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Personal Reflections on the Early Days of Anesthesia: A Gift of Science or a Product of Culture?

by

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Medicine is as much a cultural construct as literature, and in need of scrutiny with the tools of literary criticism – or even those of the surgeon, whether they be for the purpose of dissection or deconstruction. In short, the area in which literature and medicine intersect should serve to sound out a dialogue between medicine, nursing and healthcare and literary history and criticism.

(Mulvey, Porter: *Literature and Medicine during the 18th Century*)

Abstract

The extent of trust a surgical candidate places in his or her anesthetist cannot be overstated. When consenting to surgery under general anesthesia, several assumptions are made by patients. The first is that they will be safely “put to sleep” before the surgery begins and safely awakened after the surgery has ended. The second is that the whole procedure, start to finish, will be painless. These assumptions have become so engrained in the minds of patients and physicians that they scarcely bear mentioning. To fully appreciate the unique role of the anesthetist, however, we must constantly bear in mind that this trust relationship, which we now take for granted, was at one time novel.

This paper highlights writings of patients, physicians and physician-writers whose words reflect the hoped-for and perceived changes brought about by the advent of surgical anesthesia. It is organized into four sections. The first, “Without the Benefit of Anesthesia,” looks at chilling descriptions of encounters between physicians and patients before the availability of surgical anesthesia. The second, “Along Came Ether,” looks at the history and attitudes surrounding the introduction of ether anesthetic into Western Medicine. The third section addresses the beginnings of obstetrical anesthesia, which was greatly influenced by mounting public and media pressure. The final section of the paper, “Doctors, Patients and Anesthetics, A Progression in Short Narrative,” focuses solely on short stories that illuminate the experience of surgical anesthesia for both doctors and patients.

How the introduction of anesthesia changed the physician-patient dynamic is a story in itself. In this paper, the story is told through the narrative and literary accounts written before, and just after, the widespread adoption of general anesthesia.

Introduction

This paper is organized into four sections. The first, “Without the Benefit of Anesthesia” looks at encounters between physicians and patients before the availability of surgical anesthesia. The second, “Along Came Ether” looks at the history and attitudes surrounding the introduction of ether anesthetic into Western medicine. This section revolves around patient accounts as well as physician’s reflections, and explores how the availability of surgical anesthesia changed medical practice. The third section addresses the beginnings of obstetrical anesthesia, which differed from surgical anesthesia by the extent to which mounting public and media pressure affected development. The final section of the paper, “Doctors, Patients and Anesthetics – a progression in short Narrative” focuses solely on short stories that illuminate the experience surgical anesthesia. Interestingly, two of the five tales mentioned; “Idol with Hands of Clay” and “A Surgeon Talks,” are written by physicians. The characters mentioned in this section encounter anesthesia in various settings. Their experiences are interesting to consider separately, and, as a whole.

This paper should serve three purposes: The first is to examine early developments in anesthesia in a broader societal context. The second purpose of this paper is to entertain. The third is to gently remind those involved in the practice of anesthesia of the history, and humanity, of their chosen art.

Without the benefit of anesthesia – “A Terror Surpassing All Description”

There is no doubt that invasive surgery before the availability of anesthesia must have been excruciatingly painful; the thought brings a shudder to even the least imaginative among us. Unfortunately for the literary world, tremendous pain is often described as that which “defies description.” Given that fact, there exist few first hand narratives describing the patient’s experience of surgery before anesthesia. Of those that do exist, one is particularly well known among medical historians; the story of Fanny Burney’s mastectomy written by Fanny in a letter to her sister. Burney (1752-1840), an accomplished novelist, underwent a mastectomy for a tumour at the age of fifty-nine. She was operated on by Baron Dominique de Larrey (1776-1842), the most well respected military surgeon of the day and surgeon to Napoléon Bonaparte (1769-1821). During the time of the Napoleonic Wars, speed, and the skilled hand of the surgeon were the only ways of dealing with pain. Baron Larrey, from a technical perspective, was a skilled surgeon with particular expertise in field amputation. He was also patient-centred in his approach to surgery, and preferred early amputation rather than allowing the patient to wait and weaken in pain. In his memoirs, Larrey described an amputation performed on a general to whom he was personally connected:

Such a disorder necessitated the amputation of the arm; the general himself demanded this; he also put up with it with extreme courage, and perhaps with too much concentration, because he did not utter a single word. Being much attached to this brave general, I operated on him with all speed possible in order to shorten his pains.

(Rey, 1994, p. 153)

This quotation highlights the surgeon’s empathy towards his patient. It also points out the skilled surgeons’ primary concern before the advent of anesthesia: speed. The line

of thinking at the time was clear: the faster the operation, the better the outcome, and the shorter the ordeal for the patient.

It is in this context that Fanny Burney, former under-dresser to Queen Charlotte (1744-1818) and member of polite society of the romantic period, submitted to a mastectomy under a team led by Baron Larrey. Fanny's letter to her sister, written in most eloquent prose, demonstrates amazing bravery and clarity of wit during a most painful encounter. Her vivid description could be taken to represent a patient's experience of "surgery at its finest" in the early 1800s. It also reveals much about the patient-doctor relationship as it existed in 1810. Notably, once Fanny had elected for surgery, she was not told when the operation would be. Instead, Larrey's team called only a few hours before the surgery was about to take place. This (theoretically) served to decrease the amount of worry on the part of the patient.

On arrival of the surgical team, it is clear to Fanny that Barron Larrey is the most responsible member of the surgical team. This responsibility is met, in the eyes of Fanny, with an attempt to distance himself from her, his patient. Throughout the operation, Fanny's face is veiled with a cambric cloth through which she can see the whole operation. She sits up and attempts to respond several times to startling images or conversation among her attending physicians, but not once is she included in their exchanges. It has been suggested by John Wiltshire that this veil, which shields Fanny's face from the surgeons but through which the surgeons faces are visible, is used to transform her into an "object" of medical intervention – able to see and feel, but with dismissed expression (Mulvey and Porter, 1993, p. 257). If this is the case, the intentions of the physician are neither complicated nor profound. It seems reasonable that a physician might have to distance himself in some way if he is to perform such a torturing, but curative, procedure. Thus, the veil reflects an attempt to guard against overwhelming sensitivity that could impede the success of the operation.

Through the veil, Fanny perceives that despite his appearance and the firm confidence with which he operated, Baron Larrey was indeed empathetic; "Dr. Larrey kept always aloof, yet a glance showed me he was as pale as ashes." (Robertson, 1998, p. 28). In Fanny's recollection, he spoke "in a voice of solemn melancholy" and "in a tone utterly tragic" (ibidem, p. 29f.). Although Fanny approves of Baron Larrey's demeanor, the militant attitude of his counterparts distresses her. Their lack of compassion, which resolved as the operation proceeded, provoked noncompliance:

M. Dubois now tried to issue his commands en militaire, but I resisted all that were resistible. I was compelled, however, to submit to taking off my long robe de chambre, which I had meant to retain ... My distress was, I suppose, was apparent, for M. Dubois himself now softened, and spoke soothingly.

(Robertson, 1998, p. 28)

Fanny's letter has two major focal points: One is the unbelievable suffering that she endured at the hands of her attending physicians. The other, is an analysis of her attending surgeons. Fanny found solace in compassion, and would not grant the surgeons power over her body unless she identified a note of compassion in their demeanor. Once she had identified this necessary component, she became "sensible to the feeling concern with which they all saw what I endured", and she accepted the operation with all her courage, and without the use of restraints (Robertson, 1998, p. 30).

At the end of the operation, rather than *self* reflection, Fanny describes a focused concern for her *surgeon's* condition: "My good Dr. Larrey, pale nearly as myself, his face streaked with blood and its expression depicting grief, apprehension, and almost horror" (ibidem, p. 30). Thus, although the pain of the operation induced "a terror surpassing all description", her last words about the ordeal painted her surgeon in a positive light, and were actually empathetic for *his* suffering. To put this ending in context, we must understand that Fanny Burney grew up in the age of sensibility, a period which combined an emerging focus on responsiveness to emotion with lingering emphasis on judgment and restraint. During this period, control, followed by sensitivity, were among the highest measures of human worth (Mulvey and Porter, 1993, p. 245) in her letter, Fanny ascribes these characteristics to her surgeon, Baron Larrey. Fanny's confidence in her surgeon was not what cured her sickness, but it was necessary for her compliance during the traumatic operation that, in the end, prolonged her life.

This account by Fanny Burney is unique, since she is considered to be exceptionally skilled in the art of literary expression (Mulvey and Porter, 1993, p. 245). We are fortunate to have this account, but still must be wary that this is one woman's account – and that her social status in Western European society may have contributed to the care with which she was handled. Indeed, for the patient of a lower class who was not privileged to be operated on in the comfort of their own home, the experience would be different.

From Fanny Burney's account, which provided us with a patient's firsthand experience of early surgery we move across the Atlantic, to consider the experiences of Dr. John Collins Warren (1778-1856), a surgeon whose name figures prominently in the introduction of anesthesia in the United States. Dr. Warren witnessed a very different patient-doctor interaction in the American hospital setting:

In the case of amputation, it was the custom to bring the patient into the operating room and place him upon the table. (The Surgeon) would stand with his hands behind his back and would say to the patient, "Will you have your leg off, or will you not have it off?" If the patient lost courage and said "No," he was at once carried back to his bed in the ward. If, however, he said "Yes," he was immediately taken firmly in hand by a number of strong assistants and the operation went on regardless of whatever he might say thereafter.

(Crichton, 1970, p. 86)

The compassion that Fanny detected in her surgeons is nowhere to be found in this account. That being said, the same trust and iron resolve that Fanny possessed in order for her surgery to proceed, is demanded of the American surgical patient.

A second account of surgery without anesthesia was penned in 1843 by George Wilson (1818-1859) in a letter to James Young Simpson (1811-1870) – the soon to be father of chloroform anesthesia, and a physician with whom Wilson would work closely. Wilson, himself a professor and a published scientific writer, clearly doubted the value of pain in surgery and favored surgical anesthesia:

In its relation to the body, it is a sheer and unmitigated evil, and every fresh attack of suffering only furnished a fresh proof of the sensitiveness possessed to pain, and increases the apprehension with which its attacks are awaited ... From all this distracting mental struggle, which reacted very injuriously on my bodily constitution, I should have been

exempted, had I been able to look forward to the administration of chloroform. A far greater amount of internal composure and serenity would then have been mine, and this mental peacefulness would have been a powerful aid towards sustaining my strength, and fitting me to bear the shock of the operation.

(Griffith, 1962, p. 106)

A Surgical Satire – Melville's Fleet Surgeon Cuticle

Before the advent of anesthesia, the amputation was the most common surgical procedure performed (Smith, 1991, p. 43). If it could be done with speed, it proved life saving for patients with severe wounds of the extremities. The spectacle of an onboard amputation figured prominently in Herman Melville's (1819-1891) 1843 novel *White Jacket*. Considered one of America's literary geniuses of the 19th century, Melville's depiction of surgery warrants a closer look.

Herman Melville traveled the world as an adventurous sailor. His many works have been extensively studied and critiqued, and for our interest, have been flagged for the many encounters with the medical world that are woven throughout his stories. Melville was heavily influenced by Sir Thomas Browne (1605-1682), a 17th century British physician-writer who wrestled mightily to reconcile scientific with humanistic thinking (Smith, 1991, p. 60). On a personal level, Melville was influenced by his 17-year old sister's surgical success story, where at the age of seventeen, she underwent surgery that allowed her to walk for the first time.

Given Melville's exposure to physician writers, his encounters with disease, and his close personal relationships with practicing physicians (including Oliver Wendell Holmes Sr., 1809-1894, father of the term "anesthesia"), the presence of the medical world in his work is not surprising. Melville welcomed the curative properties of Western medicine, but was discontented by the unchecked callousness of certain medical professionals (ibidem, p. 205). Indeed, his portrayal of the fleet surgeon Cuticle in the novel *White Jacket* (1850) reveals much of this discontent.

The novel *White Jacket* was published in 1850, and it is loosely based on Melville's 1843 voyage from Honolulu to the United States on a US naval ship (Gordon, 1996, p. 38). The description of amputation in *White Jacket* does justice to an historical medical procedure, while simultaneously exposing the character of the fleet surgeon Cuticle. Like Baron Larrey during Fanny Burney's mastectomy, the surgeon Cuticle needed to distance himself from the suffering patient in order to perform a clean and swift amputation:

But though, like all other mortals, Cuticle was subject at times to these fits of passion- at least under outrageous provocation – nothing could exceed his coolness when actually employed in his imminent vocation. Surrounded by moans and shrieks, by features distorted with anguish inflicted by himself, he maintained a countenance almost supernaturally calm; and unless the intense interest of the operation flushed his wan face with a momentary tinge of professional enthusiasm, he toiled away, untouched by the keenest misery coming under a fleet-surgeon's eye. Indeed, long habituation to the dissecting-room and the amputation table had made him seemingly impervious to the ordinary emotions of humanity, yet you could not say that Cuticle was essentially

a cruel hearted man; His apparent heartlessness must have been of a purely scientific origin.

(Melville, 1892, p. 235)

Drawing from his satirical portrayal of fleet surgeon Cuticle, it is clear that Melville laments the “apparent heartlessness” that the performance of surgery necessitated. Melville mocks the character that he created, in an attempt to express a certain dissatisfaction with surgeons of his day. Like the practicing physicians to which Melville had become acquainted, the successful surgeon embraced with fervor the science of medicine whilst distancing him from the humanity of the profession. The extreme result of this mentality is the character Cuticle, portrayed by Melville as an “overzealous amputator”:

But not withstanding his marvelous indifference to the sufferings of his patients, and despite his enthusiasm in his vocation, Cuticle, on some occasions, would effect a certain disrelish of his profession, and declaim against the necessity that forced a man of his humanity to perform a surgical operation [...] he would veil his eagerness under an aspect of great circumspection [...] But the knife once in his hand, the compassionless surgeon himself, undisguised, stood before you. Such was Cadwallader Cuticle, our Surgeon of the fleet.

(Melville, 1892, p. 235)

Henry Hickman and Barron Larrey: Attention and Innovation to Relieve Suffering

In 1824, English country doctor Henry Hill Hickman (1800-1830) looked to the brief stupefying effects of carbon dioxide inhalation as a way to relieve patients from the pain of surgical procedures. His experiments on animals were performed with the goal of eventually transferring to humans the gift of painless surgery (Raper, 1993, p. 58). Hickman, young family practitioner intent on relieving the suffering of his patients, turned to science for help. In 1824, he wrote the following to a fellow member of the *Royal Society of England*:

There is not an individual who does not shudder at the idea of an operation, however skillful the surgeon or urgent the case, knowing the great pain that the patient must endure, and I have frequently lamented, when performing my own duties as a Surgeon that something has not been thought of whereby the fears may be tranquilized and suffering relieved.

(Nuland, 1983, p. 33)

During that year, Hickman also published his famous pamphlet, wherein he described his ultimate vision of success for carbon dioxide inhalation in humans:

My own experience has satisfied me that in very many cases the best effects would be produced by the patient's mind being relieved from the anticipation of suffering, and his body from the actual suffering of a severe operation; and I believe that there are few, if any surgeons, who could not operate more skillfully when they were conscious they were not inflicting pain.

(ibidem, p. 33)

Hickman, rather than distancing himself from his patients suffering, upholds compassion as an inevitable constant. From within the medical profession, he admits that the

humanity of the physician should and indeed cannot be ignored. Rather than the physician becoming indifferent to the patient in pain, Hickman suggests that it is the surgical procedures themselves that must change to accommodate the humanity of the physician. He is an innovator looking for a scientific solution to the problem of suffering – a new way of thinking. This attitude of innovation presents a stark contrast to Melville's portrayal of the surgeon Cuticle. Although both men espoused a love of science, Henry Hickman was progressive in his use of scientific innovation. For Hickman, science was a means to allow surgery a place within the humanistic medical practice. Interestingly, the respected Baron Larrey was one of the few physicians in Europe who supported Hickman's first attempts at anesthesia in Great Britain in 1828. In her study, *The History of Pain*, Roselyne Rey reports that the basis of Larrey's support for Hickman is experiential:

From his experience as a war surgeon and his memory of the pains of gangrene caused by frostbite endured by the soldiers during their retreat from Russia, Larrey came to the conclusion that you had to do everything you could to spare patients and the wounded from pain.

(Rey, 1994, p. 154)

Although by 1824 the search for an effective form of inhalation anesthesia had begun, neither nitrous oxide, nor the introduction of increasing concentrations of carbon dioxide into the lungs, lived up to Hickman's or Larrey's hopes for painless surgery. Neither provided the sustained and deep anesthesia required to make painless the prolonged invasive procedure. Not until the introduction of ether anesthesia into the practice of medicine did such a tool exist.

Along came Ether

Warren, Bigelow, Magendie, Weir Mitchell – The Physicians Speak

The question of who deserves credit for the discovery of surgical anesthesia has been a subject of much debate, and many works have been devoted to mapping out the exact chronology of its initial use (Keys, 1963, pp. 103-131). It was the inhalation of nitrous oxide by Sir Humphrey Davy (1778-1829) that made known the powers of pneumatic (inhalation) medicine, and thus, set the stage for the discovery of the anesthetic properties of ether some forty years later. Until that time, laughing gas and ether frolics were still merely en vogue forms of entertainment. So why do we accept October 17th, 1846 in Boston, Massachusetts as the advent of inhalation anesthesia for surgery? It is true that there had been previous successes with nitrous oxide, and sulfuric ether during minor extractions, but none so well substantiated that they led definitively to the spread and use of ether into surgical practice.

We consider Gilbert Abbott (1811-1856) the first patient to have undergone an invasive procedure under anesthetic. The procedure involved the removal of a benign vascular tumour of the neck, and the attending surgeon was John C. Warren, a senior surgeon at Massachusetts General Hospital (Sykes, 1960, p. 61; Ellis, 1984, p. 54). Warren's account of the events, published in the *Boston Medical and Surgical Journal* on December 3rd, 1846, reads as follows:

The operation was completed in two or three minutes, and the patient remained quietly on his back with his eyes closed... After he had lain about two minutes I roused him by the inquiry, "how do you do today?" to which he replied, "very well, I thank you." I then asked what he had been doing. He said he believed he had been dreaming; he dreamed that he was at home, and making some examination into his business. "Do you feel any pain?" "No." "How is that tumour of yours?" The patient raised himself in bed, looked at his thigh for a moment, and said "it is gone, and I'm glad of it." I then inquired if he had felt any pain during the operation, to which he replied in the negative. He soon recovered his natural state, experienced no inconvenience from the inhalation, was remarkably free from pain, and in three days went home into the country.

(Nuland, 1983, p. 77)

This quotation demonstrates a patient focus that was not previously expected of surgeons. The advent of anesthesia meant that they no longer had to desensitize themselves to the suffering of the patient – in fact; the development of anesthesia was contingent upon the physician's committed attention to the patient to ensure that the anesthesia was adequate and the patient stable.

In general, it can be said that the introduction of anesthetic into the operating room drastically changed the atmosphere of the operating theatre. Instead of the terrified screams of patients, operating theatres resounded with such quiet that Warren himself was astonished: "Standing myself on one side of the patient, while the operator was on the other, so entirely tranquil was she that I was not aware the operation had begun, until it was nearly completed" (Nuland, 1983, p. 77). Warren's writings demonstrate great insight into the impact of anesthesia on the medical world – insight gained from a long career performing surgery without the benefit of anesthesia. Two years after he had performed the first surgery under ether, Warren wrote the following:

A new era has opened on the operating surgeon. His visitations on the most delicate parts are performed, not only without the agonizing screams he has been accustomed to hear, but sometimes in a state of perfect insensibility, and, occasionally, even with an expression of pleasure on the part of the patient.

Who could have imagined that the drawing of the knife over the delicate skin of the face might produce a sensation of unmixed delight? That the turning and twisting of instruments in the most sensitive bladder might be accompanied by a delightful dream? That the contouring of ankylosed joints should coexist with a celestial vision? [...] and with what fresh vigor does the living surgeon, who is ready to resign his scalpel, grasp it, and wish again to go through his career under the new auspices.

(Nuland, 1983, p. 70)

Dr. Warren, the attending surgeon for the first public demonstration of anesthesia in surgery, was not the only early champion of sulfuric ether. Another physician who figured prominently in exposing the scientific community to the new auspices of surgery was Dr. Henry Bigelow (1818-1890) – another surgeon at the Massachusetts General Hospital. Bigelow had been in attendance during Morton's presentation of ether anesthesia, and from that day, was determined to bring Morton's discovery the medical recognition that he felt it deserved (Browner, 2005, p. 21). On November 9th, 1947, the *Boston Medical and Surgical Journal* published the first formal announcement of Morton's ether, authored by Dr. Bigelow himself. This paper contained medical evidence

in the form of patient centered vignettes. One of the more amusing vignettes in Bigelow's "formal report" is his attempt to capture a 12-year old boy's experience of a tooth extraction. While Bigelow is intent on describing the physiological effect of the anesthetic, he also devotes attention to the emotional effects of ether on the young boy:

A stout boy of 12 ... upon actually awakening he declared "it was the best fun he ever saw," avowed his intention to "come there again", and insisted upon having another tooth extracted upon the spot ... Pulse at first 110. During sleep 96, afterwards 144; pupils dilated.

(Nuland, 1983, p. 81)

This vignette provides a humane contrast to the pre-anesthesia era, when (in the case of Europe's renowned surgeon Robert Liston, 1794-1847), the surgeon's job description occasionally included: 1. chasing the frightened patient down the hall, 2. breaking down the bathroom door and, 3. having mounting the patient on one's back, returning to the operating table. (Liston, incidentally, went on to become the first European surgeon to use ether during an amputation (Ellis, 1984, p. 60).

Hesitation and Opposition: Ether and the Question of Human Dignity

Despite the overwhelming improvement that the advent of ether anesthesia made in patient comfort before and during surgery, the introduction of anesthesia into medical practice was met with certain reservation. There were those, such as Warren himself, who, given its imperfect safety record, championed its use but cautioned that it be used with discretion and only in the hands of experts. There were others in Europe, whose opposition to surgical anesthesia stemmed from concern for the well-being and decency of the patient, given that the dosing and duration of ether needed to produce a given length of anesthesia had not yet been elucidated by the scientific community. In February 1847, the French Academy was still debating the safety of ether after several suspicious patient reactions. In February 1847, there was not yet a formal position statement on the use of ether. Nonetheless, the public press had seized the success stories of etherization, and, capitalizing on the public's desire for the sensational, popularized a procedure that the scientific community did not yet support (Rey, 1994, p. 179). The well-respected French experimental physiologist François Magendie, 1783-1855, figured prominently in the debate among French physicians/scientists regarding the use of ether (Fulop-Miller and Paul et al. 1938, p. 91). He was wary of public pressure influencing the scientific debate, and he was reluctant to introduce to patients a drug whose use was still in experimental stages, thus making them "human subjects". Magendie, a proponent of rigorous scientific testing and experimentation, expressed his opinion to the academy in no uncertain terms:

This is the first time I hear resounding in these walls an account of the marvelous effects of sulphuric ether (for this could hardly be said of other ethers), a kind of narrative which the press seizes and takes further, thus satisfying this insatiable and avid need of the public for the miraculous and the impossible. What I see most clearly in these accounts is that, with the doubtless laudable goal of operating without pain, they intoxicate their patients to the point of reducing them to what one could term the state of a cadaver which one cuts or carves with impunity and without any suffering.

(Magendie qtd. in: Rey, 1993, p. 180)

Magendie questioned the power imbalance between physicians and patients that he felt was created by the patient's lack of awareness during surgery with anesthesia. He thought it unethical to operate on an insensible patient, and thought that it potentially violated the patient's rights. To the commission on ether at the French academy, he gave accounts of young women who had "dreams such as one should not have" under the influence of ether, and worried the physician was responsible for any untoward action that this lack of inhibition could produce. This fear about the loss of ethical agency is not unreasonable, especially in the case of anesthesia, where the physician's mandate to protect the patient is presupposed and then unchallenged once the patient is under the effects of anesthetic. Nonetheless, the urgency with which patients, and ultimately, the medical community sought a solution to the problem of pain superseded doubts about the physician's ability to handle the power entrusted to them (Rey, 1993, p. 180f.).

Although the opposition to early implementation of ether anesthesia would not prove strong enough to override its immediate installation into surgical practice, it is interesting to consider the arguments made. Magendie opposed the use of ether in an attempt to protect the vulnerable patient. Implicit in this argument is acknowledgment of the new power imbalance that anesthesia created between doctor and patient. Magendie did not take lightly the new power entrusted to attending physicians, and highlighted the fact that in order to avoid pain, patients were willing to accept a position of vulnerability.

Fifty years following the introduction of anesthesia by William T.G. Morton (1819-1868), a poem was read which attempted capture the meaning of anesthesia to mankind. The poem, entitled "*The Birth and Death of Pain*" was written by Dr. Silas Weir Mitchell (1829-1914), a prominent American physician-writer. This poem examines the patient doctor relationship before, and after the use of surgical anesthesia. Weir Mitchell, himself a physician, was cognizant of the litany of contradictory emotions felt by an operating surgeon. As one who showed pity and mercy through mercilessness, Mitchell acknowledged that the surgeon before anesthesiology could not be affected by patient's cries. He was to be conscious but unwavering, and could acknowledge the body only as a mechanic would a machine. If the surgeon was to take pity on the patient, his only vehicle to express it was through perfect skill. The demands on the surgeon were many, unnatural, and complex:

A word for him who, silent, grave, serene,
The thought-stirred master of that tragic scene,
Recorded pity through the hand of skill.
Heard not a cry, but, ever conscious, still.
In mercy merciless, swift, bold intent,
Felt the slow moments that in torture went
While 'neath his touch, as none today has seen,
In anguish shook life's agonized machine.

Ultimately, Weir Mitchell thanks anesthesia for instilling a sense of humanity to the art of surgery.

Yet who that served this sacred home of pain
Could ere have dreamed one scarce-imagined gain,
Or hoped a day would bring his fearful art
No need to steal the ever kindly heart.

Putting Knowledge into Practice: Finney, German Surgeons, and Harvey Cushing

Although renowned American, French, and English surgeons embraced anesthesia to improve their practice, not every surgeon shared this sentiment. In 1894, renowned American surgeon, J.M.T Finney (1863-1942), set out to observe surgery in Germany – a country at the forefront of medical innovations at the time. While in Germany, Dr. Finney was surprised at the general lack of humanity in the surgery theatres:

On that one occasion the patient was a young woman of about twenty. She was wheeled into the operating room on a stretcher, and then stripped of all her clothing, lifted to the operating table, and tied there by the orderlies with bandages binding her legs together and her arms by her sides, with her head pulled back over the end of the table and tied fast there in a most uncomfortable position. Thus she could not move her head, arms or legs, but could only cry. The whole procedure was brutal ... When she cried from fright and from the rough handling, one of the orderlies would smack her on the side of the face and roughly tell her to shut up. When the surgeon himself came in, she was crying loudly and begging for mercy. He walked over and gave her a resounding smack on the cheek and in turn told her to be quiet. He then proceeded to do the operation, a most painful one, without a drop of anesthetic of any kind, believe it or not. The poor girl screamed and cried until she stopped from sheer exhaustion, the details of the operation are too horrible to relate.

(Finney, 1940, p. 126)

When Finney asked why the girl had not been given any anesthetic, the surgeon shrugged and replied: “It wasn’t necessary. We could hold her” (ibidem, p. 127). Although the author admits that this tale is unique in his surgical experience, Finney’s reaction to his observations reveal the important position that anesthesia had already assumed in other centers of Western medicine until 1894. The tone of Finney’s account clearly communicates his position on anesthesia as an indispensable part of modern surgery.

By the time Harvey Cushing (1869-1939) entered surgical practice at the Massachusetts General Hospital, etherisation for surgical procedures had become a common procedure. Cushing himself was no stranger to the practice of anesthesia. As a medical student he had been an “etherizer” at the hospital, and in 1921, he was chosen to give the annual “Ether Day” address. In 1900, Cushing, who had established himself as a surgeon at Johns Hopkins University, took his second trip overseas to vacation with Osler and several other young medical men. During his time in Europe, he viewed several surgeries in England, Paris, and Germany. Cushing’s personal diaries, written during that time period, betray a sense of disappointment at the surgical procedures he observed. In American institutions, Cushing had become accustomed to a practice where respect for the privacy of the patient was paramount and measures to improve patient comfort were embraced early. In Europe, however, Cushing was surprised by the standard of patient care in certain departments. In Switzerland, for example, he describes in his notes a surgical procedure done to remove a goiter from a young girl:

Girl brought into op. room ... prepared on table before remainder of class – shivering with cold. Covered with wet cloths and operated with no anesthetic, not even a little morphine. She cried out once or twice – not at skin incision however. R. (surgeon) did the extirp. beautifully.

(Cushing qtd. after: Bliss, 2005, p. 138)

After witnessing another operation on an elderly patient without anesthetic, Harvey questioned the surgeon about the potential use of anesthetic on the elderly population. The surgeon laughed, convinced that he would not have time for such things. And so, even in 1900, over 50 years since the birth of anesthesia and less than five years after W.H. Mitchell's epic poem embracing the new discovery, anesthesia had not become universal practice in European teaching hospitals. Although embraced by many and so seemingly universally standard, it was, in practice, not always seen as an indispensable gift to surgical procedures. Why was this the case? This passage suggests a physician's lack of commitment to patient comfort, in favor of older and quicker habits.

Tales of Chloroform, and Obstetrical Anesthesia

History of Obstetrical Anesthesia, and the Monarchy – “Thank God she had chloroform”

The use of ether for the first time in an obstetrical procedure occurred just over one year after it was first introduced into practice in America. The responsible physician was James Young Simpson, chief obstetrical assistant at Edinburgh Infirmary. James Young Simpson was driven by his desire to soothe the pain of his labouring patients. Thus, once news came to Edinburgh of the first painless surgery in Europe (performed by Lord Liston in December 1846), Simpson hastened to London to observe the surgery, and then attempted it on his own obstetrical patients. When met with scepticism for his actions, Simpson made his opinions on obstetrical anesthesia clear:

The question which I have been repeatedly asked is this – will we ever be “justified” in using the vapour of ether to assuage the pains of natural labour? [...] looking at the facts of the case, and considering the actual amount of pain usually endured, I believe that the question will require to be quite changed in its character. For, instead of determining whether we shall be “justified” in using this agent under the circumstances named, it will become, on the other hand, necessary to determine whether on any grounds, moral or medical, a professional man could deem himself “justified” in withholding, and not using any such safe means (as we at present pre-suppose this to be).

(Faulconer and Keys, 1965, p. 110)

Simpson's use of ether anesthesia during labour was not free of complications. Although it did produce the desired unconsciousness, the women in delivery experienced nausea, giddiness, and vomiting as a result of administration of the malodorous compound (Fulop-Miller and Paul, 1938, p. 329; Raper, 1945, p. 98). At the suggestion of a chemist friend, Simpson set out to make the transition from ether to chloroform anaesthetic. Before using chloroform on patients, Simpson and several other physician colleagues self-experimented with chloroform inhalation. From there, the first patient trials created a great deal of enthusiasm, especially amongst surgeons, who noted that its action was more rapid and longer lasting than that of ether and thereby offered greater security to the operator.

The first child to be born under the influence of chloroform was a daughter of a medical friend of Simpson, christened “*Anesthesia*” (Griffith, 1965, p. 111). Following that, however, despite Simpson's good intentions, the use of anesthesia in labour was not

met with an air of celebration. Many were outraged that Simpson would have the gall to rebel against God's divine command in the third chapter of Genesis – "I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children" (Robinson, 1946, p. 204). Preachers warned women that their children would be refused baptism if they allowed Simpson to administer chloroform during birth. Citizens, worried about moral condemnation, joined with physicians in condemning obstetrical anesthesia as an act disrespectful to the sanctity of childbirth. To counter these accusations, Simpson quoted Genesis ii, 21: "And the Lord God caused a deep sleep to fall upon Adam, and he slept: and he took one of his ribs, and closed up the flesh instead thereof." This, Simpson argued, made God himself the first anaesthetist (Robinson, 1946, p. 204). Thus, there ensued a great theological debate between Simpson and the religious elite. At the same time, Simpson was arguing his case to his colleagues, and to the laypeople for whose benefit he had been motivated to use ether in obstetrics in the first place.

The debate over the acceptance of chloroform into obstetrical practice was not only a theological one. There was also a question of safety, and the medical communities were called to look into several sudden deaths that occurred simultaneously with chloroform administration. Physicians were wary of the unknown, and so to protect their patients, they opposed the unchecked use of chloroform anesthesia until they could be convinced of its safety. At the same time, the battle against submission to pain and suffering remained a major motive for reform in 19th century. For six years, Simpson continued to advocate for the use of chloroform. The battle for public approval was finally won in 1853, when Queen Victoria's (1819-1901) *accoucheur* recommended chloroform to assuage the pangs of labour. The chloroform served its purpose well, and after having delivered Prince Leopold, Duke of Albany (1853-1884) in April 1853 following chloroform administration, Queen Victoria made Simpson a Baronet. The acceptance of chloroform anesthesia by Her Majesty as a "blessed" substance quickly rested any popular opposition to the drug, for it was generally not thought that the Queen would do anything in opposition to the word of God (Fulop-Miller, 1938, p. 341). And thus, the popular tradition of accepting pain as part of a women's "lot in life" was over. Indeed, physician Oliver Wendell Holmes Sr. (1809-1894) would go so far as to say that "the reign of tradition was over, and humanity was able to assert all its rights" (Caton, 1999, p. 126).

The acceptance of obstetrical anesthesia had dramatic consequences for the evolution of the patient-doctor relationship. As with ether anesthesia before it, the popular press began to champion the cause of the "patient's right to chloroform anesthesia." Led by their revered Queen, women were especially enthusiastic, and yet it was still often difficult to find a physician compliant with their wishes. Even John Snow (1813-1858), the first full time anaesthetist and physician responsible for Queen Victoria's care, was criticized by colleagues for having administered it to the Queen without absolute scientific proof of its safety and efficacy. That being said, given the Queen's strong will, patient autonomy quickly overruled any paternalistic instinct to withhold chloroform as a cautionary measure. And so the use of anesthesia in obstetrics continued to grow and make its way across the Atlantic. In 1856, a Massachusetts physician admitted that once he had introduced chloroform in his practice, it was requested by women at each subsequent confinement (ibidem, p. 127).

The novel *Esther Waters*, written by English writer George Moore (1852-1933) in 1894, treats us to an account of obstetrical anesthesia as it was perceived in popular literature

in the late 1800's. *Esther Waters*, lauded as "a tale that marks a period", is set in working class England. In this novel, we most intimately encounter the medical world in the hospital where Esther is in labour. The majority of medical students and nurses in that setting were entirely unsympathetic to Esther's pain, and created an atmosphere of disrespect with their incessant chatter. The students openly regarded Esther's case as uninteresting. When however, the physician was called for, the tone of the scene changed:

He came running up the stairs; silence and scientific collectedness gathered round Esther, and after a brief examination he said, in a low whisper: I'm afraid this will not be as easy a case as one might have imagined. I shall administer chloroform. He placed a small wire case over her mouth and nose...and the darkness began to lighten; night passed into dawn; she could hear voices, and when her eyes opened the doctors and nurses were still standing round her [...] and then out of the silence there came a tiny cry.

"What's that?" Esther asked. "That's your baby."

(Moore, 1964, p. 125)

From his very entrance, the physician created an atmosphere of comfort that was only heightened by the use of chloroform. Minutes before, Esther had felt pain, as if "she was being torn asunder, that life was going from her" (ibidem). This was completely turned around by the administration of anaesthetic. The physician in this encounter exhibits tremendous command over the situation. Not only does he have the power to silence the crowd, but he also wields the medicine that will alleviate Esther's pain. The nurses and students abused the power that they had over Esther by making her feel like nothing more than a teaching specimen. The physician, however, used his influence only as it was of benefit to the patient.

By the late 1800s, although the scientific case for obstetrical anesthesia had not yet been convincingly made, it was considered standard for obstetricians to develop the skill of chloroform anesthesia. From the patient's point of view, it had clear and undeniable benefits. Thus, despite reports of unexplained deaths by chloroform, women pushed for their right to take the risk, in view of the potential for pain relief. Anesthesia was no longer a "gift"; it was being recognized by women as their right.

Twilight Sleep and the Campaign for Obstetrical Anesthesia

Up until the discussion of obstetrical anesthesia, the fictional and autobiographical accounts discussed in this paper have reflected the ability of anesthesia to relieve pain and suffering, and have upheld the anesthetist in her/his role as a provider of care to a population in need of comfort. Anesthesia had been viewed as a "gift" until the advent of chloroform anesthesia, at which time the discourse surrounding anesthesia focused on the patient's rights to it, and the physician's duty to deliver. This sentiment continued to prevail in 1914, when the new German invention, of "twilight sleep", came into fashion. "Twilight sleep" was a combination of scopolamine and morphine, which produced very mild analgesia coupled with significant amnesia (Caton, 1999, p. 134). With this combination, women would still undergo painful labour, but remember nothing of it. The wealthy women who traveled to Freiburg, Germany, to give birth under the influence of "twilight sleep" approved of its effects. They returned home and set up "twilight sleep"

hospitals, and national associations advocating for its widespread availability in the United States. The popular press and groups of feminist elite, championed “twilight sleep” as part of the women’s right to “painless labour”. This put the medical community in a very difficult situation, because the popular press of the day, composed of patient accounts of painless labour, was in fact erroneous. The patients *did indeed* experience pain, and to observe a woman bearing her child under the influence of “twilight sleep” was to observe a woman screaming and thrashing violently. Patients themselves, however, had no recollection of this, and so looked upon “twilight sleep” as a tranquil wonder.

In 1927, designer and novelist Edith Wharton (1862-1937) published a satire on high society women of the era, in which she describes a woman’s perception of “twilight sleep”:

“Of course there ought to be no pain, “nothing but Beauty”, it ought to be one of the loveliest, most poetic things in the world to have a baby,” Mrs. Manford declared.

Physicians, however, confronted this romanticized view with skepticism, citing the depressing effects of these drugs on labour and neonatal respiration. Further, the general medical opinion was that the anesthetic effect of the drug combination was less than acceptable to begin with. Eventually the campaign for “twilight sleep” came to an end - an end hastened by the unfortunate post-partum demise of the child of an influential advocate for “twilight sleep”.

(Wharton, 1927, p. 14).

The lack of dialogue between the body of physicians, and the patient body during the campaign for “twilight sleep” was remarkable. In his 1999 text looking at pain and childbirth in a medical and social context, Donald Caton very eloquently summed up the problem:

In retrospect, the confrontation between the American public and physicians in 1914 had little chance for resolution. American women were motivated by a social philosophy that placed a high value on personal comfort and by an extraordinary faith that science could conquer pain. Physicians, on the other hand, ignored the social issues and dealt with the problem as one to be resolved by experimentation and the collection of clinical data. Physicians never addressed the social issues, and patients discounted many of the medical problems.

(Caton, 1999, p. 151)

To my knowledge, this is the first time in the history of modern surgical anesthesia that the dawn of a new method of anesthesia proved detrimental to the general population’s perception of the physicians who attended them. It was also the first time in a field founded on reports of patient’s subjective experience of painlessness, that the patient’s subjective reports were wholly inconsistent with what the medical community knew to be true. Thus the tale of “twilight sleep” is a cautionary one whose lesson resounds with us today. The message? If popular press is not informed with exact science; it has the power to misinform, and even to disrupt the dialogue between the lay and medical communities.

Doctors, Patients and Anesthetics – A Progression in Narrative

Writers of literary works have provided us with incredibly valuable perspectives on the doctor-patient relationship. We have already looked at surgery from the perspective of Herman Melville (1819-1891) – a writer and adventurer whose story was set in 1843 – three years before the advent of ether anesthesia. Over fifty years later, Sir Frederick Treves (1853-1923) – surgeon to King Edward VII (1848-1910) and respected lecturer and writer produced the short story “Idol with Hands of Clay”. Both works are cautionary tales of the dangers of overconfidence in surgery. However, a comparison of *White Jacket* to “Idol with Hands of Clay” reveals that the anesthesia available in the 1900’s transformed the experience of surgery for both the patient and the surgeon. In “Idol with Hands of Clay”, surgical anesthesia gave the surgeon silence to contemplate, to have fear, and to notice the frailty of the patient. Like the physician Magendie in France, “Idol with Hands of Clay” emphasizes vulnerability of the anaesthetized patient. It is the story of a young surgeon whose adoring wife has appendicitis and requires an operation. Although the general practitioner had not yet undertaken a major surgery, his wife insisted that he was the only one she trusted to perform the operation. The husband, seized by vanity and pride, was determined to overcome his fear and do a magnificent job. Just before the operation commenced, the young bride tells him “[...] I know with you that I am safe and that you will make me well, but be sure you are by my side when I awake, for I want to see you as I open my eyes. Wonderful boy” (Gordon, 1996, p. 54). The story then details the operation following the administration of anaesthetic to the patient. Interestingly, the narrative focuses on the emotions of the surgeon himself, who is completely thrown by the fragility of his wife. – “The young doctor told me that as he cut with his knife into that beautiful white skin and saw the blood well up behind it a lump rose in his throat and he felt that he must give up the venture” (ibidem). The husband, however, persisted vainly, in an attempt to impress the other doctor assisting in the operation. When the operation began to get confusing, the surgeon was left alone with his own insecurity, and he “looked appealingly to his wife’s masked face for some sign of her tender comfort, but she was more than dumb” (ibidem, p. 55). The young surgeon was left with the memory of his wife’s last kind word, and with the responsibility for her lifeless body.

According to Roselyne Rey’s *History of Pain*, the silence that Treves wrote of was a concern for early surgeons. In fact, this sentiment contributed to the lack of comfort that physicians in the French academies felt as ether anesthetic was being introduced into practice. According to Rey, a main hindrance to the acceptance of anesthesia really concerned the idea of using ether for surgical operations and of fearing to open an apparently lifeless body in which reactions were no longer there to guide the surgeon in his work. For the first to try it, surgical anesthesia left the surgeon face to face with himself in a hitherto unknown silence. For some, this was no less agonizing than the necessity of persevering regardless of the pain and cries of the person being operated on (Rey, 1993, p. 172).

It was already noted in section two that Harvey Cushing had begun his career in medicine as an assistant anesthetist. This is also true of renounced American physician Charles Mayo (1865-1939), who at a very young age, served as the “anesthetist”, in his father’s practice. His job, as it was described in the short story “Charlie Mayo: Anesthetist at 12” was to watch the patient closely, and maintain the delicate balance of ether anesthetic that would ensure comfort:

Watching for his father's signals, Charlie dipped ether slowly until a shake of the head checked him. When the doctor was too preoccupied with the operation to give instructions, Charlie eyed the patient for his cue. As soon as the farmer's wife stopped struggling he shut off the anesthetic. He let it drip again when she showed signs of consciousness.

(Hoke, 1963, p. 73)

By being given responsibility as anesthetist, Charles learned in practice the sort of patient-centered approach that would a century later be the first principle taught to medical students before they enter into their first patient encounters. As physician-poet William Carlos Williams (1883-1863) said "We should look more; we should listen more. Patients are our teachers" (Furst, 1998, p. 230).

In 1894, Sir Arthur Conan Doyle (1859-1930) published his seventeen-story collection, *Round the Red Lamp*, which featured several highly entertaining stories of drama in the operating room. In the beginning of the story "The Surgeon Talks", the anesthetist, the surgeon, and the surgical assist prepare for an evening experimental surgery. Each assumes roles comparable to what would be expected in a modern operating room:

He lay down, and the chloroform towel was placed over his face, while Walker threaded his needles in the candle light. The chloroformist stood at the head of the table, and McNamara was stationed at the side to control the patient. The rest of us stood by to assist.

(Doyle and Rodin et al., 1992, p. 294)

As the surgery trial progressed, however, there was a mix up between the patient and surgery assistant, such that the anesthesia was forced on the latter during a power outage, the operation performed, and the intended patient found asleep under the table when the lights came back on. An unlikely story, but in 1894, an interesting one for its plot; whose punch line was based solely on the availability of chloroform anesthesia. The plot revolved around surgical anesthesia, which facilitated experimental surgery by generally increasing patient compliance and the number of operations performed.

Continuing the chronology of anesthesia as it is portrayed in short narrative, we now move to the setting of World War II. and the short story "*The Enemy*" by the American Nobel Prize Laureate Pearl Sydenstricker Buck (1892-1973). In this story, a wounded American soldier stumbles upon the house of a Japanese physician and his wife. Where there is no trained anesthetist at the physician's disposal, the wife rises to the challenge and administers anesthetic on a cotton ball while her husband operates. Both the physician and his wife know that the soldier is an enemy, yet they decide to attempt to save him. Reminiscent of Sir Frederick Treves' (1853-1923) "*Idol with the Hands of Clay*" set twenty years earlier, the narrative focuses on the fragility of the patient while under anesthetic. Having been given the role of anesthetist during emergency surgery, the wife gains an understanding of the patient that transcends cultural and national barriers:

She crouched close to the sleeping face of the young American. It was a piteously thin face. ...she wondered if the stories they heard sometime of the sufferings of prisoners were true. ...she hoped anxiously that this young man had not been tortured.

(Hoke, 1963, p. 55)

Taken together, the narratives presented in this section reflects a new atmosphere in the operating room - one where the surgeon can now operate in silence, and where the anesthetist has a crucial and defined role in the surgical process. One also cannot help but notice that the narratives depicting surgery under anesthetic are extremely patient focused, and allow the physician, (and thus the reader), time to consider and react to the patient. In the fiction that I have come across detailing invasive procedures done under anesthetic, the time elapsed during the actual procedure itself is harnessed for character development; it is used to reveal the internal monologue of the physician observer, or to expose the character of the patient through the eyes of the physician. The attentiveness to the development of characters and their relationships could reflect the patient centered approach, and the focus on patient's rights that came about during the early days of anesthesia.

Conclusion

It was renowned physician Oliver Sacks (b. 1933) who postulated that "to restore the human subject at the center – the suffering, afflicted, fighting, human subject – we must deepen a case history to a narrative or a tale (Furst, 1998, p. 7). These narratives are not created to exclude the scientific, but rather, to complement it in order to "deepen" the case history. In a similar vein Furst suggested that an emotional consideration toward the patient; "empathy, does not come in the way of scientific precision, but rather, generates it." Looking back on the development of anesthesia, we do in fact see numerous examples of this. It was his consideration for the sufferings of patients that drove James Simpson to fight for the use of chloroform as anesthetic. As more physicians used chloroform in obstetrics, practitioner-scientists such as John Snow could collect and publish scientific data on the properties and utility of chloroform anesthetic. Empathy, however, was not the only motivation driving physicians to perfect methods of obstetrical analgesia. Public pressure and women's advocacy groups were also responsible for its speedy development and widespread use. And unfortunately, certain methods of obstetrical analgesia were proved detrimental to health only after women's advocacy groups had pushed for and implemented their use *without* adequate scientific evidence to back its use.

Today, we acknowledge that a proper treatment of any patient necessitates attention to the resolution of pain. And although we speak of anesthesia and improvements in patient-doctor relationship, it is important to remember that, practically, once a patient is under anesthetic, conscious communication between patient and doctor is eliminated. Thus, a trust relationship between anesthetist and patient must be established before surgery, and the anesthetist has a special responsibility to advocate for the patient while the patient is unresponsive and in his care. During the initial consultation, I have heard the anesthetist introduced to a child undergoing surgery as "the one who will be taking care of you during your surgery." Similarly, in the first documented use of ether, in 1846, Morton asked the patient "Are you afraid" to which the patient replied "No. I trust that you will do what you say you will" (Ellis, 1984, p. 54). That patients trust the anesthetist to take care of them while they are unconscious, means that a mutual understanding of reciprocal good faith exists between the two parties. Only then is the anesthetist empowered with the dual responsibility of "comforter", and then, of "guardian" – the role that was established for them a century ago by early innovators in the field of anesthesia.

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