Commentary

Pioneering Spinal Anesthesia: A Historical Examination of Benedetto Schiassi's Landmark Work

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This article investigates the first documented use of spinal anesthesia in Italy, performed by surgeon Benedetto Schiassi in 1899. Faced with the limitations and risks of general anesthesia in a critically ill patient requiring urgent leg amputation, the surgeon employed cocaine as a local anesthetic, refining the technique with innovative modifications, including reduced dosage and prone positioning to mitigate adverse effects. Archival records and period medical publications highlight these refined techniques, contributing to the broader evolution of loco-regional anesthesia. Drawing from these historical sources, the article contextualizes Schiassi's work within the global development of spinal anesthesia. His approach represents a significant milestone, influencing the adoption and evolution of spinal anesthesia as a safer and effective alternative to general anesthesia for surgery. By examining the broader historical and clinical significance of this event, the review highlights its impact on the trajectory of modern anesthesiology and surgical practices.

This investigation offers insights into the interaction between innovation and historical medical contexts. It is intended to engage historians of medicine, anesthesiologists interested in the origins of their discipline, and surgeons involved in the evolution of anesthesiological practices useful for advances in surgical care.

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Abbreviations

- cmc. = centimetro cubico/cubic centimeter

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- cg. = centigrammo/centigram
- centigr. = centigrammo/centigram
- ml = millilitro/milliliter
- mg = milligrammo/milligram

Introduction

Spinal anesthesia is a technique widely used throughout the world. It involves the injection of a local anesthetic solution into the lumbar subarachnoid space, usually between the second and fourth lumbar vertebrae. It is a commonly practised anesthetic technique that can provide surgical anesthesia for procedures below the umbilicus[1][2].

The history of medicine reports that the first spinal anesthesia in the world was performed on August 16, 1898 by the German surgeon August Bier at the Royal Surgical Hospital of the university of Kiel. The surgical intervention performed was the resection of a tuberculous ankle joint in a 34-year-old laborer patient who had previously had adverse reactions during general anesthesia. Bier's clinical decision consisted in the administration of cocaine at the lumbar spinal level, with the aim of anesthetizing only the lower limbs. The name given to it by the German surgeon was "cocainization of the spinal cord". The use of this new method was published by Bier himself[3]. The journal *Anesthesiology* recalled the event in 1998, underlining its relevance, success and widespread diffusion, in an editorial entitled "The Centennial of Spinal Anesthesia"[4].

Benedetto Schiassi and the first spinal anesthesia in Italy

In recent years careful research has allowed us to identify that it was the Bologna surgeon Benedetto Schiassi who performed the first spinal anesthesia in Italy. The day was December 27, 1899 and the location was the Umberto and Margherita Hospital in Budrio, his birthplace[5]. This date, in fact, marks the opening of the way towards the fundamental, promising and long-lasting experience of loco-regional anesthesia in Italy.

Schiassi, known especially for the surgical procedure of vagotomy in the peptic ulcer[6], following original ideas often aimed at limiting the destructive effect of surgery to the advantage of research into the restoration of the physiological function of organs and systems, also practised other innovative surgical procedures, such as the portacaval shunt in portal hypertension, transmediastinal resection of

the bronchial wall for the extraction of endobronchial foreign bodies, and minimally invasive techniques to manage varicose veins.

Less known, but of absolute importance, was Benedetto Schiassi's commitment to the field of anesthesiology, a discipline still in its infancy when he began his career.

There are four of his publications that, combined with the documentation retrieved from the archive of the Budrio hospital, attest to the first execution of a surgical operation with spinal anesthesia[7][8][9][10].

The patient, a 70-year-old man, needed to undergo urgent leg amputation, as he was suffering from progressive and worsening gangrene of the right foot.

In the first article published in the journal *Il Policlinico* (Figure 1) Schiassi describes the condition of the patient, formerly a heavy drinker, who presented arrhythmia, left ventricle dilatation and diffuse arteriosclerosis[5]. His general clinical status, characterized by agitation, mental confusion, marked pain in the foot with diffusion to the leg, dangerous toxic and infectious state, was so compromised that Schiassi considered general anesthesia extremely risky. At the time, the latter was in fact performed by inhalation with ether or chloroform and was associated with notable adverse effects and severe mortality if practised in critically ill patients.

rica, o del veleno, organico o minerale, sulla fibra stessa.

9. Le alterazioni della fibra, sia primarie che secondarie, sono sufficienti da sole a produrre la paralisi cardiaca.

Ospedale Umberto e Margherita in Budrio.

La cocainizzazione del midollo spinale.

Dott. Benedetto Schiassi, dirett. di chirurgia,
Comprimario degli Spedali di Bologna.

Il chirurgo geniale di Kiel, quando sperimentava la cocainizzazione del midollo spinale sopra se stesso e sul proprio assistente dott. Hildebrandt, aveva in animo di introdurre nella terapia chirurgica un metodo intermedio fra l'anestesia generale e quella ristretta ad una piccola regione del corpo.

Egli vide infatti corrispondere perfettamente l'atto pratico alle sue vedute teoriche, perchè seppe scegliere una cavità nella quale sono contenuti elementi nervosi, che hanno alla loro dipendenza una gran parte dell'organismo e dove si rinvengono condizioni ben favorevoli, affinchè la sostanza medicamentosa possa efficacemente esercitare le sue proprietà anestetiche sui nervi, ivi appunto sprovvisti di guaina, sopra le radici nervose e sulle cellule gangliari.

Benchè il dott. R. Odier, di Ginevra sembri essere stato il primo ad osservare sperimentalmente negli animali gli effetti anestetici della cocaina sul midollo (1), è merito tuttavia del Bier di avere utilizzato questo concetto in favore della chirurgia umana.

Le esperienze di Bier indussero alcuni chirurghi ad applicare il metodo di lui; e Zeidler con Seldovitch a Pietroburgo (2) operarono in questo senso quattro volte; in Francia Tuffier e Michaut (3) studiarono l'analgesia delle membra inferiori, provocata dal detto metodo; Jaboulay, di Lione, ebbe l'idea di combattere col procedimento di Bier la contrattura degli arti inferiori in una donna affetta da un anno da una mielite di natura indeterminata.

Ignoro che in Italia siansi pubblicate osservazioni consimili. Ne riferisco due che, non è molto, ebbi la opportunità di fare.

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P. Cesare è un uomo di 70 anni, in condizioni generali non buone, già bevitore, notevolmente arterio-sclerotico, con ipertrofia e dilatazione del ventricolo sinistro; il secondo tono è rinforzato sul focolaio aortico. Da dieci giorni è comparsa una colorazione brunastra al piccolo dito del piede destro, e gli stessi fatti sembrano iniziarsi al vicino quarto dito. La gangrena sta per invadere il piede e decido l'intervento.

Si inietta un cmc. di soluzione acquosa, contenente un centigr. di cocaina entro lo speco vertebrale; dopo tre minuti l'infermiere può applicare il laccio di Esmarch alla radice dell'arto, senza che il malato avverta dolore. Nell'assoluta analgesia, *come se il paziente fosse in preda alla narcosi cloroformica la più profonda*, amputo la gamba al quarto superiore. Emostasi e suture. Mentre sto ponendo gli ultimi punti, l'operato dice di avvertire un senso indeterminato di pizzicore: in questo momento si nota che sono trascorsi venti minuti dalla iniezione. Durante questo tempo abbiamo rilevato che a forse dodici minuti dalla somministrazione del farmaco, il paziente è sorpreso da leggero sudore, da una dispnea di frequenza di media intensità e che il polso, già abitualmente aritmico, si è fatto più piccolo e più irregolare. Dopo una iniezione di caffeina ed una di canfora, il malato torna nelle condizioni ordinarie. Fatta la medicatura, mentre sta per essere trasportato al suo letto, egli è preso da vari conati di vomito, col quale rigetta alcune boccate di liquido giallo-verdognolo. Nulla fu notato di anormale durante la giornata: solo alla sera fu necessario il cateterismo. Decorso post-operatorio regolare.

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S. Luigi è un vecchio di 72 anni in condizioni generali assai buone. Da qualche tempo soffre di dolori all'ipogastrio, frequenza della minzione, qualche volta ematuria. L'esploratore introdotto in vescica permette di affermare la diagnosi di calcolosi. La grave età del paziente e l'apparecchio su cui si doveva praticare l'operazione sconsigliano l'uso del cloroformio. Inietto nel cavo rachideo la soluzione cocainica (1 centigr. di sostanza) e nella *totale insensibilità* opero la cistotomia sopra-pubica: estraggo cinque calcoli della grossezza da una noce ad una nocciola e suturo a due piani la breccia vescicale. Posto un piccolo zaffo di garza nello spazio prevescicale cucisco l'aponeurosi e la pelle mentre dura ancora una analgesia assoluta. Nel tempo della medicatura l'ammalato vomita. Saggiando l'estensione della anestesia si nota che essa in alto si diffonde sino alla metà del petto. Nulla di anormale nel periodo post-operatorio.

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Nella tecnica dell'iniezione credetti bene di non uniformarmi perfettamente ai consigli di di Bier. Trascurai l'anestesia della pelle come preliminare superfluo e che egli ottiene colla introduzione intradermica della cocaina o col

(3)

(1) Rev. Méd. de la Suisse Rom., febbraio-marzo 1898.
(2) Sem. Méd., 1899, pag. 352.
(3) Soc. Biol., 11 novembre 1899.

Figure 1. The publication by Benedetto Schiassi reporting the experience of the first spinal anesthesia in

Italy entitled “The cocainization of the spinal cord”. It is a supplement to the journal *Il Policlinico*.

The drug used was cocaine, universally considered the forefather of all local anesthetics, and already adopted in topical anesthetic procedure, for instance during eye surgery[11].

This novel approach to anesthesia was successful, the patient was able to tolerate it and the amputation surgery was completed without any particular problems.

It should be remembered that Benedetto Schiassi used a dose of cocaine lower than that administered by Bier (10 mg instead of 15 mg), obtaining a loco-regional anesthesia that would allow him to perform the surgery while limiting the adverse effects reported by the German surgeon. In addition to reducing the amount of drug, he performed it in a prone position aided by the hand of a nurse placed under the patient's abdomen, to increase the curvature of the spine and increase the intervertebral space.

Already in his first article[7] Schiassi provides a description of the preparation of cocaine to be administered and the position of the patient.

> *Osservando, s’intende, le più scrupolose cautele antisettiche scelgo un ago lungo otto centimetri e della grossezza di un millimetro che si adatti esattamente col suo padiglione ad uno schizzetto di Pravaz, con una punta piuttosto breve, forte e ben aguzza. Aspiro da una piccola fiala appositamente preparata il cmc. che contiene un centigr. di cocaina; pongo a bagno in acqua calda la siringa così ripiena che non disgiungo mai dall’ago: in pochi minuti il medicamento è a 38°. Allora, essendo l’infermo coricato sul ventre, non in decubito laterale, perché in questa attitudine sono più facili i movimenti, infiggo l’ago fra il secondo e il terzo pezzo lombare, facendone inoltrare la punta lentamente.*
>
> *Observing, of course, the most scrupulous antiseptic precautions, I choose a needle eight centimeters long and one millimeter thick, which fits exactly with its pavilion to a Pravaz syringe, with a rather short, strong and very sharp tip. I aspirate one ml which contains 10 mg of cocaine, from a small specially prepared vial; I soak the syringe in hot water so full that I never separate it from the needle: in a few minutes the medicine is at 38°C. Then, with the patient lying in a prone position, not in lateral decubitus, because in this attitude movements are easier, I insert the needle between the second and third lumbar vertebra, making the tip move forward slowly.*

Subsequently, in the same article, Schiassi reports the succession of events that accompany the spinal anesthesia, from its execution to the evaluation of its effects, relating them to the surgical intervention, the operating timing and the clinical behavior of the patient[7]:

> *Si inietta un cmc. di soluzione acquosa contenente un centigr. di cocaina entro lo speco vertebrale; dopo tre minuti l'infermiere può applicare il laccio di Esmarch alla radice dell'arto senza che il malato avverta dolore. Nell'assoluta analgesia, come se il paziente fosse in preda alla narcosi cloroformica la più profonda, amputo la gamba al quarto superiore. Emostasi e suture. Mentre sto ponendo gli ultimi punti, l'operato dice di avvertire un senso indeterminato di pizzicore: in questo momento si nota che sono trascorsi venti minuti dalla iniezione. Durante questo tempo abbiamo rilevato che a forse dodici minuti dalla somministrazione del farmaco il paziente è sorpreso da leggero sudore, da una dispnea di frequenza di media intensità e che il polso, già abitualmente aritmico, si è fatto più piccolo e più irregolare. Dopo una iniezione di caffeina e una di canfora, il malato torna nelle condizioni ordinarie. Fatta la medicatura, mentre sta per essere trasportato nel suo letto, egli è preso da vari conati di vomito, col quale rigetta alcune boccate di liquido giallo-verdognolo. Nulla fu notato di anormale durante la giornata: solo alla sera fu necessario il cateterismo. Decorso postoperatorio regolare.*
>
> *One ml of aqueous solution containing 10 mg of cocaine is injected into the vertebral canal; after three minutes the nurse can apply the Esmarch tourniquet to the root of the limb without the patient feeling pain. In absolute analgesia, as if the patient were subjected to the deepest chloroform narcosis, I amputate the leg in the upper quarter. Hemostasis and sutures. While I am placing the last stitches, the patient says he feels an indeterminate sensation of tingling: at this moment it is noted that twenty minutes have passed since the injection. During this time we have observed that perhaps twelve minutes after the administration of the drug the patient presents light sweating, dyspnea of medium intensity and that the cardiac pulsation, already habitually arrhythmic, has become weaker and more irregular. After an injection of caffeine and one of camphor, the patient returns to normal conditions. After the dressing, while he was about to be carried to his bed, he was seized by various retchings, in which he vomited several mouthfuls of yellow-greenish liquid. Nothing abnormal was noted during the day: only in the evening was catheterization necessary. Regular postoperative course.*

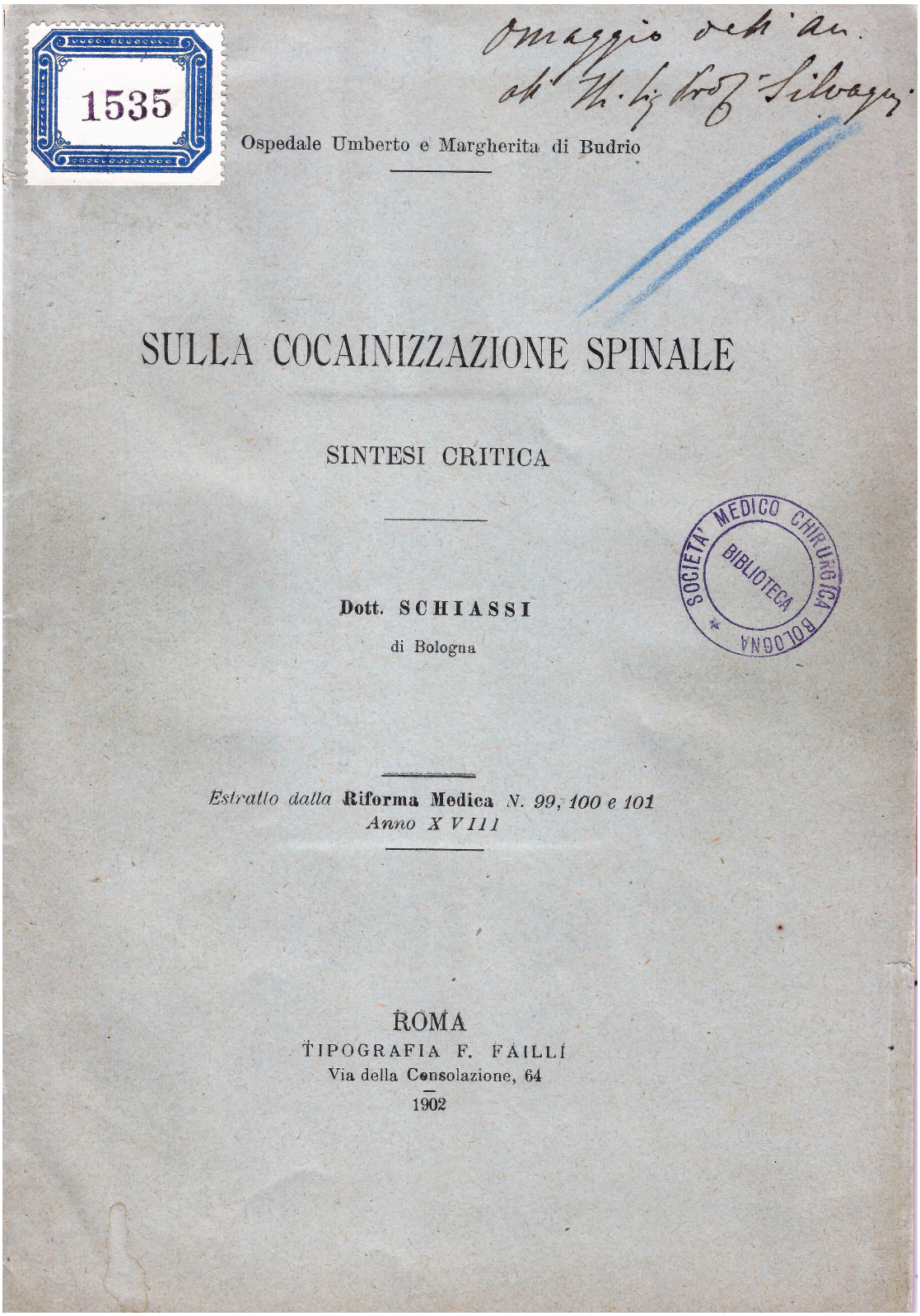

Figure 2. Benedetto Schiassi's third publication regarding his experience with spinal anesthesia (extracted from the journal *Riforma Medica* 1902). It is preserved in the archive of the Società Medico-Chirurgica of

Bologna. It appears to have a dedication placed in the upper righthand corner.

In the third article,[9] the one published in 1902 (Figure 2), Schiassi concisely outlines the anatomical landmarks to be considered safe in performing spinal anesthesia without damaging the spinal cord:

> *Si sa da fatti anatomici bene accertati che il cono midollare non oltrepassa mai nell'adulto la prima od al più la seconda vertebra lombare: ora è chiaro che, introducendo l'ago fra il secondo e il terzo pezzo lombare, non si corre mai assolutamente il rischio di offendere il midollo; né meno i nervi della coda equina possono venire lesi in qualche modo, perché allo inoltrarsi dello strumento puntuto gli elementi nervosi si vanno spostando, favoriti in questo movimento dal liquido spinale in cui, per così dire, sono nuotanti.*
>
> *It is known from well-established anatomical evidence that the spinal cord never goes beyond the first or at most the second lumbar vertebra in adults: now it is clear that, by introducing the needle between the second and third lumbar vertebra, there is absolutely no risk of damaging the spinal cord; nor can the nerves of the cauda equina be damaged in any way, because as the needle advances the nerve fibres move, aided in this movement by the spinal fluid in which, so to speak, they are immersed.*

Still in the same manuscript Schiassi then explains his decision to start performing this type of anesthesia, reiterating that he was the first to perform spinal anesthesia in Italy, as already expressed in his previous publication[9].

> *Benchè io appartenga al numero dei chirurghi che considerano la cocaina un farmaco pericoloso, pei suoi effetti di intossicamento generale impossibile a prevedersi, ed un anestetico che trova idiosincresie sfuggenti ad ogni regola, pure i fatti incoraggianti riferiti dal Bier mi indussero a mettere in pratica pel primo in Italia questo metodo, somministrando però dosi assai tenui di sostanza.*
>
> *Although I belong to the number of surgeons who consider cocaine a dangerous drug, due to its general toxic effects which are impossible to predict, and an anesthetic which presents idiosyncresies that escape all rules, nevertheless the encouraging facts reported by Bier led me to be the first in Italy to put this method into practice, however administering very small doses of the drug.*

Shortly after the successful outcome of the first spinal anesthesia, Schiassi reported performing two more surgical interventions using this technique again. He performed the second spinal to carry out a suprapubic cystotomy in order to remove five bladder stones, which were causing the patient significant colic and recurrent infections. The third was practiced to remove a rectal neoformation. These two interventions were also successful and Schiassi was able to verify and demonstrate the effective metameric extension of the method, capable of allowing interventions also on organs, such as the bladder and the rectum, located in the lower part of the abdomen, below the umbilical line. One year after performing the first spinal, Schiassi had a case-history of eight anesthesias performed with this technique on patients suffering from orthopedic, urological, gynecological and general surgery pathologies. All without significant complications.

Subsequent anesthesiological techniques did not undergo significant modifications compared to the first execution and were characterized by warming the solution to 38°C, prone position, liquor aspiration and a dosage of cocaine always of 10 mg In anticipation of a surgical intervention of prolonged duration, over 30-40 minutes, Schiassi preferred to add morphine to the solution (with doses between 2 and 4 mg) as an adjuvant drug, rather than increasing the dosage of cocaine. With these measures he was able to demonstrate that the quantity of cocaine could remain the same without precluding longer interventions and without incurring complications or significant side effects, which in other centers were reported with dosages greater than 10 mg (severe hypotension, profuse vomiting, worsening dyspnea, uncontrollable anxiety). Reevaluating in the light of current knowledge the spinal technique described by Benedetto Schiassi, two of his intuitions are to be underlined as still valid and widespread: the introduction of an adjuvant drug and the use of the patient's position as a function of the baricity of the solution injected at 38°C.

The first intuition, the introduction of an adjuvant drug, is still widely recognized in all loco-regional anesthesia. Adjuvants offer the potential to prolong the anesthetic effect and reduce the need for local anesthetics while reducing the incidence of serious adverse events. Currently, opioids such as morphine, fentanyl and sufentanyl are widely used, but also other categories of drugs such as α_2-adrenoceptor agonists (clonidine, dexdetomidine), NMDA receptor antagonists (ketamine, magnesium sulfate) and corticosteroids (dexamethasone).

The second intuition in the Schiassi experience is very interesting: the warming of the anesthetic solution at 38°C. This is well recognized as changing the baricity of the administered local anesthetic, rendering it iso - to hypobaric[12], so it is therefore interesting that it was administered to a prone-

positioned patient[13]. We do not know whether in adopting these last two technical measures Schiassi intended to optimize as much as possible the prudent dose of cocaine or whether they were simply useful behaviors to perform the method more easily through the prone position and to make the solution to be injected more sterile through heating to 38°C. We do know, however, that the position of the patient as a function of the baricity of the local anesthetic still constitutes one of the fundamental bases and practical precautions widely used in the management of a spinal anaesthesia oriented towards the different anatomical and metameric sites of many surgical interventions.

It should also be remembered that Benedetto Schiassi's publications on the topic were very in-depth and full of details. By analyzing them it is possible to compare the characteristics and peculiarities of spinal anesthesia at the beginning with those of today. Table 1 summarizes the most important differences.

	1899 (Schiassi)	2025
Patient position	Prone	Sitting, lateral, prone*
Injection level	L_2-L_3	L_2-L_3, L_3-L_4, L_4-L_5
Needle material	Steel	Stainless steel
Needle length	8 cm	9 cm
Needle diameter	1 mm	25 gauge (0.455 mm), 27 gauge (0.360 mm)
Needle tip	Short, strong, sharp	Open tip, cutting and sharp (Quinke), pencil point and side hole (Whitacre, Sprotte)**
Needle orifice location	On the tip	On the tip (Quinke), lateral (Whitacre, Sprotte)
Introducer	No	Yes
Stylet inside	No	Yes
Liquor aspiration	Yes	No
Local anesthetic	Cocaine	Prilocaine, Bupivacaine, Ropivacaine, Levobupivacaine***
Duration of action	30 minutes	60-240 minutes
Adjuvant drugs	Morphine	Morphine, Fentanyl, Sufentanyl, Clonidine, Dexdetomidine, Ketamine, Magnesium sulfate, Dexamethasone
Local anesthetic baricity	Iso – hypobaric****	Hypobaric, isobaric, hyperbaric

Table 1. Comparison of 1899 vs. 2025 spinal anesthesia techniques

Legend: cm = centimetres, mm = millimetres.

** Prone spinals are still done, though much less commonly. This is an excellent technique for hemorrhoidectomies in the jackknife, prone position using low doses of local anesthetic hypobaric.*

*** Quinke, Whitacre and Sprotte needles are currently the most used.*

**** In spinal anesthesia the mean duration of action in minutes of prilocaine is 60, of bupivacaine is 180-210, of*

ropivacaine is 180-210, of levobupivacaine is 180-240.

***** Warming to 38°C could make the local anesthetic iso – hypobaric*

Research on the attribution to Schiassi of the first spinal in Italy

The publication of the present article follows in the wake of the historical-scientific contribution published in 2019. Five years of further research, delving more deeply into the scientific context of that moment in time, have provided us with new important details on this significant event. Indeed further confirmation of the Italian primacy of this method comes from two articles published by Raffaele Bastianelli, professor of surgery in Rome, and Andrea Ceccherelli, professor of surgery in Parma. Both report having performed spinal anesthesia and both cite Benedetto Schiassi's previous experience as their point of reference for the execution of this method[14][15].

At the XV congress of the Italian Society of Surgery held in Rome in the autumn of 1900, Bastianelli declared:

> *I risultati ottenuti da Benedetto Schiassi e pubblicati nel principio dell'anno nel Policlinico mi spinsero a mettere a prova il metodo dell'analgesia midollare che si presentava in modo tanto lusinghiero.*
>
> *The results obtained by Benedetto Schiassi and published at the beginning of the year in the journal Il Policlinico prompted me to test the method of spinal analgesia which presented itself in such a convincing way.*

It should also be noted that Ceccherelli describes many side effects of the spinal anesthesia he performed (difficulty in administering it, vomiting, headache, dizziness, delirium and hyperthermia).

The attribution of the first spinal anesthesia in Italy to Schiassi is also confirmed by the invitation from the Lombardy Doctors' Association on 17 January 1902 to hold a report on the topic[16].

The literature has not yielded any other documents, scientific research or curricula relating to other Italian surgeons to whom the execution of a spinal anesthesia could be attributed in a period prior to that performed by Schiassi.

The four scientific articles published by Benedetto Schiassi are available at the Società Medico-Chirurgica of Bologna, while the consultation of some journals, conference abstracts and historical documents from

the first decades of the 1900s was possible through the Internet Archives linked to the Alma Mater Studiorum of the Bologna University.

The international debate on spinal anesthesia and its future prospects

Benedetto Schiassi's experience is part of the intense and significant debate ongoing at that time in numerous surgical centers and at international congresses on the validity of spinal anesthesia, on the appropriateness of its use and on the pharmacological role of cocaine.

In light of the severe side effects during general anesthesia performed exclusively by inhalation with ether or chloroform, there were many supporters of the new method such as the surgeons Corning in New York, Matas in New Orleans and Tuffier in Paris, who, together with Bier and Schiassi, continued to practice it despite being aware of its limits[17][18][19].

A scientific article by Murphy, professor of surgery in Chicago, after reporting the execution of fifteen cases, summarizes the advantages of spinal anesthesia[20]:

> *"Its advantages are: (1) Its ease of application; (2) thorough analgesia of all of the tissues below the diaphram; (3) the retention of the sense of touch; (4) the absence of reflexes; (5) the consciousness of the patient, and (6) the avoidance of one of the greatest dangers to surgical procedures at the present time, namely, the primary, intermediate and secondary sequences of the anesthetic, as cardiac phenomena, pulmonary lesions and renal disturbance."*

At the same time, however, other surgeons such as Reclus and Poirier reported significant failures and complications due to the imperfection of the technique, the need for high doses of cocaine, and impurities in the solution[21].

Attempts to use other local anesthetics such as eucaine and stovaine as a substitute for cocaine were accompanied by mixed results, among which numerous failures and severe side effects were reported, such as to suggest that the technique as a whole could not be credible or widely used. In the period between 1906 and 1909, however, the synthesis of a new local anesthetic, procaine or novocaine, changed the situation again, giving new impetus and credibility to spinal anesthesia. The longer duration of action and fewer side effects of the new drug compared to cocaine gradually consolidated the affirmation of this method as a fundamental anesthesiological option useful for tackling many surgical interventions below

the umbilical line. Schiassi,who was in favor of procaine from the beginning, used it with good results and encouraged its adoption. With these assumptions, spinal anesthesia and loco-regional techniques continued to establish themselves with ever greater reliability and safety.

Conclusions

We hope that this publication can serve to highlight the importance of this achievement and faithfully reconstruct the authorship of this anesthesia in Italy, its clinical context and the location where it took place, underlining Benedetto Schiassi's innovative and far-sighted vision in understanding the theoretical value and clinical utility of this anesthesiological method, still widely used today, on the occasion of its 125th anniversary.

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