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## The Imperfect Warrior: Disability and Surgery on the Medieval English Battlefield

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# The Imperfect Warrior: Disability and Surgery on the Medieval English Battlefield

## **Abstract**

*This paper questions the assumption that medieval European medicine was unsophisticated and ineffective, unable to aid injured or disabled warriors. Three instances from English history refute this: the case of King Richard III, who was an accomplished warrior despite having scoliosis; the fact that King Henry V was able to recover fully from a serious battle wound; and the existence of a common soldier from the Wars of the Roses who had a similar, successful recovery. Historical evidence and the work of modern scholars, like Tobias Capwell, point to many cases of successful battlefield surgeries and supportive technology. When fitted with specially tailored armour, a man with similar scoliosis to Richard III was trained in 15<sup>th</sup> century riding and fighting techniques. The surgeon John Bradmore gave a full account of the methods and tools he used to heal Henry V's facial injury caused by an arrow. Finally, historians and archaeologists studying a skull found at the site of the Battle of Towton were able to determine that the deceased had sustained a fractured jawbone, which was healed ten years prior to his death. The paper ends by asserting that given the evidence, medieval English fighters with physical disadvantages received effective care and assistance that allowed their careers to continue despite their setbacks. This offers insight into the quality of the medicine available to them and shows that committed patient care is not a modern phenomenon.*

## **Disciplines**

History

## **Keywords**

medieval, england, medieval england, medical history, disability, surgery, richard iii, henry v, john bradmore, wars of the roses, battle of towton

There is great debate about the quality of medieval medicine, both in academic and informal spheres. Some scholars are skeptical of its efficacy, doubting that medieval European medics could even prevent pain or infection.<sup>1</sup> Stereotypes abound in popular culture, found in sensationalist web pages such as “10 Excruciating Medical Treatments from the Middle Ages” whose authors describe medieval surgery as “crude and blunt.”<sup>2</sup> Medieval physicians themselves recorded some admittedly implausible remedies, for instance citing a powder of newts, lizards, and “those nasty beetles which are found in fens during summertime” as an analgesic for tooth extractions.<sup>3</sup> Similarly, medieval armour is characterised as being unwieldy and restrictive, more like a tank than anything designed for the human body. If this was true, then between the risk of a deadly infection and able-bodied opponents, a fighter with a battle injury or a physical anomaly would have had little chance of survival. However, the evidence proves otherwise. Injury and disability were not immediate death sentences for the medieval English warrior, nor did they always mark an end to their career. An injured soldier was more vulnerable to further harm, and an army of them was bound for defeat, therefore good medicine was vital to the survival of all.<sup>4</sup> It was a particular priority for kings, because of the established view that a king’s physical health was linked to the health of his kingdom. A king’s body was imbued with strength and radiance by God, and to be mutilated was to lose that power.<sup>5</sup> With efficacious medicine and custom-made armour, an injured or disabled fighter could enjoy years of martial success, especially if they were a monarch since they enjoyed the best care and equipment.

There are many extant proofs of medieval assistive technology, both from on and off the battlefield. Some manuscripts depict people using mobility aids, and there is archaeological proof of human remains with limb replacements, to name only two examples. A late 15<sup>th</sup> century edition of *Roman de la Rose* housed at the British Library shows an illustration of a woman walking with crutches.<sup>6</sup> In 2013, at the Hemmaberg, Austria, excavators found a 6<sup>th</sup> century Frankish skeleton whose left foot was missing just above the ankle.<sup>7</sup> Attached to the stump of his leg was an iron ring and the remains of a wooden foot, and atrophy of the lower leg suggested he would have worn the prosthesis for many years.<sup>8</sup> On the battlefield, walking aids like crutches would have been a clumsy and potentially hazardous hindrance, and utterly useless if one was on horseback. What, then, would have been available to a disabled English knight, or even more importantly a king? The answer is his very armour and saddle, the quintessential kit of a mounted warrior. The need to appear able-bodied was especially crucial to a warrior king, after all. His health was the health of

his kingdom and no soldier would be inspired to fight alongside a ruler they thought would topple at any moment.

One king whose physical condition has been the subject of much debate is Richard III. When his body was unearthed in a car park in Leicester in August 2012, the team at the dig found his skeleton, which had unusually slender bones and an extreme case of scoliosis. His crooked back was evidently not just a product of Tudor propaganda or Shakespearean vilification. This discovery raised questions about how such a severely affected man could have been a successful warrior. Before any practical experimentation was done, Dr. Tobias Capwell, Curator of Arms and Armour at the Wallace Collection in London, dispelled the myth of medieval plate armour as being “a very static, hugely strongly-built and heavy thing.” Rather, armourers made it to allow the wearer a full range of motion, no matter their physical idiosyncrasies.<sup>9</sup> At the time, there were two types of plate armour in use in England: English and Italian. Richard did not wear off-the-peg Italian armour such as the 168 complete Milanese suits which he ordered for his soldiers.<sup>10</sup> None would have fit him, and a king needed to stand out from the average knight or infantryman in something more polished and ornate to reflect his status. Kings hired their own personal armourers who would have known of their employer’s physical state and structured their work accordingly to make him look stronger and fitter. Armourers were no strangers to accommodating physical anomalies and they may have even built early prosthetic limbs.<sup>11</sup> Richard’s condition posed many challenges with which his armourer must have worked. Armour is built to facilitate symmetrical movement and Richard’s body was asymmetrical; for comfortable weight distribution, the lower cuirasse (the plate around the wearer’s torso) was fitted tight around the waist, and Richard did not have an ideal, horizontal waist. The right side of his ribcage was hollow and the left side was convex, requiring a great deal of space. That extra volume in the cuirasse would have accentuated a curve that the king preferred to keep hidden.<sup>12</sup>

With the help of the American armourer Robert McPhearson, Dr. Tobias Capwell developed a theoretical illustration of what Richard’s kit might have looked like, taking these specifications into consideration. They theorised many small adjustments to fool the viewer, minimising Richard’s visible imbalance. Extra room was needed on his right side, but not enough to make it obvious, meaning that side would have fit very snugly.<sup>13</sup> They also allowed for asymmetry around the neck and shoulders, which the large pauldrons (shoulder guards) would have hidden from view.<sup>14</sup> The medial ridge, a slightly raised vertical line that runs from the bever

(neck guard) down the front of the cuirass, was omitted, breaking up the symmetrical line of the armour and taking away the eye's ability to see the marked differences between the two sides of his body.<sup>15</sup> The scalloped faulds that protected his lower torso were drawn with wider scallops than normal, making it more difficult to see that his waist was uneven.<sup>16</sup> Finally, the tassets (thigh guards) were shortened, to make his legs look less disproportionately long compared to his torso.<sup>17</sup> When shown in comparison to a rendition of an average English nobleman's armour, it is striking to see how similar Richard's silhouette was. If indeed these are the changes that his armourer made, then only those closest to him would have known he had scoliosis. His scoliosis being particularly undetectable when he was in motion, fighting on horseback.

However, without a real physical substitute for Richard, it was impossible to bring these ideas out of the realm of pure theory. This posed a problem for the team of historians, archaeologists, and others who were trying to understand his life through his remains. They found an ideal body double in Dominic Smee, who shared Richard's age range, slender physique, and spinal curvature. The physiotherapist Claire Small put him through a series of tests to determine his range of motion and endurance, noting he was flexible but his reduced lung capacity weakened his stamina. This could be disastrous in battle for someone with his condition, because fighting in a medieval battle often went on for hours at a time.<sup>18</sup> It would have been exacerbated even more for King Richard because, at the time of his death, he had spinal arthritis and was infected with roundworm,<sup>19</sup> which causes asthmatic symptoms as well as nausea and vomiting.<sup>20</sup> Evidence for Richard's infirmity was increasing.

Swedish armourer Per Lillelund created a custom cuirasse from Dominic's measurements.<sup>21</sup> The customisations aligned with what Dr. Capwell hypothesised: there was extra volume on one side to allow enough room for his ribs, the armour had no medial ridge, and the fitted waist was not perfectly horizontal.<sup>22</sup> As befitting an image-conscious king, the asymmetries were hidden by the pauldrons and lower back plate. The armour and the high-backed medieval saddle both functioned like a back brace, stabilising Dominic and allowing him to lead a cavalry charge with ease. No doubt these assets must have been a godsend to Richard, who lived his entire life during a civil war. In the end, the desperate charge towards Henry Tudor at Bosworth claimed King Richard III's life after only a two-year reign, but it was overconfidence and the press of the enemy that defeated him in the end, not his disability.

Whereas Richard's wounds killed him instantly, other monarchs endured severe physical traumas and recovered. At the Battle of Shrewsbury in 1403, the future Henry V was shot in the right side of his face by an archer.<sup>23</sup> The surgeon John Bradmore treated him and wrote a full account of it, saying Prince Hal was "struck by an arrow next to his nose."<sup>24</sup> The shaft had been broken off, but the arrowhead was still lodged deep in his skull, where Henry's physicians had been unable to retrieve it. To treat the wound, Bradmore first had to enlarge it by inserting increasingly girthy elder-wood probes (purified with rose honey) into the hole until "I had the width and depth of the wound as I wished it."<sup>25</sup> Bradmore then used a pair of tongs to successfully remove the arrowhead. With the easiest part over, he then had to ensure that the wound did not become infected. He used white wine and a probe made from barley, flax fibres, flour, and honey to clean it, inserting a smaller probe each day for twenty days until the wound closed naturally.<sup>26</sup> Fearing that the prince might suffer seizures, Bradmore also put ointment on his neck to relax his muscles.<sup>27</sup> After many months spent convalescing, Prince Hal was left with only a scar, a testament to the fine skills of John Bradmore. The surgeon was rewarded handsomely for his services, being granted an annuity of ten marks until his death in 1412.<sup>28</sup>

Royalty were not the only ones to enjoy high-quality treatment—common soldiers could too. The Battle of Towton (1461), presents a particularly fascinating case. Fought amidst a snowstorm near a small Yorkshire village on Palm Sunday, it was not only the most deadly struggle during the Wars of the Roses, but also "probably the largest and bloodiest battle ever fought on English soil," claiming a reported 28 000 of the 50 000 soldiers who had been there.<sup>29</sup> These soldiers' fates went largely unknown until 1996, when builders at Towton Hall excavated foundations for an extension to the building and uncovered human skeletons.<sup>30</sup> Archaeologists from Bradford University identified it as a mass grave whose inhabitants had died brutal deaths, and carbon dating revealed the date of their death to be consistent with the time of the battle.<sup>31</sup> The men died of multiple vicious head wounds.<sup>32</sup> One set of remains quickly singled out as exceptional were those belonging to a man of about forty-five with extremely robust bones, known as Burial No. 16.<sup>33</sup> Surgeons had both been present to treat No. 16 and reliable enough that his injury did not halt his career.<sup>34</sup> He had recovered from a deep blade wound to the left side of his jaw, so forceful that it fractured his jaw and chin.<sup>35</sup> His wound, along with those of his fellows, had healed cleanly, tended to by unknown people of great skill.<sup>36</sup>

Medieval English battlefield surgeons learned their art from the many illustrated medical manuals in circulation at the time, which illustrated techniques adopted from Arabic scholarship.<sup>37</sup> There are detailed instructions on the repair of an injured jaw, beginning with sealing the laceration with beeswax, covering that with a piece of shoe leather, and then bandaging the head to make sure the dressings did not fall off.<sup>38</sup> Good medical care was not only the realm of royalty; common soldiers, the kind who would be thrown indiscriminately in a shallow grave, sometimes received it too. In the best of cases, it added another decade to their life.

In an age of complex prosthetic limbs, antibiotics, and tiny robots who can administer precise sutures to a grape, it is obvious that the field of medicine has come a long way since the 15<sup>th</sup> century. However, it is misguided to discredit past accomplishments and dismiss medieval medical practice as the stuff of clickbait or negatively biased scholarship. Studying medieval battlefield medicine and technology rectifies these assumptions. The bodily abnormalities of kings merited careful attention because of the expectation that a good ruler was strong and physically whole. The common man was also important enough to receive skilled care. Importantly, this reinforces the fact that caring for the vulnerable is not a modern concept but a human constant. The clever work of armourers and surgeons tells us that even in the bloody world of England's Middle Ages, a soldier with a broken skull or a king with a wounded face was not doomed to failure.

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- <sup>1</sup> Sophia C. Kaszuba, “Wounds in Medieval Mongol Warfare: Their Nature and Treatment in *The Secret History*, with some notes on Mongolian Military Medicine and Warfare,” *Mongolian Studies* 19, no. 1 (1996): 59, <https://www.jstor.org/stable/43193237>.
- <sup>2</sup> David Morton, “Ten Excruciating Medical Treatments from the Middle Ages,” *Oddee*, posted March 28, 2009, [https://www.oddee.com/item\\_96620.aspx](https://www.oddee.com/item_96620.aspx).
- <sup>3</sup> J. Pughe, *The Physicians of Myddfai* (Felinfach: Llanerch, 1993), 51.
- <sup>4</sup> Michael McVaugh, “Arnald of Villanova's Regimen Almarie (Regimen castra sequentium) and Medieval Military Medicine,” *Viator* 23, no. 1 (1992): 201–213.
- <sup>5</sup> Patricia Skinner, “Corpora and Cultural Transmission?: Political Uses of the body in Norman Texts 1050-1150,” in *People, Texts and Artefacts: Cultural Transmission in the Medieval Norman Worlds*, ed. David Bates, Edoardo D’Angelo and Elizabeth van Houts (London: Institute of Historical Research, School of Advances Study, University of London, 2017): 216-7, <https://www.jstor.org/stable/j.ctv512xf.18>.
- <sup>6</sup> Guillaume de Lorris and Jean de Meun, *Roman de La Rose* (Bruges, 1490-1500), f. 10v, <https://www.bl.uk/catalogues/illuminatedmanuscripts/record.asp?MSID=7465>.
- <sup>7</sup> Michaela Binder et al., “Prosthetics in antiquity – an early medieval wearer of a foot prosthesis (6<sup>th</sup> century AD) from Hemmaberg/Austria,” *International Journal of Palaeopathology* 12, no. 1 (March 2016): 29-40.
- <sup>8</sup> Binder et al. “Prosthetics in antiquity,” 33-34.
- <sup>9</sup> Dr. Tobias Capwell, “Richard III Society: Leicester Conference – Greyfriars Dig: Adapting King Richard III’s armour,” filmed 2 March 2013 at Leicester University, Leicester, England, video, 30: 23, <https://www.youtube.com/watch?v=8Sn9FOVHTjY&t=621s&list=PLPqIZiW-nJoyyxkE1OZCxVeuVMsnHQjrL&index=12>.
- <sup>10</sup> Capwell, “Greyfriars dig.”
- <sup>11</sup> Capwell, “Greyfriars dig.”
- <sup>12</sup> Capwell, “Greyfriars dig.”
- <sup>13</sup> Capwell, “Greyfriars dig.”
- <sup>14</sup> Capwell, “Greyfriars dig.”
- <sup>15</sup> Capwell, “Greyfriars dig.”
- <sup>16</sup> Capwell, “Greyfriars dig.”
- <sup>17</sup> Capwell, “Greyfriars dig.”
- <sup>18</sup> Channel 4, “The New Evidence,” filmed 2014 in England, video, 53: 00, [https://www.youtube.com/watch?v=0\\_CcB2-zUMk&t=975s](https://www.youtube.com/watch?v=0_CcB2-zUMk&t=975s).
- <sup>19</sup> Channel 4, “The New Evidence.”
- <sup>20</sup> Channel 4, “The New Evidence.”
- <sup>21</sup> Channel 4, “The New Evidence.”
- <sup>22</sup> Channel 4, “The New Evidence.”
- <sup>23</sup> “Prince Hal’s Head-Wound: Cause and Effect,” *Medievalists.net*, last modified May 20 2013, <http://www.medievalists.net/2013/05/prince-hals-head-wound-cause-and-effect/>
- <sup>24</sup> John Bradmore, *Medical miscellany, including Bradmore’s ‘Philomena’ in Middle English translation* (England, c.1446). <https://www.bl.uk/catalogues/illuminatedmanuscripts/record.asp?MSID=3544&CollID=8&NStart=1736>.
- <sup>25</sup> Bradmore, *Medical miscellany*.
- <sup>26</sup> Bradmore, *Medical miscellany*.
- <sup>27</sup> Bradmore, *Medical miscellany*.
- <sup>28</sup> Bradmore, *Medical miscellany*.
- <sup>29</sup> Christopher Gravett, *Towton 1461 – England’s Bloodiest Battle* (Oxford: Osprey Publishing, 2003), 120.
- <sup>30</sup> Timeline – World History Documentaries, “The Battle of Towton (Britain’s Bloodiest Battle Documentary) | Timeline,” filmed 2017 for Granada Media Group, England, video, 49:55, <https://www.youtube.com/watch?v=jvvhtIx2DRc&t=1557s>.
- <sup>31</sup> Timeline, “The Battle of Towton.”
- <sup>32</sup> Timeline, “The Battle of Towton.”
- <sup>33</sup> Timeline, “The Battle of Towton.”
- <sup>34</sup> Timeline, “The Battle of Towton.”
- <sup>35</sup> Timeline, “The Battle of Towton.”
- <sup>36</sup> Timeline, “The Battle of Towton.”
- <sup>37</sup> Timeline, “The Battle of Towton.”
- <sup>38</sup> Timeline, “The Battle of Towton.”

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