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Forensic and Medico-Legal Aspects of Sodomy: Forensic Evidence and Case Documentation — A Pediatric Case Study

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ABSTRACT

Sodomy allegations involving children require structured medico-legal documentation, timely evidence recovery, and strict chain-of-custody handling to support legal adjudication. This descriptive medico-legal forensic case study reports the documentation pathway, specimen collection, and evidence handling in an alleged case of anal/oral sexual assault involving an eight-year-old male child in Punjab, Pakistan. The medico-legal examination was conducted approximately two days after the alleged incident. A localized tear mark at the 12 o'clock position with marked hyperemia was documented, while other injuries (bruises, abrasions, bleeding, bite marks) and visible seminal staining were absent. Evidence collection included nail swabs and buccal swabs during crime scene processing and oral and anal swabs (external, middle, internal) during medico-legal examination. Evidence integrity was maintained through sealed packaging, documented handover to the investigating officer, and submission to the Punjab Forensic Science Agency (PFSA), where Evidence Receiving Unit (ERU) procedures included seal verification, registration, and coding prior to laboratory processing. The case progressed through legal channels under relevant provisions of the Pakistan Penal Code. Key challenges included delayed examination potentially reducing biological evidence yield, minimal physical injury despite allegation, and the need for pediatric trauma-informed protocols. The case demonstrates that absence of extensive anorectal injury does not negate assault allegations and underscores the importance of comprehensive evidence collection, multidisciplinary coordination, standardized pediatric protocols, and digital evidence tracking systems.

Keywords
medico-legal examination; forensic evidence; chain of custody; pediatric sexual assault; anal injury; PFSA

INTRODUCTION

Sodomy, a term historically derived from religious and legal discourse, has long been used in many jurisdictions to describe specific non-procreative sexual acts, most commonly anal penetration, and has remained embedded in medico-legal and criminal justice terminology despite evolving scientific and human-rights frameworks (1-6). In contemporary forensic practice, however, the priority is not moral classification but the structured documentation of alleged anal/oral sexual assault, the identification of injuries where present, and the timely recovery of biological and trace evidence that may support legal adjudication (7-13).

From a forensic standpoint, anal and oral sexual assault cases present distinctive challenges because physical findings may be absent or subtle, biological evidence is fragile and time-dependent, and delayed reporting is common due to fear, stigma, and psychosocial barriers (7,14-16,22). Available medico-legal analyses indicate that a substantial proportion of victims may not demonstrate obvious anorectal injury on examination, emphasizing that negative or minimal findings do not exclude penetrative assault and should not undermine victim testimony when interpreted within an evidence-based framework (16). Moreover, delayed examination reduces the likelihood of detecting semen, epithelial cells, and other DNA-bearing material, making systematic evidence collection, appropriate packaging, and an unbroken chain of custody essential to preserve evidentiary value and legal admissibility (22,23). These challenges are amplified in pediatric victims, where anatomical elasticity, communication limitations, and heightened psychological vulnerability necessitate specialized, child-sensitive protocols to minimize retraumatization while ensuring complete medico-legal documentation (21,23). Accordingly, the present study aims to describe the medico-legal documentation process, forensic evidence collection, and evidence handling procedures in an alleged sodomy case involving a minor, using a single-case medico-legal forensic case study to highlight practical challenges and best-practice considerations relevant to clinicians, investigators, and forensic laboratories (22,23).

METHODS

This study was conducted as a descriptive medico-legal forensic case study (case report) documenting medico-legal examination findings, forensic evidence collection, evidence preservation, and subsequent legal processing in an alleged sodomy case involving a minor. The design was selected

to provide a structured account of clinical and investigative procedures, emphasizing evidentiary documentation and chain-of-custody integrity in accordance with accepted forensic investigation principles (22,23).

The case was managed within a coordinated medico-legal and criminal justice framework involving a tehsil-level public-sector hospital providing medico-legal services, the local police station responsible for investigation and case registration, and the Punjab Forensic Science Agency (PFSA), Lahore, responsible for laboratory processing and reporting. Data sources included officially generated medico-legal and investigative records, specifically: the medico-legal examination certificate (MLC), the First Information Report (FIR) and police investigation documentation, recovery and dispatch memos for evidence transfer, chain-of-custody documentation, PFSA Evidence Receiving Unit (ERU) logs and departmental processing records, and available court proceedings or judgment documentation. These records were analyzed to extract a detailed timeline of events, examination findings, specimens collected, evidence handling procedures, and the procedural pathway from clinical documentation to laboratory submission and legal proceedings (22,23).

A standardized medico-legal examination protocol was followed upon presentation of the child victim to the medico-legal facility. Guardian consent was obtained prior to examination, in accordance with medico-legal requirements for minors. A structured history was recorded from the accompanying guardian and available police representatives, focusing on incident timing, alleged route(s) of assault (anal/oral), clothing change, hygiene practices following the incident (defecation, urination, bathing), and any associated symptoms. The physical examination included a general assessment and a focused local examination of relevant anatomical regions. Injury documentation was performed using the clock-face method, reporting the anatomical location of any perianal or mucosal injury by reference to position (e.g., 12 o'clock), along with detailed description of injury type, associated erythema/hyperemia, bruising, abrasions, swelling, bleeding, and the presence or absence of seminal staining. Findings were recorded in the medico-legal certificate as both positive and negative observations, consistent with medico-legal documentation requirements and the need to minimize interpretive ambiguity during judicial review (22,23).

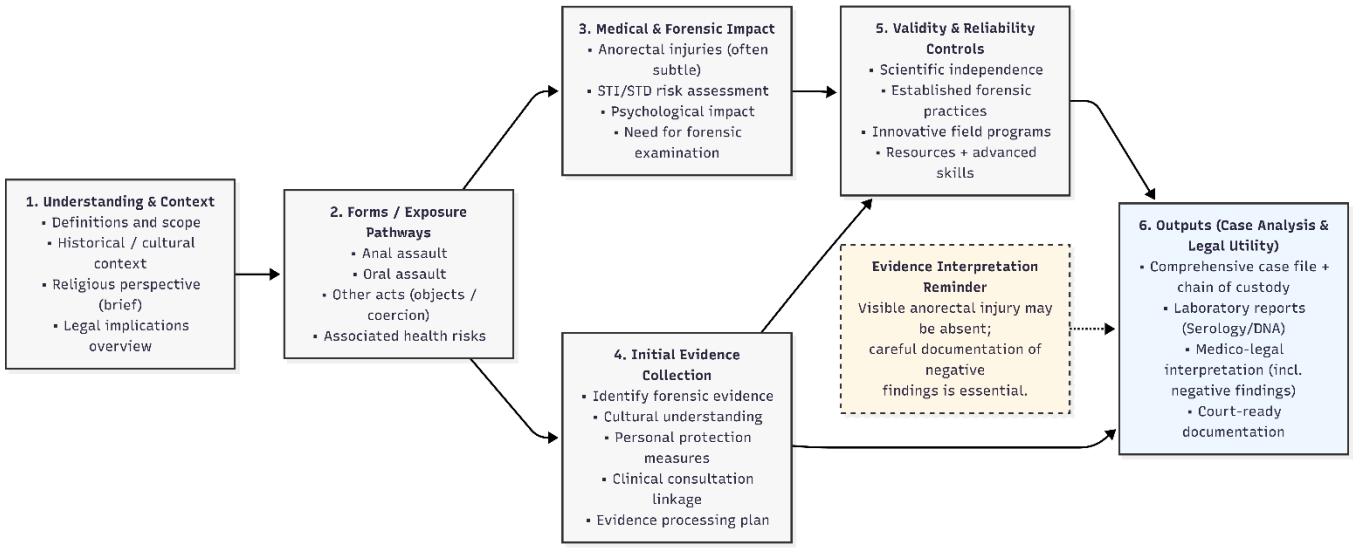

Figure 1 Conceptual workflow for medico-legal and forensic assessment of sexual assault exposures. The diagram outlines a stepwise pathway from understanding contextual/legal foundations and exposure routes (anal/oral assault and coercion) to medical–forensic impact assessment, structured initial evidence collection, validity/reliability controls, and final case outputs (chain of custody, laboratory reports, medico-legal interpretation, and court-ready documentation), emphasizing careful documentation even when anorectal injury is absent.

Evidence collection was conducted in accordance with medico-legal and forensic evidence preservation principles to optimize the recovery of biological material for serology and DNA analysis. Specimens collected included swabs from relevant sites based on case history (e.g., buccal/oral swabs and anal/perianal swabs). Where indicated, external, middle, and internal swabs were obtained to maximize detection likelihood in cases of delayed presentation. In addition, trace-related biological evidence such as nail swabs was collected by the responding forensic team in the context of crime-scene processing. All specimens were packaged in appropriate containers, sealed, labeled with identifying case particulars, and documented in evidence logs. Evidence parcels were handed over to the investigating officer with documented acknowledgment and signatures, and the chain of custody was maintained through sealed transfer to PFSA for laboratory examination. Upon receipt, PFSA ERU procedures included verification of seals and accompanying documentation, registration in hard-copy and digital systems, assignment of unique laboratory coding, secure storage in the strong room, and onward transfer to the relevant analytical department (e.g., serology), where reporting was subject to internal review prior to issuance to investigative authorities (22,23). Given that the case involved a minor and sensitive medico-legal content, strict measures were applied to ensure confidentiality and ethical compliance. Identifying personal information was anonymized for reporting and publication purposes, including removal of names, contact information, national identification numbers, and precise residential addresses. The medico-legal examination was performed under legally valid guardian consent, and consent for use of clinical and medico-legal findings for academic reporting was considered under institutional policies governing case-based publication. Where formal institutional ethical approval was not required due to the descriptive and anonymized nature of the report, an ethics waiver statement should be included consistent with journal requirements. All procedures were aligned with medico-legal obligations to balance evidence preservation with victim welfare, particularly in pediatric cases requiring trauma-informed approaches (23).

RESULTS

The incident was reported on 01 Jun 2024, with police contacted and crime scene processing initiated. The medico-legal examination occurred at a tehsil-level hospital on 03 Jun 2024. Sealed evidence parcels were submitted to PFSA Lahore ERU on 01 Jul 2024, where registration and coding preceded laboratory processing. General examination showed an 8-year-old male child sitting uncomfortably; behavioral confusion was noted. No

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bruises, abrasions, bite marks, or visible external injuries were recorded. Local anorectal examination documented a tear mark at the 12 o'clock position with marked hyperemia. No bleeding and no visible seminal staining were noted. Evidence included nail swabs and buccal swabs collected during scene processing and oral/buccal swabs and anal swabs (external, middle, internal) collected during medico-legal examination. Clothing was recorded as not submitted.

Table 1. Standardized case timeline (confidential placeholders)

Event	Date	Record source
Incident reported	01 Jun 2024	FIR-XXX/2024 (anonymized)
Police contacted & CSU processing	01 Jun 2024	CSU recovery note (anonymized)
Medico-legal arrival & examination	03 Jun 2024	MLC-XXX/2024
Sealed exhibits handed to IO	03 Jun 2024	MLC evidence handover section
Submission to PFSA ERU	01 Jul 2024	PFSA receiving record (anonymized)
PFSA registration & coding	01 Jul 2024	ERU workflow/log extract
Lab processing initiated	After ERU	PFSA departmental transfer record

Table 2. Clinical findings (positive and negative documentation)

Domain	Positive findings	Negative findings
General examination	Child uncomfortable; confusion noted	No systemic abnormality recorded
External injuries	None	No bruises/abrasions/bite marks
Anorectal findings	Tear mark at 12 o'clock with marked hyperemia	No bleeding; no seminal stain observed
Clothing inspection	Wearing shalwar qameez	No stains/cuts/tears reported

Table 3. Evidence collected for serology/DNA analysis

Evidence type	Site / description	Collected by	Purpose
Nail swabs	Victim nails	CSU team	DNA recovery
Buccal swabs	Victim buccal cavity	CSU team	DNA reference
Oral swabs	Buccal/oral cavity	MLO	Serology/DNA
Anal swabs	External, middle, internal	MLO	Serology/DNA
Clothing	Not submitted	—	—

Table 4. Chain-of-custody steps (empirical record-based)

Step	Responsible	Record/document
Collection & sealing (scene)	CSU	Recovery memo + sealed exhibits
Collection & sealing (hospital)	MLO	MLC evidence section
Handover to IO	Police	Evidence handover note
Submission to PFSA ERU	IO	PFSA receipt record
Seal/document verification	PFSA ERU	ERU checklist/log
Registration & coding	PFSA ERU	Hard + digital entry; PFSA code
Storage & lab transfer	PFSA	Strong room + transfer log
Analysis & reporting	PFSA lab	Analyst report + reviewer sign-off

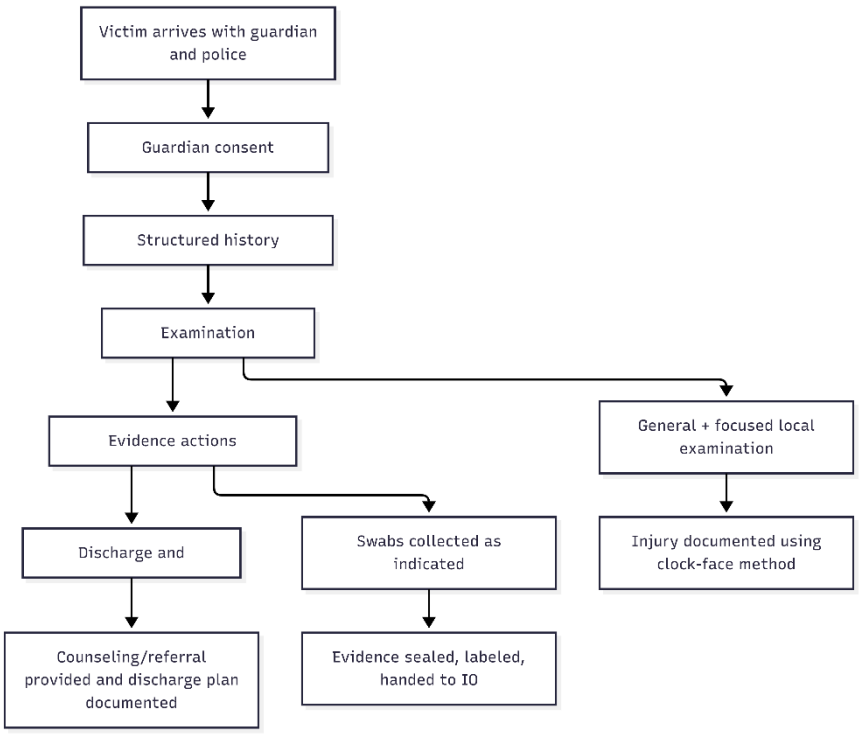

Figure 2 Clinical–forensic workflow for evaluation and evidence handling in suspected sexual assault.

Evidence was sealed and labeled at collection points and handed to the IO. PFSA ERU verified seals and documents (FIR, docket, recovery memo), registered the case, assigned a standardized PFSA code, stored evidence in the strong room, and transferred it to laboratory departments. PFSA ERU procedures included seal verification, registration, coding, and secure storage prior to departmental transfer. Analytical outcomes (serology/DNA findings) were not available in the records provided and therefore could not be reported.

Table 5. PFSA serology/DNA outcomes (as available)

Test domain	Outcome	Notes
Serology	Not available	PFSA final report not provided
DNA profiling	Not available	PFSA final report not provided
Final PFSA conclusion	Not available	Should be inserted when PFSA report is available

DISCUSSION

This medico-legal forensic case study illustrates the practical complexities of investigating alleged sodomy in a pediatric victim, particularly when examination is delayed and overt physical trauma is minimal. In the present case, the medico-legal examination was performed approximately two days after the alleged incident, a time interval that is widely recognized to reduce the probability of detecting biological evidence such as semen, epithelial cells, or trace DNA due to washing, toileting, and environmental degradation (22,23). Delayed reporting remains a consistent barrier in sexual offence investigations and is frequently driven by stigma, fear, or limited awareness of the importance of early medico-legal evaluation, thereby constraining both clinical interpretation and forensic yield (22). Despite this delay, a localized tear at the 12 o'clock position with marked hyperemia was documented, providing supportive physical evidence consistent with anorectal trauma. However, the broader absence of bruises, abrasions, bleeding, or other visible injuries aligns with medico-legal literature indicating that a substantial proportion of sexual assault victims may present without obvious anorectal injury. Retrospective medico-legal studies have reported that only a minority of examined cases demonstrate clear anorectal damage, and injury detection is influenced by examination timing, examiner experience, victim age, and assault characteristics (16,23). Therefore, the limited injury pattern in this child should not be interpreted as evidence against assault; rather, it emphasizes the need for balanced medico-legal interpretation that integrates history, examination findings, and laboratory evidence where available (16,23).

The medico-legal value of negative findings is equally important in such cases. Systematic documentation of the absence of injuries (e.g., no bruises, no bite marks, no bleeding, no visible seminal stains) reduces interpretive ambiguity and provides courts with a complete clinical record that can be weighed alongside witness testimony and investigative outcomes (23). In addition, pediatric victims require specialized forensic approaches: anatomical elasticity may limit external injury visibility, communication constraints may affect history-taking, and psychological trauma can manifest as confusion, withdrawal, or limited disclosure, all of which necessitate trauma-informed practices and trained examiners to ensure victim welfare while preserving evidentiary value (21,23). The structured consent process through guardians, the use of directed history questions regarding toileting and clothing changes, and the adoption of clock-face injury documentation reflect appropriate medico-legal standards and support reproducibility of findings (23).

A key strength demonstrated in this case was the adherence to evidence preservation principles and chain-of-custody continuity. Evidence collection at the scene and in the hospital setting, followed by sealed packaging, documented transfer to police, and systematic PFSA ERU receiving procedures and coding, reflects an organized forensic pathway that enhances evidentiary integrity and legal admissibility (22,23). Multi-agency coordination between law enforcement, medico-legal clinicians, and forensic laboratory personnel remains essential in sexual offence investigations, particularly in cases where physical findings may be subtle and laboratory evidence becomes the primary means of corroboration

(22,23). PFSA's structured workflow—including documentation, secure storage, departmental transfer, analytical examination, and report cross-checking—represents a quality assurance mechanism that supports reliability and defensibility of forensic outputs (23).

Nevertheless, the case report has notable limitations. First, it represents a single case and therefore cannot be generalized to the wider spectrum of sodomy allegations across different settings and victim groups. Second, the delay between assault and examination likely reduced the biological evidence yield, potentially weakening corroborative laboratory findings, particularly if victim hygiene practices occurred (22,23). Third, laboratory outcomes were not available for inclusion in the current report, preventing reporting of serology or DNA conclusions that would strengthen medico-legal interpretation. Finally, the absence of documented forensic photography or colposcopic imaging (if not performed) may reduce the objectivity and reviewability of injury documentation, especially when subtle mucosal trauma is present and inter-observer variability is a recognized limitation in clinical forensic assessments (23).

From a practice perspective, the findings support several improvements. First, early reporting initiatives and public education can substantially improve forensic yield by enabling timely examinations and reducing evidence degradation (22). Second, standardized pediatric sexual assault protocols should be strengthened, including trained personnel, child-sensitive environments, and integrated psychological support. Third, digital documentation systems—such as electronic medico-legal certificates, injury diagrams, and barcoded evidence tracking—can reduce administrative errors, preserve records, and strengthen accountability. Finally, close coordination with forensic laboratories and improved turnaround time for serology/DNA results can enhance investigative and judicial efficiency (22,23).

CONCLUSION

This descriptive pediatric medico-legal case study demonstrates that effective investigation of alleged sodomy requires standardized documentation, comprehensive evidence collection, and strict chain-of-custody management, particularly when overt injuries are minimal and examination is delayed. A tear mark at the 12 o'clock position with marked hyperemia provided supportive evidence of anorectal trauma, while systematic documentation of negative findings enhanced medico-legal completeness. Multidisciplinary coordination and adherence to PFSA evidence handling protocols strengthened evidence integrity. Improvements in early reporting education, pediatric-focused training, and digital documentation systems are recommended to enhance forensic yield and legal outcomes.

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