

Antonio Grossich, the doctor and the irredentist

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Summary

The routine use of iodine tincture in medicine represents a turning point in the history of surgical procedures. It was the Istrian doctor Antonio Grossich (1849-1926) who first defined and applied the best formula and demonstrated to the world its superiority over other antiseptics. Although his was a life guided by medicine and the steadfast translation of his political ideals into practice, Grossich's achievements were somewhat obscured by his active involvement in the Istrian irredentism of the first decades of the twentieth century.

Key words: Antonio Grossich, iodine tincture, Gabriele D'Annunzio, Fiume, Rijeka

Introduction

The column "Summaries of recent publications" in the third volume of *Pathologica* issued in January 1911, reads *"For some time, to disinfect the skin when performing surgery of some relevance, S. has been using the method advised by Grossich, brushing the area with iodine tincture. He has nothing but praise for it. In aseptic operations, the results have been brilliant, i.e., primary wound healing, where it was the case to require it. The most suitable indications for its application are found in emergency operations. S. highlights the great benefit that can arise from this method of rapid disinfection (...) warmly recommending it as one of the most useful surgical devices, even to those who, by natural inclination are attached to using the old methods"*¹. It was not a complete innovation. The previous year, an experimental study at the Institute of Hygiene of the University of Genoa, had proven the superiority of Grossich's disinfection method over others (i.e. 3% infection of injuries against 21% with the classic method)².

What were the "old methods" mentioned in *Pathologica*, and who brought the most important innovations to antisepsis? An important classic on the theme of wound healing in the ancient world was written many years ago by the pathologist Guido Majno, one of the leading pathologist of his generation in the field of inflammation. This book is a precious source of information³. In the second part of the 19th century, first and foremost it was a British doctor, Joseph Lister⁴ who discovered and promoted the most effective antiseptic surgical aids, such as carbolic acid solutions. It was Lister, who was aware of the effectiveness of phenol in treating the drainage systems of Carlisle in the north of England, who systematically disinfected injuries by spraying them – and surgical instruments – with carbolic acid before operations. His innovations were so vital that the

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medical historians would later coin the phrase “Listerian Revolution”. Lister’s achievements made him Britain’s most famous surgeon, and also garnered him a peerage. Another notable figure in clarifying the importance of asepsis and disinfection is Ignác Semmelweis ⁵, Hungarian gynecologist sadly unappreciated in his lifetime. Semmelweis proposed a method of systematic washing of hands and instruments with water and calcium hypochlorite. In turn, he faced such hostility from the medical world, it precipitated a depression that led him first to an asylum and then to his death.

Nonetheless, in a time in which gloves and masks were not universally utilized, Lister’s carbolic acid irritated the surgeons’ skin, and some of them began to use other disinfectants, including iodine tincture ⁵. It was an Istrian doctor, Antonio Grossich (1849–1926), who studied the best formula, superior to other antiseptics, introducing it to daily practice. The complex nature of Grossich also lies in the political role he played at the beginning of the last century in the troublesome “Adriatic question”, which had the city of Fiume – now Rijeka – at its epicenter. However, as often happens in these cases, medical history texts mention Grossich for his discovery (iodine tincture) and ignore his political role, while the history books talk of him solely for his role in the Fiume adventure

and make simple mention of his work as a surgeon. And yet his character as a physician emerges at every moment, even in the irredentist enterprise of Fiume.

Antonio Grossich

The Grossich family was an important family from Dragucco (the modern-day Draguč), an ancient village in Istria where Antonio was born in 1849 ^{6,7}. The family was strongly pro-Italy: in the villages, the more active, better-off social classes spoke an *istroveneto* dialect, unlike the people in the countryside, who spoke Croatian ⁶. After attending local schools, Grossich began to study at the faculty of law of the University of Graz, at the wishes of his recently deceased father. A year later, however, heeding the call of his true vocation, Antonio moved to Vienna to study at the faculty of Medicine. After graduating, he first became a general physician in the hinterland of Fiume and later enlisted as a doctor in the Austrian army on the Balkan front. He then returned to Vienna, where he specialized in hygiene, obstetrics and surgery. Thus, he was able to experience the vibrant cultural climate of Vienna in the last few years of the 19th century. He married and had two children with Edvige Maylander, sister of the future mayor of Fiume and founder of an autonomist



Figure 1. Antonio Grossich speaks to the citizens of Fiume (Rijeka). To his left Gabriele D’Annunzio.

party. After a period of commuting to and from Vienna, where he was an assistant in the surgical clinic, and where the director had urged him to remain, he moved to Fiume and became chief physician of the city hospital⁶. In spite of the commitments of his new role, he did not withdraw from politics or from publicly defending Italian identity in Fiume's newspapers, which had been threatened by the policy for Germanization in schools and by the adoption of Hungarian in technical terminology, such as at the city's naval school⁷⁻¹⁰. He was a very effective public speaker, firm yet always passionately committed to his ideals, with a presence that managed convey both warmth and severity at once (Fig. 1). He also spoke up in defence of health in the Istrian peninsula. Grossich was all too familiar with poor health and hygiene conditions in Istria at the end of the 19th century, as he had dedicated his first paper to this subject¹¹. In a recent publication, R. Cigui offers a general picture of the period¹²: cholera epidemics at a decline, the persistence of typhus and diphtheria, while southern Istria was in the grip of malaria. Smallpox also continued to strike, aided by an obtuse resistance to vaccination by a part of the population. Grossich renovated the hospital, transforming it into an esteemed modern institution that became well known even outside the confines of the region. Jan Mikulicz-Radecki and Theodor Billroth, both destined to link their names to the history of surgery and anatomical pathology, and both friends of Grossich, came to operate in Fiume⁶. It is likely that proximity to Abbazia, where the half of Europe's *beau monde* would gather, also contributed to Fiume's success. Grossich's two "Viennese" doctor friends were also brilliant musicians, who loved to perform in public: Mikulicz was a pianist and Billroth an excellent violinist and cellist. Abbazia was also good company for Grossich. During a the peaceful holiday visit, Princess Stéphanie of Belgium, wife of Crown Prince Rudolf, heir to the Austro-Hungarian Empire, was suddenly felled by an attack of acute appendicitis. Grossich operated on the princess in his hospital and she rewarded him with the gift of a beach front hotel in Abbazia, the Hotel Stephanie⁶. Grossich dedicated a literary work to the princess (*Viaggio di una principessa in Terra Santa*)¹³. He was a man of letters as well as a doctor; he adored Dante and Italian humanist culture, contributing to the establishment of a literary circle in the city, writing several plays, and animating Fiume's cultural life for decades⁷. After the First World War, during which he was held in Vienna by the Austrian government, who feared his irredentist influence, he was nominated president of Fiume's "National Council". The council was an Italian-supporting body of self-government in the city, which was then occupied by different interna-

tional troops while awaiting to know its fate after the collapse of the Austro-Hungarian empire¹⁴. Grossich was a venerable figure, with a burning faith in annexation to Italy, in a city where half of the inhabitants were or spoke Italian. In his role as president, he welcomed D'Annunzio and his legionaries with open arms when, in September 1919, they stormed the blockades and entered the city. "Now Fiume is a sister of the other Italian cities", Grossich, then 70 years old, proclaimed to the crowd, while D'Annunzio repaid him by not dissolving the National Council, a precious administrative body in a city that, from that time onwards, would need everything and have everyone against¹⁴. Grossich never ceased being a doctor during the five hundred days of the occupation, also taking care of D'Annunzio's health¹⁵ and sending him specialists. One of these, was an ophthalmologist to care for his left eye, which was disturbed "in sympathy" with the right eye he had lost in a flying accident four years before¹⁶. D'Annunzio returned the favor, worrying about Grossich's health (heart problems and kidney failure) and lavishing him with care and affection¹⁴⁻¹⁶. As the months passed, the city's situation became increasingly precarious. The population was exhausted, had suffered a cold winter (there was a shortage of wood, and a lack of shoes and even the most basic clothing) and people were starving. A doctor could not ignore certain hardships and he made this known^{7,14-17}. Even keeping public order was no simple matter; the hostile attitude of the Croats was palpable. At times even Grossich was lacking in strength ("*At 11 ½ the executive council will be meeting here in my home – since I do not feel strong enough to leave the house*")¹⁶. And yet, in spite of his advancing years and health problems, Grossich did not give up, and although resigning from his active political role, he remained alongside D'Annunzio until the tragic ending of the occupation at Christmas of 1920¹⁴. His clashes with D'Annunzio, especially over the Charter of Carnaro (the new constitution wanted by D'Annunzio and Alcide de Ambris) did not quell his devotion to the poet and to their common cause¹⁴⁻¹⁸.

Iodine tincture

It was Antonio Grossich who studied the best formulation of iodine tincture, demonstrating its superiority over other antiseptics, making it known to the world, and introducing it into daily use. In 1907, a serious accident in Fiume's paper mill gave him the opportunity to try it out⁶: there were several workers with injuries on different areas of the body. Grossich must have already known about the potential effectiveness

of the tincture since in the Fiume area, iodine had already been used to treat syphilis¹⁹ and he had also identified its utility on previous occasions⁶. The antiseptic action of the tincture had been recognized since the mid 19th century, for example, by Boinet in his treatise of 1865⁹, and it had been listed in the British pharmacopea since 1864⁵. However, there was still a counter-productive habit of washing wounds with soap and water before disinfection, which only served to allow germs to penetrate^{8-9,19}. Pre-op sterilization also used a hard brush and alcohol, ether or carbolic compresses. During the paper mill incident, Grossich defined the right solution and application: 10% tincture of iodine, to brush on 10 minutes before operating, without first washing the injury with soap solutions, then again after anesthetic and lastly, on the surgeon's sutures at the end of the operation^{5,19}. Grossich was aided by the urgency of the moment: he had to quickly medicate the injured, who were covered in sludge and rubble, and also to prepare the more serious cases for their operations. There was only enough time to remove

the rubble and dust, and to brush on iodine in the correct dilution. The success was immediate – injuries no longer became infected and were repaired “the primary intention” – which encouraged him to try using the tincture again in more difficult operations; sutures continued to stay dry and they healed far better than previously. It was possible to discharge patients a week early, as they would not be returning to hospital with festering wounds. He thus decided to submit his results to German reviews, but they were rejected. He remained undaunted, and the following year, *Zentralblatt für Chirurgie* accepted his first article²⁰. A year later, at the 16th international surgical conference in Budapest, Grossich illustrated his discovery, which soon went on to be used all over the world. After a few months, the first who came to pay their respects to him in Fiume were the Japanese, as recorded by his son, Ruggero – also a doctor – in his memoirs⁹. Grossich continued to study and to publish his findings (Fig. 2). At scientific conferences, he preferred to use Italian (at a conference in Budapest he publicly disparaged an Italian delegate who dared to speak in French, leading to him being challenged to a duel)⁶, but he knew that the science of the period spoke German and it was in German that he published a monograph on iodine tincture in 1911²¹. Then came the war in Libya (1911-1912) and Grossich was able to convince Italian army chiefs to supply its medical stations with tincture of iodine. Due to his merits as a doctor, in 1913 he was made a member of the *Ordine della Corona d'Italia*⁶. For this occasion, his acceptance speech was so patriotic that it was reported to the Austrian authorities⁹. Under his direction, the hospital in Fiume had become “a nest of conspirators, under surveillance by the Hungarian au-

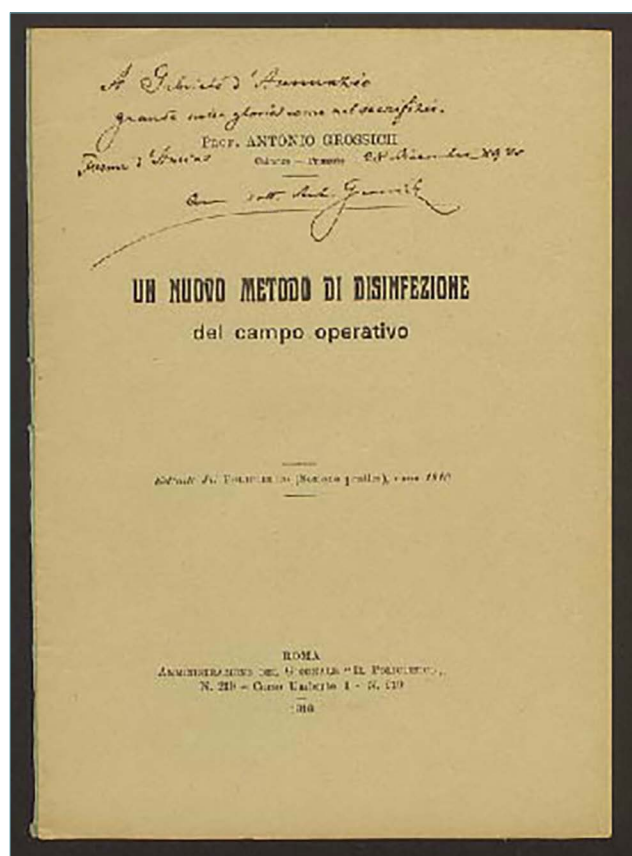


Figure 2. A scientific publication of Antonio Grossich with dedication to D'Annunzio²³.



Figure 3. Label for tin of ampoules of Iodine Tincture. 1915.

thorities,” as written by exiled Istrian, Giovanni Perini, a radiologist in his hospital ⁸.

A year later, with the outbreak of the Great War, his tincture was present on all fronts involved in fighting, and used to medicate infected wounds ²². Tetanus, septicemia and gangrene were a constant threat, in an era without antibiotics. Moreover, most of the fighting took place in the countryside, in fields fertilized with manure. A wounded soldier who fell to the ground could be easily infected. Together with the Dakin-Carrel solution (boric acid and sodium hypochlorite, developed by French surgeon and Nobel prizewinner, Alexis Carrel and by American chemist, Henry Dakin) the iodine tincture helped to save thousands of lives (Fig. 3). Grossich saw this himself from Vienna, where he was being held by the Austrian government on the grounds of him being considered a dangerous person.

Conclusion

Grossich's scientific glory was not on par with that of Lister, but he was never ostracized like Semmelweis. Nonetheless, in successive periods, conditioned by the tragic developments of Fascism and the contrasting interpretations of the Fiume question, his work as a doctor was partially obscured, in spite of all his achievements.

With the forced removal of the legionaries from Fiume, his dealings with D'Annunzio, who had now withdrawn to Gardone Riviera, did not end. Grossich was as disappointed like D'Annunzio by the Rapallo treaty, and the poet invited him to come to the lake: “I should like to come, but my soul is too shrunken and anguished, and my body is coming to the end of its now useless existence” ⁷. In truth, his passion for politics had not abandoned him; it was quite the opposite: “The treaty of Rapallo is a miscarriage, it is not viable. I see no other way out if not annexation. [...]. Mussolini has shown himself to be a brilliant operator, but in this case, the operating field is infected and hence there is a great deal of doubt about the outcome. [...]. Fiume is sick; the doctors are as unsure of the diagnosis as well as the prognosis,” he wrote to D'Annunzio ²³. After all, political and civil passion was shared by many members of the medical classes in the first few decades of the 20th century, both in nationalist and socialist terms. Some doctors were mayors of large cities or senators, for example, in Milan Luigi Mangiagalli and mayor Angelo Filippetti on the opposite sides of the political spectrum. Many of them continued as doctors, and not only in language, also in the midst of political action. Antonio Grossich, a passionate irredentist who cared deeply about Italy's historical identity, was one of them.

In a letter, he wrote: “We need the Comandante [D'Annunzio] to perform a miracle! Wait and suffer! I have been told that the Comandante is in excellent health, and I am most happy. As if the fall never happened. Excellent. In truth I have never believed he fractured the base of his skull [on 15 August 1922, D'Annunzio fell from a high window of his villa, in circumstances that were never fully explained]. I embrace my Comandante in the hope of seeing him once more before death takes me” ²³.

He was able to recover and to come back to active politics ^{14,24}, in spite of his cardiovascular problems, living long enough to be named a senator of the Kingdom of Italy and his dream of seeing Fiume reunited with Italy fulfilled. He died in Fiume on 1 October 1926. His most famous funeral elegy was that of D'Annunzio who, of the coffin of the irredentist doctor wrote: “*lasciatela tutta la notte, senza ceri, senza fiaccole, sotto le stelle. Certo, al mattino la ritroverete scopercchiata; e lui, Antonio Grossich, vedrete in piedi, tutto alzato, e con chiuso il pugno com'ei soleva quando dalla sua bontà riscoppiava l'ira*” ⁷. But perhaps the most important words were those of a fellow physician and citizen of Fiume, Lionello Lenaz: “... I would like all of war wounded, from all nations, not condemned by terrible grenade injuries to wander from village to village, as war victims with a little accordion to entertain their fellows, to know that they were spared the amputation of an arm or a leg only because a quick, providential application of iodine blocked the insidious action of gangrene and suppuration” ⁹.

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The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTIONS

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