgeon Teodor Wickerhauser (1858-1946) in Zagreb, but he did not use it methodically nor give written information about it, while others used iodoform [10]. Iodine was a well known drug in Rijeka region, used in the treatment of late syphilis [11], and as an antimicrobial means.

In 1807 Grossich initiated his method of cutaneous antiseptics, and in 1908 wrote his first article about it [12], while in 1909 reported the results in a lecture given at the Budapest surgery Congress [13]. Later he wrote a few papers about his method that proved to be rapid, cheap, giving very good results. He first used the method of skin disinsection, after shaving, with 10% iodine tincture painting before operating urgent traumas in dirty skin of manual workers, injured in the streets, in the harbor or factories. Later he applied it also for hernias, amputations of the extremities, laparatomies, arthrotomies, craniotomies, appendectomies, prostatectomies, nephrectomies, cholecystectomy for gallstones and other. In the great majority of the cases he could close the wound per prima intentionem, and the postoperative scars practically did not present inflammation, and there was no development of sepsis. So he obtained that patients who after surgery, remained in the hospital for three weeks, now could go home after only one week [14]. He rarely had problems with contact irritant or allergic dermatitis. Furthermore in urgent cases he disinfected the surgeon hands with the iodine tincture painting. Soon, many other surgeons worldwide adopted his method and witnessed the effectiveness of the method. The Grossich' method was used also in wars. For all this reasons, it was not a surprise that in 1911 Professor Küttner at a surgical meeting in Berlin said the introduction of this method represents "the most important progress in this domain" [15]. Grossich alone demonstrated in experimental bacteriological studies the superiority of his method to washing the skin with water and soap under the microscope. Walter and Touraine in Paris demonstrated too in animals, that iodine tincture had a major efficacy in reducing the number of outgrowing bacterial cultures from the skin, than an intensive washing with water and soap [14]. Today we know that an ideal antiseptic is hard to find because it must act rapidly, have a broad antimicrobial spectrum, be nontoxic to the tissues, not cause delay in wound healing, nor influence negatively on local immunity, and finally be not too much expensive. Iodine tincture was the best choice at that time, acting against bacteria, fungi and virus.

Grossich participated actively to the political life of Rijeka, and in 1898 became municipal councilor. Later he was a great admirer of D'Annunzio and supported the annexation of Rijeka to Italy. He had a daughter named Bice, and his son Ruggero Grossich also became a surgeon and worked at the Division of surgery of Rijeka Hospital [1,15].

Antonio Grossich died on October 1, 1926.



Grossich family grave at the cemetery Kozala in Rijeka where Dr Antonio Grossich is buried

Obiteljska grobnica na riječkom groblju Kozala, u kojoj je pokopan dr. Antonio Grossich

In the recurrence of the centenary of the first Grossich's publication about his antiseptic method, it is our duty to honor Grossich's achievement as a prominent surgeon of our town. His simple antiseptic method based on iodine compound used at the beginning of the 20TH century was quite successfully, and remains important still today. Still today there is no agreement about the most straightforward technique, and MRSA in spite of antibiotics prophylaxis, represents a challenge in the contemporary operating room [16,17].

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SAŽETAK

U članku su prikazani život i postignuća dr. Antonija Grossicha, primarijusa na Odjelu za kirurgiju i ginekologiju Gradske bolnice u Rijeci. Napisao je više literarnih i medicinskih djela, a napose ga se treba spominjati zbog kliničkog i eksperimentalnog rada u primjeni antiseptičkog i aseptičkog postupka u kirurgiji. Prvi je uveo premazivanje operacijskog polja s 10%-tnom jodnom tinkturom, ponajprije kod traumatskih rana, a poslije u općoj kirurgiji. Brzina i efikasnost, uz dostupnu cijenu ove metode, omogućili su njezino brzo prihvaćanje u svijetu.

Uza stručni rad aktivno je sudjelovao u političkom životu Rijeke prije i nakon Prvoga svjetskog rata.

Ključne riječi: *povijest medicine, XX. stoljeće, kirurgija, antisepsa, asepsa, jodna tinktura, Antonio Grossich*