



Review

Distinguishing clinical diagnosis from specimen chain-of-custody failures in oral and maxillofacial surgery: A case-based analysis of the Rome mandibulectomy and a framework for system-level prevention

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Abstract: *Background:* A reported adverse event at the Policlinico Umberto I in Rome, Italy, in which a healthy 35-year-old man underwent partial mandibulectomy after an alleged biopsy transposition with another patient diagnosed with high-grade osteosarcoma, represents a sentinel example of specimen chain-of-custody failure in oral and maxillofacial surgery. *Objective:* This case-based narrative review distinguishes clinical diagnostic reasoning in mandibular oncology from pre-analytic and analytic failures in specimen identification, using the publicly reported Rome case as an educational anchor for prevention. *Methods:* The reported chronology was reconstructed from open journalistic sources and interpreted in light of the literature on surgical pathology specimen misidentification, wrong-patient procedures, DNA-based specimen provenance testing, disclosure after adverse events, and second-victim support. *Results:* The case shows key features of specimen-identity failures: late detection, possible reproduction of the error during slide-based second opinion, poor visibility to routine laboratory quality control, and simultaneous harm to at least two patients. Unlike cognitive diagnostic errors, specimen transpositions cannot be corrected by expert reinterpretation of the same misattributed material. *Conclusions:* Clinical excellence alone cannot prevent harm when tissue is attributed to the wrong patient. A phase-specific framework incorporating disciplined labeling, structured handover, pathology identity checks, pre-resection diagnostic time-out, DNA-based provenance testing, transparent disclosure, and psychological support may reduce the risk and impact of similar events.

Keywords: medical error; patient safety; specimen misidentification; diagnostic error; oral and maxillofacial surgery; osteosarcoma

1. Introduction

Medical error remains a major source of preventable harm in health care, and diagnostic error contributes disproportionately to serious patient injury [1]. In oral and maxillofacial surgery and in surgical oncology, the stakes attached to histopathological diagnosis are especially high, because treatment decisions frequently involve irreversible, function-altering, and disfiguring procedures. Once a malignant diagnosis is rendered for a mandibular lesion, the downstream pathway, comprising segmental resection, reconstruction, and adjuvant chemotherapy, is set in motion quickly and is difficult to reverse.

In early 2025, Italian national media reported a case at the Policlinico Umberto I in Rome in which a healthy young man underwent partial mandibulectomy on the basis of a biopsy result that, months later, DNA analysis showed was not his. The case attracted attention partly because of its severity and partly because it was, at its core, not a story about the difficulty of recognizing osteosarcoma but a story about specimen identity.

This distinction matters because discussions of “diagnostic error” often blur two analytically separate domains. The first is clinical-cognitive: Whether the clinician’s reasoning about a lesion, integrating history, imaging, and histopathology, is sound. The second is pre-analytic and process-based: Whether the specimen being reasoned about is correctly attributed to the patient, accurately labeled, properly accessioned, and correctly communicated between teams. Conflating these two domains obscures the true source of preventable harm and may direct corrective effort toward the wrong target, such as additional clinical education when the failure lay in identity control, or the reverse.

This article is a case-based narrative review rather than an original research report or a systematic review. Its purpose is educational and practical: To reconstruct, from open journalistic sources, the reported sequence of the Rome case; to place it within the published evidence on specimen misidentification and wrong-patient procedures; and to propose a concrete, implementable prevention framework for oral and maxillofacial surgery and its associated pathology services. The article does not adjudicate the legal or factual questions of the specific case, which at the time of writing (2026) remained under investigation and the details of which may evolve as the official inquiry proceeds. Because the reconstruction rests on publicly available reporting rather than on primary clinical or laboratory records, some elements of the chronology are necessarily provisional, and the account should be read as illustrative rather than definitive. All clinical recommendations are drawn from the general patient-safety literature and are intended to be generalizable.

2. The Rome mandibulectomy case: A reconstruction from public sources

The following account is reconstructed from publicly available Italian news reporting; the case was first reported by *Corriere della Sera* on 20 February 2025 and subsequently summarized by national news agencies. No confidential clinical record was accessed, and the patient was identified in the press only by a pseudonym. The chronology is therefore presented as reported rather than as adjudicated fact.

According to these reports, in May 2024, a 35-year-old man attended the odontostomatology clinic of the Policlinico Umberto I in Rome for a routine procedure: Extraction of a wisdom tooth and removal of an associated cyst. As is standard practice, the excised cystic tissue was sent for histopathological examination. On 10 June 2024, the patient was informed by telephone that the histological examination was positive, and on 18 June, in a formal consultation, the specimen was reported as showing a high-grade osteosarcoma. He was advised that survival required partial resection of the mandible, followed by nine cycles of adjuvant chemotherapy.

In July 2024, the patient underwent partial mandibulectomy with placement of a reconstruction plate. He reported waking with a right-sided facial nerve deficit, described in press reports as facial paresis. In September 2024, a histopathological examination performed on the resected bone was reported as negative for malignancy. The clinical team reportedly reassured him that he had been fortunate to be operated on early, and indicated that chemotherapy might no longer be necessary. Seeking certainty, the patient obtained a further opinion at a Rome oncology institute, where the original slide-based diagnosis was reportedly confirmed, an entirely consistent outcome if the same misattributed slides were being reviewed.

Table 1. Reported chronology of the Rome mandibulectomy case, reconstructed from public news sources.

Date	Reported event
May 2024	A 35-year-old man attends the odontostomatology clinic of the Policlinico Umberto I, Rome, for routine extraction of a wisdom tooth and removal of an associated cyst. The excised cystic tissue is sent for histopathological examination.
June 2024	The patient is informed that the specimen is positive and is given a diagnosis of high-grade osteosarcoma. Partial mandibular resection followed by adjuvant chemotherapy is advised.
July 2024	Partial mandibulectomy is performed with placement of a reconstruction plate. The patient reports a right-sided facial nerve deficit after surgery.
September 2024	Histopathological examination of the resected bone is reported as negative for malignancy. The patient is reassured that early surgery was protective; the need for chemotherapy is questioned.
September to October 2024	A second opinion at a Rome oncology institute reportedly confirms the original slide-based diagnosis, an outcome consistent with review of the same misattributed material.
October 2024	The patient submits the biopsy slides for independent genetic analysis. On 25 October the result indicates that the DNA in the diagnostic material does not match his own, implying a specimen transposition between two patients.
Early 2025	The case is reported by the national press. The patient files a complaint for grievous bodily harm; a judicial investigation is opened and the hospital reportedly initiates an internal review of its biopsy-handling procedures.

Still unconvinced, in October 2024, the patient brought the biopsy slides to a university laboratory for genetic analysis. The result, reported on 25 October 2024, was that the DNA in the diagnostic material did not match his own. The inescapable conclusion was that the slides on which the mandibulectomy had been based belonged to a different patient: One who genuinely carried a high-

grade malignancy and whose own diagnosis and treatment may, as a result, have been delayed. The patient filed a complaint for grievous bodily harm; a judicial investigation was opened, and the hospital reportedly initiated an internal review of its biopsy-handling procedures, describing the event as human error. The reported chronology is summarized in Table 1.

Several features of this reconstructed chronology are instructive. First, the error was not detected by any internal laboratory or clinical control; it came to light because the patient pursued independent DNA testing. Second, at least two opportunities for earlier detection appear to have passed: The negative histology of the resected bone in September, and the second-opinion review, which, if performed on the same misattributed slides, could only reproduce the original error rather than expose it. Third, the harm was bilateral: One patient underwent an unnecessary, disfiguring operation, and another faced a potentially dangerous diagnostic delay. Late detection, patient-driven discovery, reproduction of the error rather than its interception on review, and two-patient harm are all characteristic of specimen-identity failures, and they frame the prevention discussion that follows.

3. Clinical diagnostic framework for mandibular malignancies

To see why the Rome event is most accurately described as a process failure, it is useful first to outline the clinical domain it is sometimes mistaken for. Osteosarcoma is a malignant bone tumor; the head and neck region accounts for only a small proportion of all osteosarcomas, and within that region, the mandible is among the more common sites. In a single-institution series of 50 head and neck osteosarcoma patients, the mandible was the most frequent site, and the chondroblastic variant was the most common histological subtype [2]. Mandibular osteosarcoma typically presents as a rapidly enlarging mass with pain, facial asymmetry, swelling, and sometimes paresthesia from nerve involvement; radiographically, it may show mixed osteolytic and osteosclerotic change with a “sunburst” periosteal reaction, and histologically it is characterized by pleomorphic spindle cells producing osteoid. The differential diagnosis is wide, encompassing benign and malignant fibro-osseous lesions, other sarcomas, and metastatic disease, and definitive classification rests on careful histopathological assessment, ideally with clinical and radiological correlation, because craniofacial osteosarcoma is well recognized as a diagnostic challenge that is frequently identified only after delay [3]. Management of confirmed high-grade disease is aggressive, with wide resection frequently combined with adjuvant chemotherapy, and the outcome is site-dependent: Mandibular tumors generally carry a more favorable prognosis than other craniofacial sites when complete resection is achieved [4].

The point of rehearsing this is not that the Rome team reasoned poorly about osteosarcoma. On the contrary, given a slide showing high-grade osteosarcoma and a requisition attributing it to the patient, the pathway that followed, namely multidisciplinary evaluation, prompt resection, and planned chemotherapy, is broadly what guidelines would dictate. The reasoning was appropriate to the information; the information was wrong. It is worth noting, however, that correlation of the histological diagnosis with the clinical presentation and the radiological findings is a long-standing safeguard, and a discrepancy between an indolent clinical and imaging picture and an aggressive histological report should prompt scrutiny before irreversible surgery. The public reports do not make clear whether such radiological–histological correlation was undertaken before resection, and this article does not presume to establish it; the general point is that independent review of the imaging, alongside the slides, is one of the checkpoints at which an identity mismatch can surface. This is precisely why clinical

excellence, on its own, could not have prevented this event, and why the analysis must move upstream, to how specimen identity is established and preserved.

4. Specimen misidentification: Frequency and mechanisms

4.1. How often do specimen identification errors occur?

Specimen identification errors are uncommon when expressed as a proportion of all specimens, but they are decidedly not rare in absolute terms, given the volume of pathology performed. In the College of American Pathologists (CAP) Q-Probes study of more than one million surgical pathology cases from 417 institutions, identification and accessioning deficiencies were found in 6.0% of accessioned cases, most of them related to missing or inaccurate clinical information; errors of specimen misidentification accounted for 9.6% of all errors, i.e., approximately 0.57% of accessions [5]. A later CAP study of mislabeling across 136 institutions cataloged mislabeled cases, specimens, blocks and slides, and explicitly linked inadequate labeling to patient injury through wrong-patient diagnosis, wrong-side treatment and diagnostic delay [6]. In a CAP Q-Probes study of patient and specimen identification errors across 120 clinical laboratories, 85% of errors were detected before results were released; the residual 15% is the dangerous fraction [7]. A prospective surgical study found identification errors in approximately 4.3 per 1000 specimens, with “incorrect patient” among the recorded error types [8].

The most directly relevant data concern occult specimen provenance complications, that is, those that by definition leave no internal trace and are therefore invisible to standard laboratory quality control. In an analysis of nearly 13,000 prostate biopsies tested prospectively with short tandem repeat (STR) DNA analysis, the rate of complete patient-to-patient transposition (type 1 error) was approximately 0.26%, and the rate of contamination of a patient’s tissue with one or more other patients’ tissue (type 2 error) approximately 0.67%; every practice setting and laboratory type with a meaningful sample size experienced at least one of each [9]. Because each transposition involves at least two patients, even a sub-1% rate understates the number of people potentially affected. Specimen mix-ups between patients are, moreover, among the more prominent allegations in pathology-related malpractice claims [10,11].

4.2. Where in the workflow do these errors arise?

Specimen identification can fail at any of three phases. Pre-analytic failures occur before the specimen reaches the pathologist: Mislabeling at the point of collection, transcription errors on the requisition, mismatches between the container and the requisition, or confusion when multiple patients’ specimens are handled in proximity. Analytic failures occur within the laboratory: Mix-ups during accessioning, grossing, embedding, microtomy, or staining, and “floaters”, meaning tissue fragments transferred between specimens [12]. Post-analytic failures occur in reporting: A correct diagnosis entered against the wrong patient or communicated to the wrong clinician. The Rome case, as publicly reported, is most consistent with a transposition affecting the diagnostic material, a pre-analytic or analytic identity failure, rather than a misreading of correctly attributed slides. Molecular methods are recognized precisely as the means by which such mislabeled specimens are identified and resolved [13]. Communication structure matters as much as laboratory technique: Mislabeled specimens have been

characterized as fundamentally a communication error, and the handover of specimens from operating theater to laboratory is frequently under-standardized, with request forms conveying minimal information and few explicit hazard warnings [14].

5. Comparison with similar published events and error patterns

The Rome case is unusual in its visibility and its severity, but the failure mode it represents is well documented. Placing it alongside the published literature helps separate its idiosyncratic features from its generalizable ones.

Table 2. Two domains of “diagnostic error” compared: Cognitive diagnostic error versus specimen-identity error.

Feature	Cognitive diagnostic error	Specimen-identity error
Locus of failure	Interpretation of correctly attributed information (history, imaging, histology).	Attribution, labeling, accessioning, or communication of the specimen.
Effect of a second expert opinion	May genuinely correct the error, because a second reader adds information.	Typically reproduces the error, because the same misattributed material is reviewed.
Detection by routine laboratory quality control	Variable; addressed by review, second reading and clinicopathological correlation.	Often poor; occult transpositions leave no internal trace and may be invisible to standard checks.
Number of patients harmed	Usually one.	At least two: The recipient of the wrong result and the patient whose true result is displaced.
Most effective countermeasure	Expertise, structured review, multidisciplinary discussion, education.	System design: identifier discipline, traceable handover, independent identity verification, DNA-based provenance testing.

Wrong-patient and wrong-site surgery. The Rome event belongs to the broader family of wrong-patient procedures. Wrong-site and wrong-patient surgery is classified as a sentinel event and, in policy terms, a “never” event, and has been the subject of sustained attention since the 1990s. A widely cited analysis estimated non-spine wrong-site surgery at 1 in 112,994 operations and concluded that the Joint Commission Universal Protocol might have prevented 8 of the 13 cases (62%) for which medical records were available, a reminder that a checklist addressed to the anatomical side does not necessarily address specimen or patient identity [15].

Specimen-driven errors specifically. What distinguishes the Rome case from the canonical wrong-site amputation is that the erroneous information entered the clinical pathway through the specimen, not through a mismarked limb. This pattern, in which a specimen switch generates a false malignant diagnosis and triggers treatment, is recognized in the pathology literature, where DNA-based provenance testing has repeatedly resolved specimen mix-ups that conventional review could not [13,16], and where such testing is increasingly applied even without any specific suspicion, when findings are unexpected, or the clinical context is atypical [13].

The “reproduced on review” trap. A recurrent feature of specimen-identity errors, and a key contrast with cognitive diagnostic errors, is that obtaining another expert opinion on the same misattributed material cannot correct the error; it can only confirm it. This is structurally different from a borderline interpretive case, where a second reader genuinely adds information. The limitation is one reason identity errors often persist late into the care pathway, as the reported Rome chronology illustrates.

Two-patient harm. Finally, like other transposition errors, the Rome case harmed at least two people: The patient who received unnecessary, disfiguring surgery, and the unidentified patient whose genuine malignancy was, at minimum, not diagnosed through that specimen when it should have been. This doubling of harm is intrinsic to transposition errors and is part of why they warrant disproportionate preventive investment. The distinguishing features of the two error domains are summarized in Table 2.

6. Psychological impact and support pathways after adverse events

The human cost of such an event extends well beyond the operative result. A diagnosis of high-grade malignancy is itself associated with acute anxiety, depressive symptoms, and anticipatory grief; when the “treatment” is a disfiguring mandibular resection, the threat extends to identity, speech, mastication, and social function. The subsequent revelation that the procedure was unnecessary introduces a further, distinct injury. Patients who experience serious medical error may suffer considerable psychological trauma, arising both from the adverse outcome and from the way the incident is subsequently handled, and this impact on the patient has historically received less attention than it warrants [17]. These consequences argue for early, explicit psychological support, including counseling and, where appropriate, structured peer support, built into the response to the event rather than offered ad hoc.

Clinicians are affected too. The “second victim” phenomenon, that is, the lasting distress experienced by health professionals involved in an adverse event, is well described [18], and institutions that respond only punitively tend to deepen the silence and fear that allow errors to recur [19]. A constructive response supports the people involved while relentlessly improving the system around them; this is the core of the long-standing argument that error should be managed as a property of systems rather than attributed solely to individuals [20].

Disclosure deserves specific mention. The reported chronology of the Rome case, in which the patient pieced the truth together over several months, is the opposite of timely, transparent disclosure. Open, prompt communication after harm, acknowledging what happened, what is known and not yet known, and what is being done, is an ethical obligation and a practical necessity: Concealment compounds injury and erodes the trust on which any corrective program depends.

7. A framework for prevention: Implementable checks and protocols

Preventing events of this kind requires intervention at each phase of the specimen pathway, a decision-stage safeguard before irreversible surgery, and a humane post-event process. None of the components below is novel in isolation; the value lies in deploying them as a coherent, traceable system. The recommendations are arranged to be directly adoptable by an oral and maxillofacial surgery service and its associated pathology laboratories. These are consolidated in Table 3.

Table 3. A phase-by-phase framework for preventing specimen-identity failures in oral and maxillofacial surgery.

Phase	Objective	Practical measures
Pre-analytic (collection and handover)	Establish and preserve specimen identity from the point of excision.	• Label the specimen container (not only the lid or the request form) with at least two patient identifiers, in the presence of the patient whenever possible. • Make spoken confirmation of specimen identity an explicit item of the surgical safety checklist, not an informal afterthought. • Complete a structured surgical-pathology handover form alongside the routine request, conveying identifiers, relevant clinical context and explicit hazard flags. • Avoid handling specimens from more than one patient simultaneously at the point of collection.
Analytic (laboratory)	Carry an unbroken identity chain through processing and confirm new malignant diagnoses.	• Re-verify identifiers at accessioning and link every block and slide to the patient by barcode or equivalent traceable means. • Practice one-case-at-a-time discipline at the grossing bench to reduce transposition and floater contamination. • For any new malignant diagnosis in a mandibular specimen, obtain independent confirmation of both the diagnosis and the identity chain before the report is finalized.
Decision (before irreversible surgery)	Confirm that the malignant diagnosis genuinely belongs to the patient before resection.	• Review every new mandibular malignancy at a multidisciplinary tumor board with the reporting pathologist, operating surgeon, and radiologist in direct contact. • Treat a mismatch between an indolent clinical history and an aggressive histological diagnosis as a trigger for explicit identity verification. • Correlate the histological diagnosis with the clinical presentation and the radiological images before resection, and treat any discrepancy as a further trigger for identity verification. • Perform a documented pre-resection diagnostic time-out, distinct from the anatomical-side time-out (see Table 4). • For high-grade malignant diagnoses leading to resection, consider DNA-based specimen provenance testing, which can detect an occult transposition that conventional review will otherwise reproduce.
Post-event (when an error occurs or is suspected)	Limit harm, learn, and support those affected.	• Disclose promptly and honestly to the patient what is known and not yet known and what is being done. • Preserve all material for objective analysis, including DNA testing. • Conduct a blame-aware, system-focused root-cause analysis and feed findings back into changed practice. • Provide psychological support to the patient and to the staff involved (“second victims”).

7.1. Pre-analytic phase: Labeling and theater-to-laboratory handover

The single highest-yield intervention is rigorous specimen identification at the point of collection, with at least two patient identifiers on the container, not only on the lid or the requisition, labeled in the presence of the patient wherever possible. Compliance with structured surgical safety processes has been associated with fewer specimen-labeling errors, which argues for making specimen identity an explicit, spoken item within the surgical checklist rather than an afterthought [21,22]. A structured surgical-pathology handover, consisting of a brief, standardized form completed alongside the routine request and conveying not only identifiers but also relevant clinical context and explicit hazard flags, has been proposed for head and neck specimens and is a practical, low-cost adoption [14].

7.2. Analytic phase: Accessioning and independent verification

Within the laboratory, identity should be re-verified at accessioning and carried unbroken through grossing, embedding, microtomy, and staining, with barcode or equivalent traceable linkage of every block and slide back to the patient. Worklist discipline, meaning handling one case at a time at the grossing bench and avoiding simultaneous open containers from different patients, reduces transposition and floater contamination. Structured analysis of specimen adverse events and near misses supports this kind of process-level intervention [23]. For any new diagnosis of malignancy in a mandibular specimen, independent verification before the report is finalized is reasonable: A second pathologist confirming the diagnosis and the identity chain.

7.3. Decision phase: The pre-resection diagnostic time-out and DNA provenance testing

The most important addition specific to irreversible oncologic surgery is a diagnostic time-out before resection: A deliberate, documented check, distinct from the anatomical-side time-out, that confirms the malignant diagnosis is genuinely the patient's. Two elements belong here. First, multidisciplinary tumor-board review of every new mandibular malignancy, with the reporting pathologist, the operating surgeon, and the radiologist in direct contact, so that the slide, the imaging, the clinical picture, and the identity trail are examined together; a mismatch between an indolent-sounding clinical history or imaging appearance and an aggressive histological diagnosis should trigger explicit identity verification rather than acceptance. Second, for high-grade malignant diagnoses that will lead to resection, DNA-based specimen provenance testing, that is, STR comparison of the diagnostic tissue against a reference sample from the patient, should be considered, since it is the one test that can detect an occult transposition that conventional review will otherwise reproduce [9,11,13]. This last measure is deliberately selective rather than universal: It is not proposed as routine screening of every surgical specimen, which would be neither feasible nor cost-effective given pathology volumes, but as a targeted safeguard reserved for the small subset of high-grade diagnoses that commit the patient to an irreversible, disfiguring operation, where the clinical stakes justify the added cost and turnaround. The lower-cost measures already described, namely disciplined identifiers, structured handover, and radiological–histological correlation, remain the first line of defense, with DNA testing as a final check at the point of no return. Had such a layered check been in place, the Rome case would, in principle, have been intercepted before surgery rather than months after it. A ready-to-adopt version of this time-out is given in Table 4.

Table 4. Proposed pre-resection diagnostic time-out for irreversible oncologic mandibular surgery.

No.	Item to be confirmed and documented before resection
1	Patient identity on the pathology report matches the patient in front of the team, confirmed against two independent identifiers.
2	The histopathological diagnosis has been reviewed by the reporting pathologist together with the operating surgeon and radiologist, with the actual slides and imaging available.
3	The clinical history and imaging are coherent with the histological diagnosis; any indolent-history / aggressive-diagnosis mismatch has been explicitly resolved.
4	The identity chain from collection through accessioning, blocks and slides has been traced and is intact and documented.
5	For a high-grade malignant diagnosis, DNA-based specimen provenance testing has been performed or its omission has been a documented, considered decision.
6	The case has been discussed at a multidisciplinary tumor board, and the indication for resection is recorded.
7	Any unresolved doubt about diagnosis or specimen identity stops the pathway until it is resolved.

7.4. Post-event phase: Disclosure and second-victim support

Finally, the system must include what to do when, despite the above, an error occurs or is suspected: Prompt and honest disclosure to the patient; preservation of all material for objective analysis, including DNA testing; a blame-aware, system-focused root-cause analysis; psychological support for the patient and for the staff involved; and a feedback loop that turns findings into changed practice [18,20].

Immediate versus resource-dependent measures. The recommendations differ in what they demand of an institution. Several can be adopted immediately and at negligible cost within existing workflows: Labeling the specimen container with two patient identifiers in the patient's presence, adding a spoken specimen-identity item to the surgical safety checklist, completing a structured theater-to-laboratory handover form, practicing one-case-at-a-time discipline at the grossing bench, performing the pre-resection diagnostic time-out, and following an honest disclosure and second-victim support protocol when an error is suspected. Others depend on additional institutional resources and are better framed as staged goals: Full barcode-based specimen traceability, routine access to DNA-based specimen provenance testing for high-grade diagnoses, and reliable multidisciplinary tumor-board infrastructure with pathology, surgery, and radiology represented. Distinguishing the two enables a service to close the highest-yield gaps first while planning for the more resource-intensive layers.

8. Conclusions

The Rome mandibulectomy case is, above all, a lesson in keeping two questions separate. "Is this diagnosis correct?" is a clinical-cognitive question. "Is this specimen this patient's?" is a question of identity and process. The first is answered by expertise; the second is answered by system design: Through labeling discipline, traceable handovers, independent verification, radiological–histological

correlation, a diagnostic time-out before irreversible surgery, and, for high-stakes oncologic decisions, DNA-based provenance testing. Clinical excellence is necessary but not sufficient, because no quality of reasoning can correct a slide that was never the patient's to begin with.

Limitations. This analysis has several limitations. It is a narrative, case-based review rather than a systematic one, and the index case is reconstructed from publicly available news reporting rather than from primary clinical, radiological, or laboratory records. Details of the chronology are therefore provisional and may change as the official investigation concludes; some of the safeguards proposed here may, in fact, already form part of local practice or of the institution's own corrective response. The intention is not to adjudicate the specific case but to use a widely reported sentinel event to illustrate a well-characterized failure mode and to frame generalizable prevention. The framework is derived from the patient-safety literature and has not been prospectively validated as a bundle, and the balance of benefit, feasibility, and cost, particularly for DNA-based provenance testing, will vary between institutions.

Specimen identification errors are uncommon per case but not rare in aggregate, are frequently invisible to the very laboratory controls meant to catch them, and characteristically harm two patients at once. They are also, precisely because they are process failures, highly amenable to engineered prevention. For oral and maxillofacial surgery, a field in which a malignant diagnosis routinely sets an irreversible, disfiguring pathway in motion, the case for building these safeguards is strong. The same logic, however, extends well beyond this specialty: Any surgical discipline in which a histopathological diagnosis triggers an irreversible or destructive intervention, including breast, thyroid, and prostate oncology, dermatological and general surgical oncology, and transplantation, stands to benefit from the same phase-specific identity controls, and the framework proposed here is intended to be adapted accordingly. The constructive response to a sentinel event of this kind is neither to blame an individual nor to add generic clinical education, but to redesign the pathway so that identity is verified, traceable, and confirmed before the point of no return, paired with transparent disclosure and genuine support for everyone harmed when prevention fails.

Use of AI tools declaration

The author used Grammarly (version 1.189.2.0) for grammar improvements. The use of this tool is declared in accordance with the journal's policy on artificial intelligence.

Acknowledgments

This research received no external funding, and no grant from any funding agency in the public, commercial, or not-for-profit sectors was received for the preparation of this article.

Ethics statement

This article is based exclusively on information already in the public domain. No clinical records, identifiable patient data, or biological material were accessed, and no ethical approval or informed consent was therefore required.

Conflict of interest

Luca Fiorillo is editor-in-chief of *Journal of Dentistry and Multidisciplinary Sciences* and was not involved in the editorial review or the decision to publish this article. The author declares no conflict of interest. This article is a commentary and narrative review based on publicly reported information; it does not adjudicate the legal or factual issues of the specific case described, and details may evolve as the official investigation proceeds.

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