

Research Article

Assessment of Anesthesia Consultation Delays and Their Impact on Scheduled Surgery

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Background

The Pre-Anesthetic Consultation (PAC) is a vital part of the pre-operative planning process, playing an essential role in ensuring the safety and success of surgical procedures [1]. It takes the form of a medical meeting between the patient and the anesthesiologist prior to the surgical procedure. Its primary objective is to assess the patient's state

Abstract

Background: The Pre-Anesthetic Consultation (PAC) process is a critical step in surgical planning, aimed at ensuring safe and effective procedures. This stage involves a thorough assessment of patient's health status as well as discussions on anesthetic options. The presented study focuses on the analysis of delays that can occur between CPA and surgery, in various medical specialties. It aims to identify the potential causes of these delays, assess their impact on patients, and propose recommendations for better management of these delays, adapted to the specificities of each surgical specialty.

Methods: A prospective cohort study was conducted from [12/06/2023] to [17/07/2023] at the Mohammed V Military Teaching Hospital of Rabat, including 113 patients from various surgical specialties. Inclusion criteria encompassed patients scheduled for surgical procedures with a Pre-Anesthetic Consultation (PAC), excluding surgical emergencies. Data were extracted from medical records using a data collection form, and statistically analyzed to assess delays between PAC and surgery, reasons for delays, and impact on patients, while respecting ethical standards and confidentiality.

Results: The study included 113 patients, equally divided between the sexes, with a mean age of 45.96 years. Delays between PAC and surgery varied considerably, with a mean of 46.29 days. Of the patients, 52 underwent surgery in less than 28 days, 45 waited between 28 and 90 days, and 16 suffered a significant delay of more than 90 days. Delays did not vary significantly by gender or age, but were influenced by surgical specialty and type of surgery.

Conclusion: This study examined delays between Pre-Anesthetic Consultation (PAC) and surgery, revealing wide variations. Although most patients seemed little affected by delays, specific cases required special attention. Relevant complementary examinations were highlighted as essential, requiring a personalized approach. Optimizing preoperative delays requires effective coordination and evidence-based approaches. This research highlights the importance of delay management in improving patient experience and medical practice.

Keywords: Pre-Anesthetic; Consultation-Delay Between PAC; Surgery-Patient Experience

of health, identify the risks inherent in anesthesia and surgery, and establish the appropriate anesthesiologic care. During the PAC, the patient provides a comprehensive set of medical information, including current health status, medical history, current drug therapy and any pre-existing medical history. The anesthesiologist then performs a comprehensive eval-

uation of this data to determine the appropriateness of anesthesia, identify the most suitable type of anesthesia, and define the preventive measures to be taken to minimize potential risks. The PAC also offers the opportunity for an exchange between the patient and the anesthesiologist concerning the different anesthesia options available. This dialogue includes clear explanations of the advantages and disadvantages of each choice, and encourages patients to ask questions and express concerns, helping to build trust and reduce preoperative anxiety [2]. In addition to medical assessment, PAC may also involve specific pre-operative examinations, such as blood tests, electrocardiograms and X-rays. These investigations are carried out according to the patient's state of health and the type of surgery planned, with the aim of identifying any underlying medical conditions that may influence anesthesia and surgery.

The main objective of the study associated with the PAC is to analyze in detail the delays occurring between his crucial pre-anesthetic consultation and the date of surgery in various surgical specialties. The research aims to examine variations in these delays as a function of several key factors, including type of surgery (tumor or non-tumor) and surgical specialty. It also seeks to identify the underlying causes of delays in pre-operative planning and assess their frequency with in each surgical specialty. In addition, the study assesses the impact of these delays on patients, with particular emphasis on their comfort and stress levels. Through an in-depth analysis of the results, its tries to formulate valuable recommendations for better management of delays between PAC and surgery, taking into account the specific features of each medical specialty. Overall, this study is committed to enriching the understanding of delays associated with APC and surgery, identifying areas requiring possible adjustments in pre-anesthetic planning, and contributing to the establishment of more efficient medical practices, thus providing an optimal experience for patients throughout their surgical journey.

Methods

This is a prospective cohort study conducted over an 18-month period, from June 2023 to July 2023, at the Mohammed V Military Teaching Hospital of Rabat. The aim of this study is to evaluate the impact of delays between the Pre-Anesthetic Consultation (CPA) and surgery in various surgical specialties on the operative process.

Study Population

The study sample comprised a total of 113 patients from various surgical specialties, including Visceral surgery, ENT, Traumatology, Neurosurgery, Gynecology-Obstetrics, Urology and Stomatology.

Inclusion and Exclusion Criteria

The inclusion criteria for this study were patients who underwent a Pre-Anesthetic Consultation (CPA) prior to surgery in the above-mentioned specialties. Patients undergoing emergency surgery were not included in this study, in order to focus on scheduled surgical procedures. Patients within complete data or those whose records did not clearly reveal delays between CPA and surgery were excluded.

Variables Studied

Variables collected from patients' CPA records included personal information (name, age, gender), type of surgery (tumor or non-tumor), surgical specialty, delays between CPA and sur-

gery, tests ordered at CPA, reasons for delays and impact of delays on patients.

Data Collection Procedure

Data were extracted from patients' medical records using an evaluations heed specifically designed for this study. Relevant information, such as dates of CPA and surgery, and examinations ordered, was extracted and recorded. The impact of the delay, mean while, was high lighted by questioning.

Data Analysis

The data collected were processed using Excel statistical software. Descriptive analyses, including means, percentages and analysis of variance, were performed to assess mean delays between CPA and surgery, variations by type of surgery and medical specialty, and reasons for delays.

Ethical Approach

This study was conducted in accordance with ethical and confidentiality standards. Patient data were anonymized and personal information was protected. Ethical principles of informed consent and privacy were strictly followed to ensure the integrity and confidentiality of patients participating in this study.

Results

Demographic Profile, ASA Scores, and Comorbidities in a Surgical Patient Cohort

In our study, we collected data from 113 eligible patients. The average age of the sample was 45.96 years, ranging from 18 to 76, with a balanced gender distribution: 55 (48.67%) men and 58 (51.33%) women. Regarding the ASA (American Society of Anesthesiologists) score and comorbidities: ASA I patients (considered generally healthy) constituted 18.5% of the study. ASA II, 49.5%. ASA III accounted for 27.3%.ASA IV, made up 5.3% of the sample.in your the most frequently encountered comorbidities included Hypertension (HTA) in 11.1% of patients, followed by diabetes without chronic complications at 14%, rheumatological or systemic diseases affecting 7%, digestive disorders reported in 11.5%, and other heart conditions found in 5.3%. On the other hand, the least frequently encountered comorbidities were dementia at 1.7%, moderate to severe kidney disease at 3.4%, and chronic lung diseases at 3.4%, providing valuable insights into the prevalence of these conditions in your study population for assessing surgical risk and perioperative management. These comorbidities can significantly impact surgical risk and perioperative management, emphasizing the need for a thorough preoperative evaluation. The predominance of ASA II and III patients underscores the importance of an in-depth and individualized assessment to determine the best approach for perioperative care.

Delays Between Pre-Anesthetic Consultation (CPA) and Surgery

• Distribution of Delays Between CPA and Surgery

The study investigated the delays occurring between Pre-Anesthetic Consultation (CPA) and the actual surgical procedures. The results showed that, on average, patients experienced a delay of approximately 46.29 days. The median delay was 32 days, indicating that half of the patients waited for shorter periods, while the other half waited longer. Moreover, the standard deviation of 33.02 highlighted a significant variation in the de-

lays, signifying that some patients experienced much longer or shorter delays than the average. These findings emphasize the considerable variability in the time patients have to wait for surgery after their CPA, underscoring the need for further examination of the underlying factors contributing to these variations in scheduling.

To delve further into this, patients were categorized based on the time elapsed between CPA and surgery. Approximately 46% of patients underwent surgery with no significant delays (less than 28 days), whereas 39.8% had to wait between 28 and 90 days. A minority of 14.2% experienced significant delays, with a waiting period exceeding 90 days. Table 1

The analysis revealed that men experienced slightly shorter delays than women, but these differences were not statistically significant. Also Patients' age did not seem to play a significant role in delays, with a relatively equitable distribution of delays across different age groups.

• Delays by Surgical Specialty and Type of Surgery

The study examined delays in the Pre-Anesthetic Consultation (PAC) to surgery timeline, revealing noteworthy variations influenced by surgical specialty and the type of surgery. In terms of surgical specialty, the findings highlighted significant differences. Gynecology-Obstetrics (Gyn-ob) boasted the shortest average delays, with an average of just 17.47 days. In stark contrast, Oto-Rhino-Laryngology (ORL) exhibited the longest average delays, clocking in at an average of 81.24 days. These

Table 1: Categories of Delays.

Delay Categories	Mean Delay (in days)	Number of Patients	Percentage
Less than 28 days (No Delay)	19.50	52	46%
28 to 90 days	59.71	45	39.80%
More than 90 days (Significant Delay)	127.63	16	14.20%

This table presents different categories of delays, including the mean delay, the number of patients in each category, and the corresponding percentage.

Table 2: Delays by Surgical Specialty and Type of Surgery.

Surgical Specialty	Average Delays (in days)
Gynecology-Obstetrics (Gyn-ob)	17.47
Neurosurgery	41.38
Oto-Rhino-Laryngology (ORL)	81.24
Stomatology	37.77
Traumatology	42.67
Urology	74.88
Visceral Surgery	41.27
Type of Surgery	
Tumor Surgery	16.19
Non-Tumor Surgery	55.29

This table displays the average delays categorized by surgical specialty and type of surgery, providing insights into the varying delay times associated with different medical fields and surgical procedure.

Table 3: Preoperative Supplementary Examination Trends.

Supplementary Examination	Demand Rate
Complete Blood Count (NFS)	76%
Ionogram	65%
Coagulation	31%
Blood Group and Rh Factor	11%
Chest X-ray	17%
Electrocardiogram (ECG)	49%
Echocardiography	4%

This table illustrates the trends in preoperative supplementary examinations, showcasing the demand rates for various tests commonly conducted before surgical procedures.

findings suggest that scheduling and planning processes can significantly differ across various surgical specialties. Multiple factors contribute to these variations, including the intricacy of surgical procedures, the availability of operating rooms, and the unique clinical priorities associated with each specialty.

The study also investigated delays according to the type of surgery. Notably, patients awaiting tumor-related surgery experienced notably shorter delays, with an average delay of only 16.19 days. In contrast, those waiting for non-tumor-related surgery encountered considerably longer delays, averaging 55.29 days. This disparity likely stems from the prioritization of tumor-related surgeries, given their potential urgency and the severe medical conditions involved. These results underscore the necessity for healthcare facilities to address scheduling and waiting times for non-tumor-related surgeries, ultimately contributing to the enhancement of overall patient care Table 2.

Preoperative Supplementary Examination Trends and Cautious Approaches

The results of the analysis of preoperative supplementary examinations reveal significant trends in the frequency and types of prescribed tests. The findings, summarized in Table 3, indicate a cautious approach to preoperative assessments. The focus is on evaluating hematology, coagulation capacity, lung condition, and cardiac function. The diversity of supplementary tests highlights the need to tailor preoperative preparations to individual patient requirements to minimize potential risks during surgery. This cautious approach is partly attributed to the fact that the Pre-Anesthetic Consultation (PAC) is conducted in their facility by young specialists and medical residents, underscoring the emphasis on patient safety and personalized care.

Reasons and Impacts of Delay

• Reasons and Impacts of Delays

In our study, we identified various reasons for delays in the time between the Pre-Anesthetic Consultation (CPA) and surgery. These delays had different impacts on patients:

Waiting for Evaluation by a Specialist (2 cases): Some delays were due to waiting for evaluations by medical specialists. These assessments, which are essential steps in the process, cannot be rushed and depend on specialist availability.

Delay in Obtaining Additional Examination Results (3 cases): In some instances, delays were caused by longer-than-expected wait times for additional examination results. This delay could affect surgical planning and may lead to the need for further tests.

Scheduling Issues (56 cases): The majority of delays (56 cases) were related to scheduling problems, including issues with operating room availability and conflicting schedules. These delays are often avoidable and might be mitigated with better coordination between surgical teams and hospital facilities.

No Delay (52 cases): It's important to note that in 52 cases, patients experienced no delays and followed the scheduled intervals between CPA and surgery. This suggests that effective scheduling management was achieved in these cases Table 4.

• Impacts of Delay

Mild Discomfort (19 cases): Nineteen patients reported mild discomfort due to the delay, which could include concerns or minor inconveniences. While these discomforts are relatively

Table 4: Reasons for Delay and Associated Impacts.

Reasons for Delay	Number of Cases	Description and Interpretation
Waiting for Evaluation by a Specialist	2	Two cases of delay were attributed to waiting for evaluation by a medical specialist, which may involve specific consultations or assessments needed before surgery. These delays are related to essential medical steps that cannot be rushed and depend on specialist availability.
Delay in Obtaining Additional Examination Results	3	Three cases of delay were due to delays in obtaining additional examination results, indicating that diagnostic tests took longer than expected. Delays in additional examination results can lead to delays in surgical planning, sometimes requiring additional tests.
Scheduling Issues	56	The majority of delays (56 cases) were due to scheduling problems, including operating room availability, conflicting schedules, or other logistical challenges. Delays due to scheduling problems are often avoidable and may require better coordination between surgical teams and hospital facilities.
No Delay	52	Fifty-two cases experienced no delay and adhered to the scheduled intervals between CPA and surgery. It is important to note that a significant proportion of patients did not experience delays, indicating that, in many cases, scheduling was managed effectively.

Table 5: Impacts of Delay.

Impacts of Delay	Description and Interpretation
Mild Discomfort	Nineteen patients reported mild discomfort due to the delay, which may include concerns or minor inconveniences. Although mild, discomfort can affect the patient's experience and requires special attention to minimize future delays.
No Particular Impact	Forty patients did not report any specific impact due to the delay, suggesting that delays did not have significant consequences for their experience or health. Delays do not always have serious consequences, but it is essential to avoid them as much as possible for the well-being of patients.
Increased Stress	Two cases experienced increased stress due to the delay, involving significant health-related concerns. Increased stress can have implications for patients' mental and emotional health, highlighting the importance of reducing delays.

mild, they can impact the patient's experience, highlighting the importance of minimizing future delays. **No Particular Impact (40 cases):** In 40 cases, patients did not report any specific impact due to the delay, indicating that the delays did not have significant consequences for their experience or health. Nevertheless, it remains essential to minimize delays for the overall well-being of patients. **Increased Stress (2 cases):** Two cases experienced increased stress due to the delay, which was related to significant health-related concerns. Increased stress can have implications for patients' mental and emotional well-being, underscoring the importance of reducing delays to mitigate such stress.

Discussion

CPA-Surgery Delays

The study observed varying delays in our sample, emphasizing the importance of understanding the factors influencing these delays. Variations in delays based on surgical specialty and the type of surgery highlight the complexity of preoperative planning. The results suggest that a more targeted delay management approach tailored to each case's specificity could enhance overall preoperative efficiency.

Rationalizing Preoperative Testing

The study examined preoperative investigation

trends and frequencies in our medical setting, shedding light on current practices and their alignment with existing guidelines and recommendations [3]. The analysis provided valuable insights into the justification and necessity of preoperative laboratory tests. The most commonly requested tests included complete blood count (NFS), ionograms, and Electrocardiograms (ECG), indicating a cautious approach to preoperative assessments, focusing on hematology, coagulation capacity, lung function, and cardiac function.

These findings align with the broader medical literature's discussion on the value and necessity of systematic preoperative laboratory tests. Many renowned studies and reports have questioned the conventional practice of extensive preoperative tests, emphasizing the need for a more selective, evidence-based approach [4-7].

The American Society of Anesthesiologists' (ASA) Preoperative Assessment Workgroup, in its 2002 practice advisory, recommended selective tests based on clinical assessment and risk evaluation instead of a systematic battery of tests to reduce unnecessary consultations, delays, and surgery day cancellations, streamlining the preoperative process and reducing costs [8].

Furthermore, studies, such as Chung et al. (2009), showed that eliminating certain preoperative tests in outpatient surgery did not lead to adverse postoperative outcomes. These discussions also consider factors like sensitivity, specificity, disease prevalence, and cost-effectiveness. Clinical relevance, sensitivity, and specificity of tests, along with disease prevalence, influence screening test utility [9].

Preoperative tests should be ordered based on each patient's history and physical examination to confirm disease suspicion, optimize patient management, decide on anesthetic management, and predict perioperative complications. The incidence of abnormal tests is very low in ASA-I and ASA-II patients requiring elective surgery, and patients rarely require changes in peri-anesthetic management due to abnormal test results. Routine tests, in addition to the increasing cost of surgical care, offer no benefits to these patients. Test results based on each patient's clinical condition will provide significant financial benefits without compromising patient safety and healthcare quality [6].

Reasons for Delays

Identified reasons for delays, such as scheduling issues, highlight organizational challenges that hospitals may face in managing surgical schedules. Better coordination and meticulous planning are necessary to reduce these delays and enhance preoperative efficiency.

Impacts of Delays

The impacts of delays on patients vary case by case, with the majority of patients reporting no significant impact. Nevertheless, considering patients' emotional and physical well-being, measures can be taken to minimize any discomfort related to delays, even if it is minimal.

This study emphasizes the need for a holistic approach to managing delays between the Pre-Anesthetic Consultation

(PAC) and surgery. Better communication, effective coordination between medical and surgical teams, and specific attention to patient well-being can optimize delays and ensure a positive experience for all patients, regardless of the type of surgery and medical context. This study provides a solid foundation for future initiatives aimed at improving the preoperative process and ensuring high-quality care [10].

Comparison with Previous Studies and Contextualization

Lack of Similar Studies: In our institution, the requirement for Pre-anesthetic

Consultation (PAC) dates back to 1995, and we were the first in Morocco to introduce it. An extensive scrutiny of the existing scientific literature has revealed a conspicuous absence of congruent investigations, there by accentuating the innovative character of our research endeavors concerning the temporal intervals between PAC and surgical interventions. This distinctive circumstance primarily emanates from the institution-specific prerequisites and guidelines governing our hospital. This distinct scenario engenders a series of intricate challenges. Notably, our clinical practice is characterized by a substantial cohort of patients awaiting surgical procedures, notwithstanding the prompt completion of pre-anesthetic evaluations upon the initial surgical indication by the attending surgeon. Consequently, this intricate clinical landscape occasionally engenders protracted delays between the completion of PAC and the actual surgical intervention, there by invoking pertinent questions regarding the procedural validity and clinical utility of these consultations.

Implications of Previous Studies: Several previous studies have addressed aspects

related to postoperative outcome determinants, the efficiency of complementary tests, and the consequences of surgical delays, providing valuable insights into the significance and impact of our own findings.

Temporal Factors in Postoperative Outcomes

Examining temporal factors in postoperative outcomes is essential to understand the impact of delays between the pre-anesthesia consultation (PAC) and surgery on patients' health. Several previous studies have provided valuable insights into how the timing of surgery can influence perioperative and postoperative results [11-14].

Variations in Surgical Delays and Consequences

A study conducted by V. Ho, B. H. Hamilton, and L. L. Roos examined variations in hip fracture surgery delays in the United States and Canada, showing that longer delays did not necessarily lead to more unfavorable postoperative outcomes in terms of hospital length of stay or mortality [11]. However, this observation cannot be generalized to all surgical procedures, as each type of surgery may have specific timing requirements.

In another study by Roy H. Lan and Atul F. Kamath, the results revealed that preoperative evaluations closer to the surgery date were associated with shorter hospital stays, less frequent admissions to the intensive care unit, and fewer major complications for patients undergoing total hip arthroplasty [12]. However, this study has limitations, including its small sample size and being conducted in a single institution.

Impact of Waiting Time in Neoplastic Surgery

A study conducted by Brenkman et al. examined the waiting time between the diagnosis of curable gastric cancer and treatment, showing that even beyond the recommended 5-week period, a longer delay did not have a significant impact on the survival of patients undergoing gastrectomy [13]. However, these results may not necessarily be generalized to other types of cancer, and the reasons for treatment delays may vary.

Specific Temporal Factors and Psychological Consequences

Scheduling issues, waiting for specialist evaluations, and delays in the results of complementary examinations have been identified as reasons for delays between the PAC and surgery. Previous studies have shown that preoperative medical evaluations closer to the surgery date can reduce preoperative anxiety in patients [12,14].

Implications for Preoperative Delay Management

Considering the results of the studies and the literature review, several practical implications for the management of preoperative delays should be considered. It is important to improve coordination and communication among clinical services to minimize unnecessary delays. Additionally, structured preoperative medical evaluations can be beneficial in better managing underlying medical conditions and reducing preoperative anxiety [15]. Personalizing complementary examinations based on each patient's specific needs is essential to optimize resources while providing high-quality care. Audits and clinician awareness interventions can also help reduce the overuse of certain preoperative tests [16]. It is crucial to recognize that these conclusions may vary depending on the types of surgeries and patient populations, and further research is needed to refine our understanding of this complex issue.

Conclusion

Our study delves into preoperative delays between the pre-anesthetic consultation (CPA) and surgery and the rationality of preoperative laboratory testing, shedding light on current practices and their implications. The findings underline the need for a patient-centered approach to preoperative laboratory tests and surgical scheduling. Selective testing, improved communication and coordination, and a focus on patient well-being are pivotal in optimizing the preoperative process and enhancing patient care. This research is a significant step toward achieving efficient, cost-effective, and patient-focused preoperative practices. The study's implications and recommendations have the potential to influence surgical practice and healthcare systems, ultimately benefiting patients and healthcare providers alike.

Author Statements

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

Author Contributions

Wiam EL JELLOULI, Khalil ABOU ELALAA: Conception, patient enrolment, and interpretation. All authors contributed to literature review, final draft writing, and critical revision. All the authors have participated sufficiently in this work, take public responsibility for the content, and have made substantial contributions to this research.

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