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Dissection: a fate worse than death

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Abstract

The teaching of Anatomy in medical schools has significantly declined, and doubts have been raised over whether or not doctors of today are fully equipped with anatomical knowledge required to practice safely. The history of anatomy teaching has changed enormously over centuries, and donating your body to medical science after death is very different today, compared with the body snatching and exhumations of the 18th and 19th centuries. With stories of public outcry, theft and outright murder, the history of anatomical education is a fascinating one. History has made an abundance of significant anatomical discoveries, is it not fundamental that medical students today are aware of the great lengths that our peers went to in order to obtain such pioneering discoveries?

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Introduction

Anatomy: [*noun*] the branch of science concerned with the bodily structure of humans, animals, and other living organisms, especially as revealed by dissection and the separation of parts.¹

Human anatomy has been at the foundation of medical science for millennia. The study of human physiology and pathological processes could not be fully understood without the fundamental anatomical knowledge gained from close examination of the body in its entirety. It seems incomprehensible then, that medical education in the UK today has moved away from the meticulous anatomy teaching of the past, and has seemingly neglected to replace it with anything near as rigorous. The understanding of human anatomy has only advanced over time, increasing the need for modern doctors to have a detailed and comprehensive knowledge of this core area of medicine. Statistics have shown that between 1995 and 2000, there was a “7-fold increase in claims associated with anatomical errors submitted to the Medical Defence Union”.² With the majority of these claims arising from both general and vascular surgery, and reported for “damage to underlying structures”² it begs the question, would this still be the case if anatomy teaching today was as focused and lengthy as that of the past?

The surgeons, students and anatomists of history fully understood the need for extensive anatomical training, and went to significant lengths to obtain it. The history of dissections and the use of cadavers is laced with desperation, criminality, public

outcry and even murder.

The Murder Act 1752

In the mid-sixteenth century, King Henry VIII (1491-1547) granted four hanged felons per year to the companies of Barbers and Surgeons, thereby highlighting the use of dissection as a punishment after death.³ Obtaining cadavers outside of these granted criminals was most certainly illegal, as the belief in a life after death, and therefore the necessity for a proper burial, was so integral to society that only the King could decide whose corpses were to be dissected. These dissections were carried out in public, cementing the universal opinion that dissection was an act of cruelty, designed both to humiliate and entertain. Just four cadavers per year for all the anatomists in the country was by no means adequate, and did nothing to address the issue of too few subjects for dissection.

For two hundred years Henry VIII’s grant continued, until the Murder Act of 1752 was introduced by Parliament, designed to condemn murderers to the fate of dissection.⁴ Surgeons and anatomists had made it clear countrywide that four subjects per year was wildly insufficient, and it had become obvious that cadavers were being procured through illegal means. William Hunter, an anatomist and self-proclaimed obstetrician, ran an anatomy school in London. Over 23 years he published his work on the ‘Gravid Uterus’, and dissected between 300-400 hundred female cadavers, in each stage of pregnancy.⁴ Considering the sheer amount of cadavers he used solely for

this project, let alone the fact that pregnant women were never hung, it shows that Hunter had a different arrangement for obtaining corpses for dissection; an arrangement that was most definitely illegal, but did not leave him short of supply.⁴

The Murder Act did nothing to restore the public's faith in anatomists. Dissection was now a "fate worse than death"³, reserved for the worst of criminals who had committed the most unspeakable crimes. It decreed that anyone who had committed murder would be hung the day after their sentencing, and their body handed over to the surgeons for dissection. The dissected bodies would then be displayed to the public as a warning, as well as denying the murderer a burial and a grave.⁴ Public dissection was now being used as an alternative for "gibbetting": painting a hanged felon in tar and hanging them from chains in an iron cage.

The Government was convinced that with the introduction of the Murder Act, there would be ample supply of cadavers for anatomical dissection, as well as discouraging the crime of murder. However, it soon came to light that the situation of the anatomists had not been much improved. Murder convictions were not commonplace, and anatomists and surgeons could only anticipate receiving roughly ten cadavers per year from the courts by this means.⁴ The private medical schools were even worse off - they had no 'legal' source of cadavers, as the hanged murderers were only given to the teaching hospitals.³ This drove anatomists, surgeons and students (who could not afford the expensive fees of a hospital education and so settled for a private school) to desperation, and the practice of bodysnatching began to advance.

The Resurrections

The illegal means of procuring bodies for dissection varied from bribing undertakers to swap a body for weights, to digging up a grave and physically removing the body from it. At the turn of the nineteenth century stealing corpses was commonplace amongst all medical schools. In Edinburgh, some students were known to pay their tuition fees in stolen corpses that they had retrieved when accompanying professional Resurrectionists.³

Most anatomists would not usually rob the graves of the dead for fear of being caught and their reputations ruined, so their preferred alternative was to pay someone else to find and obtain the corpses.

Many methods of body snatching and exhumation have been documented, and were seen to evolve over time as the Resurrectionists began to perfect their trade. Most Resurrectionists would work only in the winter; the evenings were darker and the bodies less pungent. They also became aware that supplying the Anatomy schools alone (not surgeons or students) not only guaranteed them payment, but also ensured that they would be assisted financially should they be arrested; a poor student could not make this bargain. Wooden shovels were used instead of metal ones, as these would make less noise. The Resurrectionists would quickly dig at the head of the coffin, and lever up the lid. The weight of the earth on the rest of the coffin would cause the lid to snap, and the corpse could be lifted out with ropes, and the grave neatly restored. They would have to be careful not to remove any objects or clothing from the grave; stealing a corpse's possessions was punishable by death, regardless of whether or not the body was taken, thus highlighting the public's

disgust at any form of grave robbing.³

The Resurrectionists much preferred to rob the graves of the poor, as the poor often tended to be buried in mass graves, enabling more corpses to be obtained for less effort.⁵ Religion even played a part in which graves were attempted. It had been recognized that those of Jewish faith tended to bury their dead earlier than other faiths, and so the Resurrectionists found that the corpses would be in the earlier stages of decomposition, and therefore more viable for dissection.³

In order to conceal the stolen corpses, the body snatchers would compress them in boxes, sew them into canvases, wrap them in sacks and even preserve them with salts and pickle.³ The emotional detachment that this displays is formidable, proving that corpses were just a commodity; a 'thing' of purely monetary value.

It was so common to attend graves in the daylight and find them robbed, that the churches and relatives of those buried developed methods to save the corpses from dissection.^{3,4} Small objects were often placed on the surface of the graves, and if these were disturbed then it was clear the grave had been tampered with.³ Much more dramatic approaches were to install mortsafes (iron cages over the graves) and watchtowers in the churchyards, where somebody could watch the graves through the night.⁴

The Resurrectionists attached a price to each stolen corpse, and this price varied depending on the quality, sex and age of the body. Anatomists would pay extortionate prices for the exact subject they wanted, and

the Resurrectionists knew this. The competition for unique or abnormal bodies became fierce.

The Irish giant

In Ireland in 1761 a man by the name Charles Byrne's was born. He grew extraordinarily tall, reaching a height of approximately 7 feet 7 inches; a colossal height for someone of that era. In 1780 he moved to London, in the hope of earning money as a "freak", but his health began to worsen, and he started to prepare for his coming death. It came to Byrnes's attention that he had become an object of desire among the anatomists, particularly John Hunter (brother of surgeon William Hunter), and he lived in fear of Hunter 'collecting' his body for dissection and display.⁶ This fear was so great, that he appealed to friends to ensure that when he died he would be placed in a lead coffin, the coffin sealed and buried at sea.⁶

When Byrne died, Hunter endeavoured to bribe Byrne's friends to swap the body with weights before throwing the coffin into the sea. It is unsure at what point Hunter intervened, but he bought Byrne's body for the princely sum of £500.³ In 1783, £500 was a fortune, equating to around £50,000 in 2010.⁷

There is much debate over the ethics of keeping Byrne's skeleton, currently on display in the Royal College of Surgeons Hunterian Museum, considering his dying wish to be buried at sea. In 1909 Harvey Cushing found an enlarged pituitary fossa in the Byrne's skull, and thus made the diagnosis of acromegaly⁶; without the skeleton perhaps this discovery would have

never been made, producing another dimension to the argument to have the skeleton removed from the museum, and buried according to Byrne's wishes.

Public outcry

When body snatching finally came to the public's attention, there was uproar. They called for the crime to be punishable only by death, but Parliament did not meet their demands. It was, however not the law which the Resurrectionists feared the most – the wrath of the public was so great that if anyone were to be caught exhuming a body, then they would have little choice but to flee and never return. By the 1820s the fee for corpses had risen significantly, in order to compensate for the colossal risk involved in bodysnatching.³

Dissection was regarded as final, something which “denied hope of the survival of identity after death.”³ It is no surprise then, that the public's reaction was one of hostility and disgust. It was definitely a far cry from the opinion of the public today, as a 2007 online poll found that, “94% of the public thought that doctors should have practical experience of real human anatomy”.²

Riots were an ordinary occurrence, particularly at public hangings, where there would often be a group of body snatchers (usually students) waiting to lay claim to the felon. The family or friends of the hung body would clash with the body snatchers, and a fight would ensue for custody of that body. Due to the public nature of the executions, the fight would soon transform into a raging riot, requiring the Sheriff to take the bodies from the gallows himself, and personally hand them over to whomever had the rights to them.³

Charles Darwin witnessed a riot in Cambridge in 1830 and wrote:

“Two body snatchers had been arrested, and whilst being taken to the prison had been torn from the constable by a crowd of the roughest men, who dragged them by their legs along a muddy and stony road. They were covered from head to foot with mud, and their faces were bleeding either from having been kicked or from the stones; they looked like corpses, but the crowd was so dense that I only got a few momentary glimpses of the wretched creatures...I forget the issue, except that the two men were got into the prison without being killed”.³

Another observer in Oxford, Quaker John Bellars, had observed many years before: “it is not easy for the students to get a body to dissect at Oxford, for the mob being so mutinous as to prevent their having one”.⁵

Burke and Hare

Burke and Hare are perhaps among the most notorious of villains, causing substantial public distress after it came to light that they had been murdering victims to sell for dissection.

Over a period of ten months in Edinburgh, 15 people were murdered by Burke and Hare, and all were sold to anatomist Dr Robert Knox, whose anatomy lectures drew in crowds of hundreds.⁴ The first body they sold to Knox had not actually been murdered, but died in the lodging house owned by Hare's wife.³ He owed Hare's wife money for his lodgings, and Burke and Hare

together decided to sell the corpse in order to repay this debt. Knox paid £7.10 for the body; more than enough to settle the debt³ (around £700 in 2010).⁷ Having made such an ample profit, Burke and Hare turned to killing their lodgers, overcome by monetary greed. They would first lure them in to the lodging house, intoxicate them with alcohol and smother them so they suffocated. They received £10 for the second body, and were astounded with the ease in which they could make such a fortune.⁴

It was not until Burke hid their fifteenth victim under a bed in the lodging house that the frightful pair were exposed. Two other lodgers discovered the body, and informed the authorities. They were reportedly offered £10 a week from Burke and Hare to remain silent about their discovery, but they declined this bribe.⁴

Burke was the only member of the murder conspiracy who was executed for his crimes. He was hung and his body given to the anatomists for dissection, as was the fate of all murderers under the Murder Act 1752.³ However, Hare and Knox did not get off lightly. They were regarded by the public with such malice, that they were in danger wherever they went, attacked by mobs and threatened with death. They had to flee Edinburgh, in the hope of continuing a life where they were not recognized; however news and gossip travelled fast, and it is likely that they carried the burdens of their crimes wherever they went for the rest of their lives.

The Anatomy Act 1832

The gruesome murders committed by Burke and Hare and the subsequent selling of the corpses perhaps could have been prevented if

Parliament had accepted that the Murder Act was not enough to supply the anatomists and medical schools with subjects for dissection. If dissection had never been used as a punishment then maybe the public would not have looked on it as such, and consented to donate their bodies to science after death.

In 1828, a Select Committee was created, to address the issue of supplying Medical Schools with cadavers.³ The Select Committee recognized that there was “paramount need” for anatomy to be studied using dissection, and they could see how important practising surgical skills on cadavers was, rather than using live subjects; “it was in the public’s interest to have technically able surgeons”.³

Among those on the Committee were Sir Astley Cooper (surgeon and anatomist), Robert Peel (the then Home Secretary) and Jeremy Bentham (the founder of modern Utilitarianism). Bentham had actually bequeathed his body to the anatomists:

“so that my last moments have for their comfort the assurance that how little service soever it may have been in my power to render to mankind during my lifetime, I shall at least be not altogether useless after my death”.³

After four years of gathering evidence and interviewing many Resurrectionists and anatomists, the Select Committee proposed the Anatomy Bill to Parliament, with the hope that the new Bill would completely abolish the need for bodysnatching, and would give the anatomy schools ample supply. The Bill, however, was not popular amongst most. It stated that unclaimed bodies of the workhouse poor belonged to the state, and

therefore would be given to the anatomists for dissection.³ There were so many poor people that died in workhouses, that the Select Committee believed that there would no longer be any need for exhumations, and the practice of bodysnatching would end forever.

However, the Select Committee only made their bill with finance in mind. Many poor people often did not claim bodies from the workhouses, as they could not afford the funeral costs.³ The Select Committee had neglected to factor any emotional attachments to corpses into their proposed bill. If you just focus on ‘financial claims’, then 82% of the workhouse dead were unclaimed. But if you take into account the number of dead whose friends or family attended the parish burial (of previously unclaimed bodies), then only 29% were ‘emotionally unclaimed.’³ For years the poor lived in fear of dying in the workhouse and being given to the anatomists.

Surgeon and anatomist G.J Guthrie criticized the report: “[the report] said everything it did not mean and meant everything it did not say”.³ This thought was echoed by many others, who believed that the report hid its real intentions. The Bill was passed by Parliament in 1832, and elements of the Anatomy Act still exist today. It has now been replaced by the Human Tissue Act 2004, which “regulates the removal, storage and use of human tissue”.⁸

Conclusion

Thankfully, bodysnatching is a thing of history, but we cannot ignore that great anatomical discoveries and extensive surgical knowledge have come from people who did not consent to their examination. It has come from criminals, stolen from both rich and poor, and donated without consent

from the poor in the workhouses.

History has taught us that consent is the mainstay when it comes to bequeathing a body to science. Searching for consent removes the fear from dissection, and without the fear more people are willing to donate their bodies for medical education. We need to ensure that their donations are not in vain, and use them to their full potential. Anatomists from centuries ago recognised the importance of an extensive anatomy education, and went on to get it by any means. We are fortunate enough to have the means, and therefore should do all we can to safeguard anatomy teaching today.

Key Learning Points

- Anatomy has throughout history always been at the heart of medical practice, but it seems that modern medicine has taken a step back from the extensive anatomy teaching of the past.
- Those wanting to study anatomy centuries ago had to find their own means of learning and research, and bodysnatching became a notorious practice.
- After it became clear that the price of a body had escalated to murder, parliament brought in the Anatomy Act of 1832, in the hope that, at last, there would be enough cadavers to satisfy the anatomists and students.
- The Anatomy Act 1832 has now been replaced with the Human Tissue Act 2004, but many core principles still remain.
- As medical students today we should ensure that we are grateful to those who donate their bodies for our learning, and that we endeavour to use them to their full potential, because without them our knowledge as future doctors will suffer.

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