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## **MORE RELEVANT FACTS AND ANALYSES ON HALSTED'S ADDICTION AND ITS CONSEQUENCES**

### **When did it become clear that Halsted was still an addict?**

The answer is unclear. During his lifetime, most of Halsted's colleagues and trainees believed he was no longer addicted. The first definitive evidence that he had not overcome the habit came from William Osler's undated "The inner history of the Johns Hopkins Hospital," which was handwritten by Osler. It was bequeathed to the Osler Library at McGill University after the death of both Osler and his wife, with instructions that it should not be opened until the Hospital's 100<sup>th</sup> anniversary in 1989. It was opened earlier and published in 1969.<sup>1,2</sup> In this, Osler described his recollections of the founding of the hospital and provided unknown information about those involved. Related to Halsted, Osler tells the story of Halsted's courtship with his scrub nurse and then unloaded this bombshell:

The proneness to seclusion, the slight peculiarities, amounting to eccentricities at times ...were the only outward traces of the daily battle through which this brave fellow lived for years. When we recommended him as full surgeon to the Hospital in 1890, I believed, and Welch did too, that he was no longer addicted to morphia. He had worked so well and so energetically that it did not seem possible that he could take the drug and do so much. About six months after the full position had been given I saw him in a severe chill, and this was the first intimation I had that he was still taking morphia. Subsequently, I had many talks about it and gained his full confidence. He had never been able to reduce the amount to less than three grains daily; on this he could do his work comfortably and maintain his excellent physical vigor... I do not think that anyone suspected him – not even Welch.<sup>1</sup>

The latter statement proved not to be true,<sup>3,4</sup> as Welch, the former dean of medicine at Hopkins, allegedly admitted the following while he was an inpatient at Johns Hopkins Hospital shortly before his death:

Although it has been widely reported that Halsted conquered his addiction, this was not entirely true. As long as he lived he would occasionally have a relapse and go back on the drug. He would always go out of town for this and when he returned he would come to me, very contrite and apologetic, to confess. He had an idea that I could tell what he had done. I couldn't, but I let him go on thinking so because I felt it was good for him to have someone to talk it over with.<sup>3</sup>

Finally, even one of Halsted's residents George Heuer, late in his career speculated that he never conquered his addiction; this carefully worded analysis is contained in a 105 page long paper entitled "Dr. Halsted," which Heuer wrote in 1952, long before Osler's *Inner History* paper was published. In this paper, he does not state this outright but rather extensively quotes "the remarks of a well-known surgeon,"<sup>5</sup> who knew Halsted. The unnamed surgeon, who was at the time critiquing MacCallum's biography of Halsted,<sup>6</sup> said:

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The real truth of the matter is, he never conquered it. There are several proofs of this and perhaps MacCallum should have faced it, for he must have known it and should have published it in his book...<sup>5</sup>

Heuer then uses the unnamed surgeon to build a case laying out compelling evidence of continued addiction.

### **SPECULATIONS ON HALSTED'S CAREER HAD HE NOT BECOME AN ADDICT:**

Halsted's career would have been very different. John L Cameron, Hopkins Professor of Surgery, in his presidential address to the Southern Surgical Association in 1996 speculated:

He undoubtedly would have remained in New York City, his home, where he was considered the brightest and most innovative of surgeons. Socially he was prominent and enjoyed an active and rewarding life. He later described those years in New York as the happiest of his life. There would have been little reason to leave. Addiction to cocaine, however, changed that. Presumably physically shattered and humiliated by this addiction he was unable to control, he left his birthplace and home, New York City, to move to Baltimore for his rehabilitation. Leading a quiet scholarly life working in a research laboratory allowed him to rebuild his life and image in such a way that he could be productive but, at the same time, develop a lifestyle and demeanor that would allow him to hide his secret from all but two or three of his closest colleagues and friends. Gradually, as he became confident and secure in his new role, he resumed his clinical activities, but at a much reduced pace.<sup>7</sup>

Nunn describes how Halsted had just spent \$1000 preparing lectures for his bid to become Chair of Surgery at the College of Physicians and Surgeons.<sup>3</sup> However, as fallout from his rapid downward mobility because of his addiction, these lectures were never given. Had Halsted become Chair, he would not likely have moved to Hopkins and started his innovative residency training program, which eased his return to productive clinical practice.

In Baltimore, Halsted pushed the boundaries of academic surgery. He spent time doing surgical procedures on dogs to promote better surgical results on humans. He locked himself in his office at home every afternoon to think (and to carefully titrate his habit). Contemplative thought followed by innovative surgical research became his forte. According to Cameron:

His new lifestyle was private and reserved. This allowed him more time for his creative and innovative energies, resulting in a productivity almost certainly greater than had he remained in New York City, with his more clinically oriented, gregarious social behavior. It, therefore, could be argued that Halsted's immense academic and scholarly productivity was not despite his addiction, but in part because of it. Had he not developed his disability, it is unlikely he would have followed Welch to Baltimore and Hopkins. The chance to work with brilliant colleagues in a new hospital with the first research and graduate university in this country, with all of the opportunity for innovations and scholarly academic contributions, would have been lost.<sup>7</sup>

While we agree entirely with this analysis, Cameron fails to speculate about residency training. As we have shown, many aspects of Halsted's program were carefully designed to help him hide

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his addiction and simultaneously optimize care for his patients. Clearly, his time set aside for contemplation, which was only possible because of the design of his residency program, had a happy outcome for all.

Globally, it is likely the profession's transition from bold and brilliant to careful and physiological surgery would have been much slower. While there were other strong proponents for conservative surgery,<sup>8,9</sup> Halsted's gravitas as the Hopkins' Professor of Surgery was pivotal for this transition. It was a true paradigm shift in surgical thinking. Had Halsted not become addicted and moved to Baltimore, he might have finished his career in New York as a proponent of bold and brilliant surgery, rather than the primary proponent of careful physiological surgery. According to Alfred Blalock: "I think it is all to Dr Halsted's credit that he was able to overcome this habit, and it is probably very fortunate for American surgery that he acquired it."<sup>10</sup>

While all of the above is speculation, there is one certainty. Halsted would not have received his American Dental Association Award in 1922 for the discovery of local cocaine anesthesia.<sup>11</sup>

### **ONE FINAL TEST OF OUR HYPOTHESIS: COULD THE HALSTED RESIDENCY FUNCTION WITHOUT ITS SENIOR RESIDENT**

If part of the reason for the pyramidal design of the Halsted residency was to allow his clinical and educational programs to be handled by his senior resident so that Halsted could spend his time contemplating, it seems obvious that this individual must be essential. It appears, even with all of the redundancy within his program, Halsted recognized that his service could not function, even temporarily, without its top resident. Rutkow and Hempel, in a paper about exchanging residents between Hopkins and Germany (Breslau, which is now in SW Poland) in 1913-14, note that Halsted explained that he could not send resident George Heuer in the immediate future as he needed him to operate and teach.<sup>12</sup> Halsted clearly could not run his highly complex surgical service by himself. While it could be argued that an "even exchange" of top residents should not have been a problem, this would not really have been the case as, even if the German resident brought equivalent surgical skills, he would not have known the system at Hopkins, would have needed constant supervision, and certainly could not have full-filled the senior resident's "deflector" function, potentially increasing the probability of Halsted being exposed. Halsted needed to plan ahead and promote an assistant resident from within to the resident position before he could send Heuer to Germany.

### **Supplemental References:**

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**Appendix 1** to Wright JR Jr., Schachar NS. Necessity is the mother of invention: William Stewart Halsted's addiction and its influence on the development of residency training in North America. *Can J Surg* 2020.

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