

## Consented Autopsy-Never-Failing yet Ever Falling

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### Abstract

Consented autopsy has facilitated medical advances for five millennia and continues to deliver in modern 21st century medicine. Despite the extensive worldwide decline in consented autopsy over recent decades many studies demonstrate their continual importance in many domains of medicine including diagnostics, clinical correlation, pathogenesis research, education and benefits to the grieving family. The medical community must decide if this tried and tested method should be reinvigorated or left to fade into medical history.

**Keywords:** Autopsy; Post-mortem

### Introduction

Autopsy, derived from the Greek 'autos' and 'opsomeri' means 'to see for oneself, and originates from mummification using human dissection around 3000BC. Over five millennia it has enabled the study of human anatomy, physiology, and pathophysiology culminating in 21st century medicine. After such a rich and rewarding history, autopsy is on the brink of extinction.

During the 1980s, around 30% of adult inpatient deaths in the United Kingdom were followed with consented autopsy, yet by 2013 this figure had fallen to less than 1% [1]. The severity of this decline has led to the extinction of consented autopsy in 25% of hospitals in the UK [1]. Marked declines have been noted around the globe [1-4].

The decline in autopsy has been driven by the development of various misconceptions within the medical profession that began to develop in the latter half of the 20th century. Chief amongst these are the beliefs that modern diagnostic techniques are infallible and that attempts to obtain consent from believed families are rarely successful. In reality, the autopsy remains a valuable means for advancing modern medicine.

### Consented Autopsy in the 21st Century

Despite advances in radiology and diagnostics, misdiagnosis remains an unavoidable frequent recurrence with devastating consequences [5-7]. Recent studies highlight that 28% of deceased Intensive Care Patients had at least one misdiagnosis and that diagnostic errors, which would have influenced management and may have altered prognosis (type 1 diagnostic error), were found in 8% [6]. A similar situation is found in paediatric and neonatal medicine with around 20% of cases report diagnostic errors, 4.5% being type 1 error [8]. Clearly modern diagnostics are far from infallible; consented autopsy highlights common and serious misdiagnoses which enable clinical audit, case reports, mortality meetings and ultimately improvements in patient safety and care. The frequency of

misdiagnoses surrounding death is likely to have consequences on death certificates and therefore potentially skew mortality statistics and resource allocations.

Consented autopsy provides an invaluable platform for medical research. In recent years autopsy has aided in our understanding of pathological mechanisms in sepsis, Alzheimer's disease, depression and influenza [1,9-12]. These benefits continue to the present day where autopsy has been influential in our growing knowledge of Zika Virus and its association with microcephaly [13]. Furthermore, fetal consented autopsy has repeatedly aided in our understanding of congenital abnormalities [14,15], pre-natal pathological-radiological correlation [16] and genetic counselling [17].

The educational benefits of autopsy extend to undergraduate and postgraduate trainees. Declining consented autopsy has impacted medical education - few autopsies are now observed despite their ability to improve deductive clinical reasoning and problem solving skills amongst medical students-the ultimate effect will be felt by future patients [18]. Traditional hospital autopsy provides a platform for all medical professionals to improve clinicopathological correlation and clinical effectiveness of treatment by discussing pathology reports [19].

Many physicians believe that consent for autopsy is difficult to achieve and hence the decline is an unavoidable inevitability - in practice experienced physicians are routinely able to obtain consent for autopsy (in up to 90% of cases) when families are approached [20]. This presumptive lack of consent is not only limiting medical advances but also having a negative impact on families. Autopsy may act as a means of closure to a grieving family, it can add meaning to a death and may highlight undiagnosed communicable and hereditary disease [21,22].

### Conclusion

A combination of misconceptions surrounding consented autopsy has led to a worldwide decline in this hugely valuable technique to an extent that means autopsy is likely to become extinct within a generation, unless imminent action is taken. The media around the decline of the autopsy has been growing, the evidence has been

mounting and the situation is becoming ever more pressing - today is the time for physicians and policy makers to work together to reinstate the importance of consented autopsy in 21st century medicine and enable it to become a routinely used diagnostic tool to benefit the safety of our patients.

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