



Original Article

CONDUCTING MEDICOLEGAL AUTOPSIES ON COVID-19 POSITIVE CORPSES: ISSUES, RIGHTS, AND ETHICAL CONCERNS IN THE INDIAN CONTEXT

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ABSTRACT

The COVID-19 pandemic has fundamentally altered medicolegal autopsy practices in India, creating unprecedented challenges at the intersection of forensic medicine, public health, and human rights law. This review examines the multifaceted issues surrounding post-mortem examinations on COVID-19 positive bodies, focusing on the legal framework governing unnatural deaths, biosafety protocols, ethical considerations, and the rights of deceased persons and their families. The Indian Council of Medical Research (ICMR) guidelines recommended non-invasive autopsy techniques to minimize occupational exposure risks, while Section 174 of the Code of Criminal Procedure mandates comprehensive examination of unnatural deaths. This paper analyzes the tension between public health imperatives and medicolegal obligations, the Supreme Court's interventions regarding death certification and compensation, and the psychological impact on bereaved families. The study concludes that adaptive protocols, judicial clarity, and integrated mental health support systems are essential for managing medicolegal responsibilities during pandemic conditions while upholding constitutional guarantees of dignity under Article 21.

Keywords: COVID-19, medicolegal autopsy, forensic pathology, death certification, biosafety protocols, human rights, Article 21, deceased rights, compensation, India.

1. INTRODUCTION

The emergence of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) in December 2019 precipitated a global health crisis that fundamentally disrupted conventional medicolegal practices. In India, where the forensic system handles approximately several hundred thousand medicolegal cases annually, the pandemic introduced complex biosafety requirements, legal ambiguities, and ethical dilemmas that challenged established protocols.

Medicolegal autopsies serve a critical function in the criminal justice system, providing objective evidence regarding cause and manner of death in cases of suspected foul play, accidents, suicides, and unexplained fatalities. Under Indian law, these examinations are mandatory for all unnatural deaths, regardless of whether the deceased had concurrent medical conditions such as COVID-19 infection. This created an unprecedented situation where forensic pathologists were required to conduct comprehensive post-mortem examinations on potentially infectious bodies while maintaining evidentiary standards necessary for judicial proceedings.

The intersection of pandemic response measures with medicolegal obligations raised fundamental questions about the balance between occupational safety, investigative thoroughness, and the constitutional rights of deceased persons and their families. This paper systematically examines these challenges, analyzing the legal framework, biosafety protocols, ethical considerations, and practical solutions implemented during the pandemic period.

2. BACKGROUND AND LITERATURE REVIEW

2.1 The COVID-19 Pandemic in India

India experienced devastating waves of COVID-19 infection, with official statistics recording millions of cases and substantial mortality. The pandemic's impact extended beyond clinical medicine to affect medicolegal services, with a marked reduction in autopsy volume during lockdown periods (6.37%) compared to unlock phases (93.63%), reflecting systemic disruptions to forensic infrastructure.

2.2 Autopsy Practices During COVID-19

International and national health organizations issued restrictive guidelines regarding autopsies on COVID-19 positive bodies. The World Health Organization (WHO) and ICMR emphasized external examination and minimally invasive techniques, diverging from traditional comprehensive internal examination protocols. While extensive literature exists regarding pathological autopsies conducted for research purposes, documentation specifically addressing medicolegal autopsies in COVID-19 cases remains limited, with PubMed searches yielding minimal results.

2.3 Definition of COVID-19 Death

The WHO's initial definition classified COVID-19 death as mortality resulting from clinically compatible illness in probable or confirmed cases, unless an unrelated cause (such as trauma) was evident. This definition created controversy in India, with accusations of systematic under-reporting when deaths with COVID-19 as an incidental finding were excluded from official tallies. Subsequently, ICMR released comprehensive guidance aligned with ICD-10 mortality coding standards to ensure accurate recording of COVID-19 related deaths.

3. LEGAL FRAMEWORK

3.1 Code of Criminal Procedure Section 174

Section 174 of the Code of Criminal Procedure (CrPC), 1973, empowers investigating police officers to conduct inquests into suspicious and unnatural deaths. "Unnatural deaths" encompass suicides, homicides, accidents, occupational injuries, animal attacks, and sudden unexplained deaths without certified medical cause. This provision creates a mandatory obligation to perform medicolegal autopsy regardless of concurrent medical conditions, including COVID-19 infection.

3.2 Indian Penal Code Provisions

Section 297 of the Indian Penal Code (IPC) protects deceased persons from indignity, trespass on burial grounds, and disrespectful treatment of human remains. Section 404 addresses dishonest misappropriation of property belonging to deceased individuals. These provisions establish legal recognition of posthumous dignity rights, creating enforceable obligations on authorities handling deceased persons.

3.3 Constitutional Protections

Article 21 of the Constitution of India guarantees that "No person shall be deprived of his life or personal liberty except according to procedure established by law". Indian jurisprudence has consistently interpreted this fundamental right as extending to deceased persons, mandating dignified treatment of human remains and protecting families' rights to perform culturally appropriate funeral rituals.

3.4 Registration of Births and Deaths Act, 1969

This legislation requires issuance of Medical Certification of Cause of Death (MCCD) in Forms 4 and 4A for all deaths, creating the documentary foundation for death registration. The Act's interaction with COVID-19 deaths created administrative complexities regarding certification standards and grievance redressal mechanisms.

4. GUIDELINES AND PROTOCOLS

4.1 ICMR Guidelines for Medicolegal Autopsy

The Indian Council of Medical Research developed "Standard Guidelines for Medico-legal Autopsy in COVID-19 Deaths in India" in May 2020, establishing a framework for conducting forensic examinations while minimizing infection transmission risks. These guidelines included several key recommendations:

- **Non-invasive autopsy techniques:** The guidelines explicitly stated that invasive surgical procedures should be avoided to prevent occupational exposure to organ fluids and secretions
- **External examination protocol:** Comprehensive external examination, multiple photographs, and verbal autopsy (as defined by WHO) were emphasized as alternatives to traditional internal examination
- **Police authority to waive autopsy:** Investigating officers were empowered to waive medicolegal autopsy in cases where criminal activity was not suspected, even in deaths labeled as medicolegal cases
- **RT-PCR testing:** Mandatory pre-autopsy testing for SARS-CoV-2 was instituted, with bodies retained in mortuaries until test results were received

4.2 AIIMS Guidelines

The All India Institute of Medical Sciences (AIIMS) published "Standard Guidelines for Dignified Autopsy in COVID-19 Positive or Suspected Deaths," providing detailed technical specifications for autopsy room preparation, personal protective equipment (PPE), and body handling procedures.

4.3 Ministry of Health Guidelines

The Ministry of Health and Family Welfare issued comprehensive guidelines on dead body management, covering transportation, storage, identification, and disposal procedures for COVID-19 positive remains.

5. BIOSAFETY AND INFECTION CONTROL

5.1 Occupational Exposure Risks

Forensic pathologists, mortuary technicians, and support staff face significant occupational exposure risks during autopsy procedures due to aerosolization of viral particles, direct contact with infected tissues, and potential sharps injuries. The ICMR acknowledged that even with highest-level precautions, invasive autopsy techniques expose personnel to dangerous health risks from organ fluids and secretions.

5.2 Personal Protective Equipment

Standard operating procedures mandated comprehensive PPE including N95 respirators or powered air-purifying respirators (PAPR), double gloving, fluid-resistant gowns, face shields, and dedicated footwear. The guidelines required proper donning and doffing protocols with supervisory oversight to prevent contamination.

5.3 Autopsy Room Modifications

Recommendations included conducting autopsies in negative pressure rooms with adequate ventilation (minimum 12 air changes per hour), limiting personnel present during examination, and implementing strict zoning protocols separating clean and contaminated areas.

5.4 Sample Collection and Testing

Nasopharyngeal swabs for RT-PCR testing were collected prior to autopsy commencement. Additional samples for toxicological and histopathological examination required special handling and labeling protocols indicating COVID-19 positive status.

5.5 Body Handling and Disposal

COVID-19 positive bodies were placed in double-layered leak-proof plastic bags immediately after examination. Transportation to cremation or burial sites required law enforcement presence, with restrictions limiting family members to a maximum of five persons at disposal sites.

6. ETHICAL AND HUMAN RIGHTS CONSIDERATIONS

6.1 Dignity of Deceased Persons

The principle of posthumous dignity, derived from Article 21 constitutional guarantees, requires respectful treatment of human remains regardless of disease status. The National Human Rights Commission (NHRC) investigated complaints regarding floating bodies in the Ganges River during the pandemic's peak, issuing recommendations for specific legislation protecting deceased persons' rights.

6.2 Family Rights to Funeral Rituals

Article 25 of the Constitution protects freedom of religion, including the right to perform funeral rites according to faith traditions. During the pandemic, restrictions on crowd size, prohibition on transporting bodies to family residences, and mandatory sealed-bag protocols created tensions between public health requirements and religious obligations.

The NHRC recommended permitting religious rituals not requiring physical contact with remains, such as scripture recitation and holy water sprinkling. Courts, including the Madras High Court and Supreme Court, affirmed families' rights to conduct culturally appropriate funeral practices while adhering to reasonable public health measures.

6.3 Informed Consent Issues

Traditional medicolegal autopsy does not require family consent, as it is conducted under statutory authority for investigative purposes. However, the pandemic raised ethical questions about whether enhanced risks associated with COVID-19 positive autopsies warranted additional consent procedures or family notification protocols.

6.4 Transparency and Accountability

Ethical medical practice requires transparent communication regarding cause of death, autopsy findings, and certification procedures. Allegations of under-reporting COVID-19 deaths to minimize official mortality statistics undermined public trust and violated ethical principles of truthfulness.

7. DEATH CERTIFICATION ISSUES

7.1 Medical Certification of Cause of Death (MCCD)

The Registration of Births and Deaths Act, 1969, requires issuance of MCCD (Forms 4 and 4A) documenting cause of death according to ICD-10 coding standards. In medicolegal cases, the autopsy surgeon bears responsibility for completing this certification following post-mortem examination.

7.2 Classification Challenges

Deaths where COVID-19 was present but not causally related to mortality (such as trauma deaths in COVID-19 positive individuals) created classification ambiguities. The Ministry of Health guidelines clarified that deaths from poisoning, suicide, homicide, and accidents should not be classified as COVID-19 deaths even when infection was an accompanying condition.

7.3 Supreme Court Interventions

Following public interest litigation highlighting inconsistencies in death certification practices, the Supreme Court of India directed the central government to establish uniform standards and grievance redressal mechanisms. In September 2021, the Court modified earlier guidelines, directing that suicide deaths occurring within 30 days of COVID-19 diagnosis should be considered COVID-19 related deaths for compensation purposes.

7.4 District-Level Committees

Government guidelines mandated establishment of district-level committees to review death certificate disputes and issue "Official Documents for COVID-19 Death" in contested cases. These committees were required to dispose of applications within 30 days of submission, providing administrative remedy for families dissatisfied with initial certification.

8. COMPENSATION AND WELFARE MEASURES

8.1 National Disaster Management Authority Guidelines

The National Disaster Management Authority (NDMA) recommended ex-gratia compensation of ₹50,000 to families of COVID-19 victims under Section 12(iii) of the Disaster Management Act, 2005. This compensation scheme initially excluded deaths where COVID-19 was incidental rather than causal, creating inequities for families of unnatural death victims who were COVID-19 positive.

8.2 Inclusion of Suicide Deaths

Following Supreme Court directions in September 2021, the government amended guidelines to include suicide deaths occurring within 30 days of COVID-19 diagnosis in the compensation scheme. This modification recognized the pandemic's psychological impact and potential causal relationship between COVID-19 diagnosis and mental health deterioration leading to suicide.

8.3 Application Procedures

Families seeking compensation were required to submit applications to district collectors, providing death certificates or official COVID-19 death documents as supporting evidence. Grievance redressal mechanisms were established to address disputes regarding compensation eligibility.

8.4 State-Level Variations

Individual states implemented additional compensation schemes beyond central government provisions, creating geographic disparities in financial support available to bereaved families.

9. PSYCHOLOGICAL IMPACT ON FAMILIES

9.1 Complicated Grief in Medicolegal Cases

Research demonstrates that families experiencing sudden, violent, or unexpected deaths exhibit prolonged grief reactions, elevated rates of depression and anxiety, and increased risk of post-traumatic stress disorder compared to families experiencing anticipated deaths. Medicolegal autopsy requirements compound this trauma by delaying funeral arrangements, limiting family access to deceased persons, and introducing criminal justice system involvement.

9.2 COVID-19 Specific Stressors

The pandemic introduced additional stressors including: restrictions on hospital visitation preventing families from being present at time of death, inability to view remains due to sealed-bag protocols, limitations on funeral attendance, fear of infection transmission, social stigmatization associated with COVID-19 diagnosis, and prolonged uncertainty regarding death certification and compensation.

9.3 Mental Health Consequences

Studies examining the psychological impact of COVID-19 on bereaved families have documented high prevalence of anxiety, depression, insomnia, and somatic symptoms. The compounding effects of sudden death, autopsy procedures, and pandemic-related restrictions create particularly severe mental health risks requiring targeted interventions.

9.4 Need for Psychosocial Support

Mental health counseling and active management are essential for families experiencing complicated grief following medicolegal autopsy in COVID-19 cases. The paper's author emphasizes that family mental health must be prioritized, with counseling facilities provided at the earliest opportunity.

10. CHALLENGES AND RECOMMENDATIONS

10.1 Identified Challenges

Infrastructure Limitations: Many district-level mortuaries lack negative pressure rooms, adequate ventilation systems, and sufficient PPE supplies to safely conduct autopsies on COVID-19 positive bodies.

Guideline Compliance: Variations in guideline interpretation and implementation across jurisdictions created inconsistencies in autopsy practices, death certification, and family rights protection.

Forensic Evidence Quality: Non-invasive autopsy techniques, while reducing infection risks, may compromise forensic evidence collection necessary for criminal investigations.

Contact Tracing Gaps: Family members of COVID-19 positive deceased persons underwent inconsistent testing and quarantine protocols, potentially contributing to community transmission.

Documentation Delays: Prolonged intervals for RT-PCR test results caused significant delays in body release, autopsy performance, and death certification.

Training Deficits: Forensic personnel required rapid training in enhanced biosafety protocols, PPE usage, and modified autopsy techniques.

10.2 Recommendations

Infrastructure Development: Invest in upgrading mortuary facilities with appropriate ventilation, negative pressure capabilities, and biosafety equipment to handle infectious disease cases.

Standardized Protocols: Implement uniform national standards for medicolegal autopsy in infectious disease cases, ensuring consistent practices across states and territories.

Integrated Contact Tracing: Establish mandatory protocols requiring immediate notification of public health authorities when medicolegal cases test positive for infectious diseases, triggering contact tracing and testing of family members.

Mental Health Support: Develop systematic psychosocial support programs for bereaved families, with particular emphasis on cases involving sudden death, medicolegal investigation, and infectious disease.

Legal Clarity: Enact specific legislation comprehensively protecting deceased persons' rights, as recommended by the National Human Rights Commission.

Technology Integration: Explore virtual autopsy (virtopsy) techniques including computed tomography and magnetic resonance imaging as supplementary or alternative methods for forensic examination, potentially reducing infection exposure while maintaining evidence quality.

Capacity Building: Implement ongoing training programs for forensic professionals addressing biosafety, infectious disease protocols, and ethical considerations in pandemic conditions.

Transparent Communication: Establish clear communication channels with families regarding autopsy procedures, expected timelines, death certification processes, and available support services.

CONCLUSION

The COVID-19 pandemic exposed critical vulnerabilities in India's medicolegal autopsy system while simultaneously highlighting the resilience and adaptability of forensic professionals navigating unprecedented challenges. The tension between public health imperatives mandating infection control measures and legal obligations requiring comprehensive forensic examination necessitated innovative approaches balancing occupational safety, investigative thoroughness, and human rights protection.

The ICMR's guidelines recommending non-invasive autopsy techniques represented a pragmatic response to immediate biosafety concerns but raised questions about long-term implications for forensic evidence quality in criminal investigations. Judicial interventions by the Supreme Court of India clarified death certification standards, established

grievance redressal mechanisms, and expanded compensation eligibility, demonstrating the judiciary's vital role in protecting constitutional rights during public health emergencies.

The pandemic underscored that deceased persons and their families possess enforceable dignity rights derived from Article 21 constitutional guarantees, requiring systemic mechanisms to ensure these rights are protected even under extraordinary circumstances. The psychological trauma experienced by families facing sudden death, autopsy requirements, and pandemic-related restrictions demands integrated mental health support systems as a standard component of medicolegal services.

Moving forward, India's forensic infrastructure requires substantial investment in biosafety-enhanced facilities, standardized protocols for infectious disease cases, systematic contact tracing integration, and comprehensive family support services. The lessons learned during COVID-19 pandemic provide a foundation for developing adaptive, ethical, and legally sound medicolegal practices capable of responding to future public health emergencies while upholding fundamental human rights.

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