Professional Practice and Neurosurgery: What Every Neurosurgeon Should Know about Malpractice

Exercício profissional e neurocirurgia: o que todo neurocirurgião deveria saber sobre erro médico

Alicia Del Carmen Becerra Romero[1,2]

[1] Department of Neurosurgery, Hospital Materno Infantil Presidente Vargas, Porto Alegre, RS, Brazil
[2] Department of Neurosurgery, Hospital Cristo Redentor, Grupo Hospitalar Conceição, Porto Alegre, RS, Brazil

Address for correspondence Alicia Del Carmen Becerra Romero, MD, PhD, Departamento de Neurocirurgia, Hospital Cristo Redentor, Grupo Hospitalar Conceição, Rua Domingos Rubbo 20, CEP 91040-000, Porto Alegre, RS, Brazil (e-mail: alicia0204@gmail.com).

Arq Bras Neurocir 2018;37:309–316.

Abstract

Introduction The objective of the present study was to review the epidemiological aspects of malpractice in neurosurgery and to identify preventive measures regarding malpractice for neurosurgeons.

Methods The following terms (alone or in combination) were searched in the PubMed and Biblioteca Virtual em Saúde databases: *neurosurgery* (*neurocirurgia*), *lawsuits* (*ações judiciais*), *malpractice* (*erro médico*), and *litigation* (*litígio*) and identifying studies on these topics published from 2000 to April 2018.

Literature Review In Brazil, 6.9% of the physicians are sued per year. The most common type of malpractice alleged in litigation is negligence. According to the literature, the neurosurgical disease that has sparked the most litigation is spinal disease. The outcomes of these cases vary: sometimes the neurosurgeon prevails, and at other times the plaintiff prevails. To prevent or reduce malpractice claims, the neurosurgeon should take the following precautions: 1. follow medical protocols; 2. perform surgeries in an environment consistent with good medical practice; 3. evaluate and monitor antibiotic prophylaxis; 4. develop a good relationship with the patient based on ethics, good faith and transparency; 5. request the presence of the patient and of his or her family when there is a problem in order to didactically explain the case; 6. keep good medical records to document all of the actions performed (informed consent and description of the surgery and of the pre and postoperative); 7. always seek technical improvement (continuing education/professional development); 8. in the case of attending physicians, monitor patients, treating any postoperative complications; and 9. conduct multidisciplinary team meetings to optimize treatment decisions and to share responsibility for making difficult decisions.

Keywords
- neurosurgery
- lawsuits
- malpractice
- litigation

Resumo

Introdução O objetivo do presente trabalho foi revisar os aspectos epidemiológicos do erro médico em neurocirurgia e identificar as condutas de prevenção quanto ao erro médico para o neurocirurgião.

Métodos Os seguintes termos (isolados ou em associação) foram pesquisados nos bancos de dados PubMed e Biblioteca Virtual da Saúde: *neurosurgery* (*neurocirurgia*),

DOI https://doi.org/10.1055/s-0038-1676527.
ISSN 0103-5355.

lawsuits (*ações judiciais*), *malpractice* (*erro médico*), *litigation* (*litígio*), identificando estudos sobre estes temas publicados de 2000 até abril de 2018.

Revisão de Literatura No Brasil 6,9% dos médicos são processados por ano. O erro médico mais alegado no litígio é a negligência. A patologia espinhal é a doença neurocirúrgica mais litigante encontrada na literatura. O desfecho encontrado foi variado a favor do neurocirurgião ou do reclamante. A fim de evitar ou diminuir as reclamações por erro médico, o neurocirurgião deve adotar os seguintes cuidados: 1. Agir tecnicamente de acordo com os protocolos médicos; 2. Realizar cirurgias em ambiente de acordo com a boa prática médica; 3. Avaliar e monitorizar a profilaxia antibiótica; 4. Desenvolver uma boa relação com o paciente, pautada na ética, boa fé e transparência; 5. Solicitar a presença do paciente e da família diante de um problema para explicar didaticamente o caso; 6. Fazer um bom prontuário médico a fim de documentar todas as ações realizadas (consentimento informado, descrição pré, pós-operatória e cirúrgica); 7. Dedicar-se sempre ao aprimoramento técnico (educação continuada/atualização); 8. Monitorizar o paciente, quando for médico assistente, tratando eventuais complicações no pós-operatório; 9. Realizar reuniões de equipes multidisciplinares para otimizar decisões de tratamento e dividir responsabilidades em decisões difíceis.

Palavras-chave
- neurocirurgia
- ações judiciais
- erro médico
- litígio

Introduction

In the remote antiquity, the practice of medicine was a collection of myths. After this mythic phase, humans began to consider the issue of malpractice. Nineteen hundred years before Christ, Hammurabi, founder of the Babylonian empire, inscribed several laws into his famous code that established fines for incompetent or unskilled doctors.[1] Over time, the legal aspects of the medical profession gained distinction, reaching its maturity with Hippocrates of Kos, who, with his disciples, wrote 120 works, emphasizing at every step the commitment that the physician should make to be faithful to the best traditions of the profession. In ancient Rome, malpractice laws were so severe that the most capable and skilled professionals turned away from medicine for fear of punishment. This exodus reached such extremes that, eventually, only slaves became healers. The richest nobles of the Roman patriciate then began to "import" doctors from Alexandria and Greece.[1]

In modern times, knowledge of the law as it relates to medical care is vital. A perfect professional action is appropriate, fair, and good. An appropriate professional action is one that conforms to the technique that applies to a given situation as determined by the rules of the art (*Lex artis*). For an action to be good, it must have beneficial consequences for those who receive it. For an action to be fair, it must be adequate to satisfy the moral and legal norms of society.[2] Good medical practice is characterized by the balance among scientific knowledge, available technology, and doctor-patient relationship. However, therapeutic failure is not always linked to the behavior of the physician; a causal link between events should be sought, and the causes that may be associated with the failure should be identified.[3] Medicine is not an end but rather a means, as each patient has his or her unique DNA and there is no standard individual response to a single intervention.[4]

Medical error is unintended damage to a patient caused by the action or inaction of the doctor in the exercise of his or her profession. It is different from a complication, which is an event inherent in medical procedures that should be carefully distinguished from malpractice.[5] According to Carvalho et al, combined environmental, psychological, and physiological factors lead to error in the practice of medicine.[6] (►**Fig. 1**)

There are three possibilities for causing harm and making an error: recklessness, incompetence, and negligence.[7] These three features of guilt are classic and are derived from the Roman Law of the Caesars.[1] Negligence consists of not doing what should be done. Recklessness is doing what should not be done. Incompetence is doing poorly what should be done well.[7] Among the concepts elucidated in the Civil and Criminal Codes, incompetence is theoretically the easiest to attribute, and it is very important to consider both the experience and the previous results of the surgeon in the type of procedure analyzed.[5] These features of guilt do not have perfect autonomy and, sometimes, they are intertwined; it is common to encounter recklessness mixed with negligence, incompetence aggravated by recklessness, and so on.[1] It is in the courts that malpractice becomes visible to society, with a lawsuit addressing the effects of the act of commission or omission by part of the professional, the resulting damages, the causal link between the two, and the resulting sentence.[2,3]

Doctors have legal responsibility for malpractice. This responsibility can have criminal, civil, or administrative aspects.[1] The doctor can be judged in two common-law courts: the first court follows the precepts of the Penal and Civil Code; the second, known as the Councils of Medicine, bases its judgments on the Code of Medical Ethics.[8] Responsibility is criminal when the severity of the damage causes disturbance to

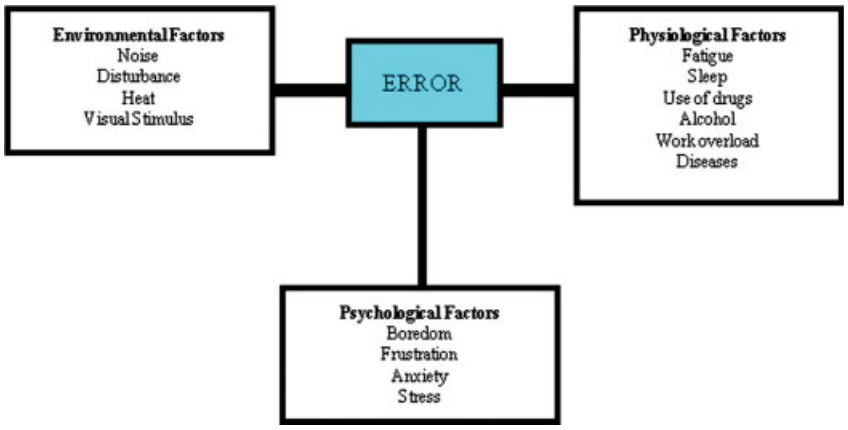

Fig. 1 Factors that lead to error in the practice of medicine.

the social order. Criminal responsibility flows from disturbing the community in a manner that goes beyond the scope of the patient and family. The punishment is a corporal or pecuniary penalty imposed exclusively on the author of the malpractice. In civil liability, the damage has more restricted repercussions, reaching only the patient and his or her family. The sanction is exclusively patrimonial in character and is imposed on the responsible professional and on his or her successors. In administrative liability, the damage has an impact on the reputation of the profession and of the institution the professional represents. The correctional or corrective aspects of this liability are the responsibility of the federal and state Medical Councils; the functional aspects derived from the misconduct of public servants are the responsibility of the government. The penalties are corrective or administrative on a scale ranging from simple censure or reserved warning to dismissal and a ban on engaging in the profession for the benefit of the public.[1]

Malpractice may lead to civil liability claims, leading to reimbursement of the patient for his or her damages.[3] Material damage is understood as physical or aesthetic damage to the patient, whereas moral damage involves the psychological well-being and/or subjective honor of the patient.[3] The effective loss (what was effectively lost) is called emergent damages; reasonable lost earnings are called lost profits. Emergent damages are any type of damages suffered by the patient and/or his or her relatives as the result of medical malpractice. In the estimation of lost profits, the perspective of patient survival plays a preponderant role.[1] For the physician, the costs of a lawsuit can be numerous: the monetary costs and the indirect costs of time, stress, fatigue, depression, increased suicide rates, reduced career satisfaction, and of damage to reputation.[9,10] Ausman states that there is a high incidence of drug and alcohol abuse among physicians who are sued.[11]

The issue of shared blame often occurs in medical teams and hospital services during surgery and hospitalization. It is important to note that the responsibilities of the hospital and of the physician differ. In the general outlines of the Brazilian civil and consumer law, in addition to the member of the medical team whose act caused the damage, the head of the team and the hospital are responsible (at least in principle). The contracting hospital is responsible for wrongful acts committed by resident physicians. Resident status does not exempt the physician from either civil or criminal liability, and the physician is not permitted to argue that he or she was merely following orders from his or her superior. The head physician is also responsible.[2]

An analysis of the number of claims filed in the State Courts of Justice and the Superior Court of Justice (STJ, in the Portuguese acronym) points to the exponential growth of malpractice suits in Brazil both in the courts and in the Regional Councils of Medicine.[12] The likelihood of being sued for malpractice varies by specialty.[9] Since 1950, neurosurgery has developed a technical arsenal with increased sophistication and less invasive methods to reduce the surgical risk of unexpected events, while certain procedures remain challenging.[13] The neurosurgeon works with delicate human structures and is therefore considered risky by insurance companies.[9,13–15]

Objectives

General

Review the literature on medical malpractice in neurosurgery.

Specific

1) Review the epidemiological aspects of malpractice: identify the most commonly alleged type of malpractice in litigation, the most common neurosurgical disease involved in litigation, and the most common outcome of litigation.
2) Identify preventive measures that neurosurgeons can take to avoid malpractice.

Methodology

The following terms (alone or in combination) in English and in Portuguese were searched in the PubMed and Biblioteca Virtual em Saúde databases: *neurosurgery* (*neurocirurgia*), *lawsuits* (*ações judiciais*), *malpractice* (*erro médico*), and *litigation* (*litígio*). In addition, the relevant published literature on the subject from 2000 to April 2018 was identified. Additional articles or books on the subject were identified in the references of the articles found. After reading the articles, 28 bibliographical references were included in the present study.

Literature Review

Each year in Brazil, 6.9% of the physicians are sued.[7] According to a survey by the Medical Union of Rio Grande do Sul, one in five doctors in the state has a civil or criminal lawsuit in progress related to alleged malpractice.[16]

The probability of legal action for malpractice varies among the various specialties.[9] The cumulative risk of facing a medical malpractice suit by age 65 is 75% for physicians in low-risk specialties (family medicine, pediatrics, and psychiatry) and 99% in high-risk specialties (neurosurgery, thoracic surgery, cardiovascular surgery, and general surgery). All doctors in high-risk specialties will face at least one lawsuit during their careers, although only a minority will be ordered to pay damages.[9] Neurology and neurosurgery are identified as high-risk specialties for lawsuits in the literature of various countries.[9,15,17–21] High-risk specialties treat patients with acute medical problems that require rapid decision-making and may have unfavorable outcomes. They usually rely on procedures that can be the subject of detailed analysis later on.[17] The acute decision-making that must be made to treat a patient, the small margin of error, and the potential adverse outcome are some of the reasons why neurosurgery is considered a high-risk specialty.[17]

Why has there been an Increase in the Number of Lawsuits for Medical Malpractice?

The increase in malpractice lawsuits in Brazil is due to several factors, including the following:

1) Patients who are more informed, more demanding, and less tolerant.[8,12,22]
2) Greater access to the justice system.[7,12] The expectation of risk-free gain (and free legal aid) encourages many individuals to go to court.[16]
3) Decreased quality of medical care due to the lack of infrastructure and to the large number of patients per doctor in certain services, along with a decline in physician/specialist training.[2,8,12]
4) The need by the part of the patients to "find" a culprit because of their health problem or treatment failure, not considering that the obligation of the physician is the means, not the result.[12] The patient confuses the nonfulfillment of their expectations with malpractice.[2]
5) The existence of a compensation "industry".[12,22]

According to Quintana, although an unsatisfactory outcome alone can lead to a lawsuit, usually there is a relation between outcome and dissatisfaction with a doctor, hospital, or institution.[23]

According to Nahed et al, malpractice litigation has risen because there is an increasing sense that physical well-being can be controlled and even improved.[17] According to these authors, there are three major reasons for the increased number of malpractice cases since 1840 in the United States. First, as medical advances have improved health, the unanticipated side effects of treatments have become a fertile ground for litigation. Second, organizations have developed training and practice standards, and physicians can be evaluated in terms of whether they have deviated from these standards. Finally, the advent of malpractice insurance has led to the establishment of the malpractice litigation as a recognized legal instrument.[17]

The high incidence of lawsuits in the United States can also be explained by the high incidence of lawyers, representing 80% of the population of lawyers in the world.[11]

According to Rovit et al, most of the 280 cases against the Medical Liability Mutual Insurance Company (MLMIC) of New York from 1999 to 2003 that they analyzed involved spinal disease and did not result in a payment at the end of the process.[14] According to their study, the chances of being sued for malpractice are not necessarily related to the medical complexity of a particular case, but are more often related to the type of case in which the physician is involved. In this study, elective spinal surgeries constituted the majority of litigations.[14]

In the study by Fager of 275 malpractice claims, spinal surgery was involved in 42% of those claims, most of which related to lumbar surgeries.[24] In lumbar spinal surgery, the largest number of complaints were due to poor indication, inappropriate surgery, increased pain/deficit, lumbar failure syndrome, cauda equina/nerve root damage after surgery, and operation at the wrong level. Trauma and intracranial surgery also sparked litigation. Some trauma patients underwent neurosurgery but were left with significant deficits that formed the basis of their claims, many of which were unmeritorious. In 15% of the cases, failure to diagnose aneurysms, arteriovenous malformation, sentinel bleeds, and other brain injuries were the cause of litigation.[24] The defensible cases relied on evidence that the defendant exercised the degree of judgment, skill, and care expected from an average neurosurgeon.

According to the American and British literature, neurosurgeons have more exposure to litigation than doctors in any other specialty.[18,19] According to Taylor, lawsuits occur most commonly after spinal surgery (improper performance, wrong level operated on, unindicated procedure), followed by clinical management (misdiagnosis, failure to monitor a patient), and cranial surgery (misdiagnosis, improper performance).[18] Cases involving claims of failure to monitor a patient in which the physician did not visit the patient, delegated the task to an assistant during hospitalization, and problems later arose. The number of treated cases, instead is related to the type of surgery, in case spinal surgery compared to cranial. Taylor explains this finding by stating that, in cranial surgery, the patient typically already has a preoperative deficit and therefore is more willing to accept postsurgical neurological dysfunctions.[18] Taylor also states that the patient/family perceives cranial surgery as having an inherent risk, while in spinal surgery, a good outcome is always expected. Indemnity values were the highest in cranial surgery, followed by clinical management and spinal surgery.[18] Damage to the spinal cord is considered the most powerful predictor of litigation. Higher payments were made for serious permanent damage than for deaths.

In a study on jury verdicts and settlements related to malpractice in neurosurgery between 1985 and 2015,

Thomas et al identified 343 cases.[25] The decision was in favor of the neurosurgeon in 165 cases (48.1%) and in favor of the plaintiff in 93 cases (27.1%). A settlement was possible in 81 cases. The most common procedures related to claims were spinal surgery, in 199 cases (58%), general neurosurgery, in 54 cases (15.7%), and cerebrovascular disease, in 38 cases (11.1%). The most common causes for litigation were procedural error (45.5%; for example, surgery on the wrong side, failure to monitor hemodynamic status intraoperatively, inadvertent vessel rupture during an endovascular procedure, and spinal surgery performed at the wrong level) and failure to diagnose (41.4%) or treat (42.9%). In this study, failure to diagnose or treat was associated with higher average payouts. The decision was in favor of the plaintiff most often in diseases involving general neurosurgery, such as removing subdural hematomas and placing external ventricular drains. The highest payouts in favor of the plaintiff were associated with pediatric and cerebrovascular cases. The age of the pediatric patient and the length of remaining life impact the compensation values for both economic and noneconomic damages (pain and suffering). The authors of the present study found that the more severe the harm is, the more likely the verdict will be in favor of the plaintiff.[25]

In a study on malpractice in neurosurgery using the America Data Sharing Project of the American Physician Insurers Association between 2003 and 2012, Elsamadicy et al identified 2,131 cases of medical malpractice against neurosurgeons.[26] Improper performance of surgery on the spinal column (spinal disc disease, spinal column/spinal canal) was the most common litigation claim.

In the study by Mukherjee et al from 2004 to 2013, 42 claims in neurosurgery were identified: 28 in spinal surgery, 13 in cranial surgery, and 1 in peripheral nerve surgery.[19] The major cause of claims was faulty surgical technique in claims involving spinal surgery and a lack of information in claims involving cranial surgery. The highest payments involved claims against faulty surgical technique and a lack of information. In this study, the mean time between the clinical event and the claims was 664 days.[19] For this reason, the authors emphasize the importance of thorough documentation/records in reducing the risk of litigation.

A retrospective national analysis of neurology and neurosurgery using the National Health Service Litigation Authority (NHSLA) database between 1995 and 2012 found 423 successful lawsuits in England and Wales, 267 (63.1%) of which were against neurosurgeons, with diagnostic error/delay being the most common cause of a claim.[15] The second most common cause of litigation was negligence in performing the procedure; 36% of these claims involved either wrong-site surgery or a foreign body left during the procedure. Diseases resulting in the largest number of verdicts in favor of the plaintiffs were spinal disease ($n = 118$), cerebrovascular disease ($n = 60$), intracranial tumors ($n = 46$), hydrocephalus ($n = 21$), and neuromuscular disease/neuropathy ($n = 18$).[15] The median litigation payout was higher in neurosurgery than in neurology. The locations where these patients were seen included hospitalization wards ($n = 167$), surgical centers ($n = 121$), outpatient clinics ($n = 86$), and emergency rooms ($n = 30$).

Another study on NHSLA data between 2002 and 2012 related only to neurosurgery found different and larger numbers, with 794 lawsuits, 405 (66%) of which resulted in verdicts in favor of the plaintiffs.[10] Surgical spinal diseases (more specifically, lumbar degenerative disease) represented the most common disease in litigation, but cranial (vascular) cases resulted in higher payouts. Most claims were related to improper surgical performance (29%), delayed management/surgery (24%), diagnostic error (16%), and inadequate preoperative care (14%). Emergency-related cases resulted in higher payouts than elective pathologies.[10] Lawsuits related to wrong-site surgery and cauda equina syndrome were more frequently successful.[10]

Again, similar to other authors, in the British study by Steele et al, the largest number of claims involves spinal surgery.[20] Lawsuits related to cranial surgery involved delayed diagnosis (29%) and treatment (24%). In contrast, lawsuits related to spinal surgery involved delayed diagnosis (32%) and surgical negligence (22%).

According to a French study of 115 lawsuits over 10 years, 81 were related to spinal surgery and 34 to cranial surgery.[13] The five main complaints were surgical site infection (37%), technical error (22%), lack of information (14%), delayed diagnosis (11%), and lack of supervision (9%). In cranial surgery, the three main complaints (in descending order) were 1) lack of information, 2) surgical site infection, and 3) technical error. In spinal surgery, the main complaints were 1) infection at the surgical site (spondylodiscitis after surgery for herniated disc/fusion for lumbar stenosis), 2) technical error, and 3) delayed diagnosis.[13]

A Chinese study conducted with hospital data from 2006 to 2012 identified 57 cases of malpractice related to cranial surgery and only 3 cases related to spinal surgery.[27] Lack of information (40%) was a main cause of claims, followed by technical error (16.7%), lack of supervision (15%), delayed diagnosis (10%), therapeutic risk (8.3%), local surgical infection (6.7%), and defects in implanted devices (3.3%).[27] This study found that the number of lawsuits decreased after the hospital was accredited by the Joint Commission International, which reflects the commitment of the hospital to care, patient safety, and medical quality.[27]

In the study by Nagashima et al of a database disclosed by the courts from 2001 to 2015, there were 38 lawsuits for malpractice against neurosurgeons (9.2%), 26 of which were for negligence.[21] Twenty-six claims were in favor of the plaintiff, and they involved negligence in diagnosis ($n = 4$), clinical judgment ($n = 3$), technical skills ($n = 5$), clinical management ($n = 7$), and informed consent ($n = 7$). The main diseases associated with these cases were subarachnoid hemorrhage ($n = 8$), unruptured aneurysm ($n = 11$), arteriovenous malformation ($n = 2$), and cerebral ischemic lesions ($n = 6$). The authors did not report claims against neurosurgeons involving spinal diseases and explained this difference from other reports in the literature by the fact that spinal diseases in Japan are less often treated by neurosurgeons.[21]

In Brazil, according to the STJ, 260 malpractice lawsuits were filed in 2010, a number that increased to 626 in 2014.[7] Only a portion of all lawsuits filed in Brazil reach the STJ, which is the court of last resort for appeals. The STJ is a special court designed to standardize the understanding of federal legislation. Therefore, not all claims reach the STJ. For a claim to be heard by the STJ, it is necessary that a federal law to have been broken or not followed, that a state court to have applied a local law in detriment to a federal law, or that a state court to have interpreted a federal law in a manner different from that of another court.[28] The state of Rio de Janeiro is first in the number of malpractice appeals to the STJ (25.69%), followed by São Paulo (19.27%), Rio Grande do Sul (15.92%), Paraná (6.7%), Minas Gerais (6.14%), Santa Catarina (5.3%), Distrito Federal (3.91%), Rio Grande do Norte (2.23%), Bahia (1.39%), Espírito Santo (1.39%), Pernambuco (1.39%), Mato Grosso (1.12%), Ceará (0.83%), Mato Grosso do Sul (0.83%), Paraíba (0.83%), Piauí (0.83%), Rondônia (0.83%), Roraima (0.83%), Acre (0.56%), Goiás (0.56%), Pará (0.56%), Sergipe (0.56%), Tocantins (0.56%), Alagoas (0.27%), Amazonas (0.27%), and Maranhão (0.27%).[28] Of the cases that reached the STJ, 59.35% of the plaintiffs were female and 40.65% were male, and 46% of the defendants were legal entities (hospitals, clinics, health centers, health insurance operators, or public authorities). The top five specialties with claims in the STJ were obstetrics and gynecology (27.14%), traumatology and orthopedics (15.71%), plastic surgery (10%), general surgery (10%), and neurosurgery (7.14%). The STJ fully or partially compensated the plaintiff in only 20.51% of the cases. In 81.25% of the claims that resulted in a full or partial award, the value of the payout was increased. Death resulted in the highest number of claims, with 28.16%, followed by aesthetic damages (12.67%), a need for new surgical procedures (11.26%), a loss of organ or function (11.26%), tetraplegia (8.45%), permanent sequelae (7.04%), neurological sequelae (7.04%), blindness (4.22%), motor sequelae (4.22%), foreign bodies left inside the patient during surgery (2.81%), false positive diagnosis for cancer (2.81%), and HIV contamination in a blood transfusion (1.4%).[28]

According to Gomes et al, in the database of the Federal District Court (TJDFT, in the Portuguese acronym), from 2013 to 2015, 202 civil and criminal cases involving malpractice were identified, 97% of which were judged by the Common Court and 3% of which were judged by special courts (less complex claims that do not exceed 40 times the minimum wage).[3] Of these cases, 53% involved material and moral damages, 46% involved moral damages, and 1% involved material damages. The specialties with the largest number of cases were obstetrics and gynecology, general surgery, and plastic surgery. Neurosurgery had 10 lawsuits in the TJDFT (4.95%). The defendants worked in the private sector (51%), in the public sector (44%), and as individuals (5%). The option to sue the employer of a medical professional is a way to guarantee more robust indemnification. It is certain that once convicted, the company will sue its employee, the doctor, to receive reimbursement for the costs of the lawsuit, of the legal fees, and of the payment of the indemnification. Regarding the outcome, 57% of the cases were unfounded, 22% were well-founded, 19% were partially founded, and 2% were dismissed.[3]

In the study by Koeche et al on claims made in the Regional Council of Medicine of Santa Catarina from 2005 to 2009, 122 doctors were found liable, 21 of whom were found to have violated the code of medical ethics.[4] The most reported specialties in absolute numbers were gynecology and obstetrics (16%), anesthesiology (8.2%), and orthopedics/traumatology (4%).[4] Taking into account the proportional number of doctors in the specialty, the order changes, with the first three being thoracic surgery, surgery on the digestive system, and anesthesiology. The most commonly reported type of malpractice was negligence (39%), recklessness (8%), incompetence (4%), and a combination thereof (49%). Among the several factors analyzed in this study, surgical medicine was the most influential factor for a guilty verdict, with odds 4.2 times higher than for clinical medicine. Koeche et al state that surgical procedures are more prone to adverse events and generate more serious consequences that are more easily perceivable and verifiable. With respect to training time, the majority of convicted doctors had from 11 to 20 years of training. After practicing for more than 10 years, doctors experience a false sense of security, tend to stop reading the medical literature, and require greater financial compensation, resulting in a greater exposure to risk. Another relevant factor observed is that receiving a complaint involving more than one type of wrongdoing increased the chances of conviction.

In a study on malpractice with data from the Regional Council of Medicine of Goiás from 2000 to 2006, Fujita et al identified 2,293 claims, 62% of which alleged professional incompetence (dissatisfaction with the results of the treatment, death, and diagnostic error) and an inadequate doctor-patient relationship (poor care and negligence).[22] Neurologists and psychiatrists (data presented together in this study) received 104 complaints. Of the total complaints, 1,967 were investigated, 698 of which became ethical claims. Of the ethical claims judged through the end of the study, 200 doctors were acquitted and 119 doctors were convicted, with the greatest penalty being a confidential warning.[22]

The study by Bitencourt et al on malpractice using the database of the Regional Medical Council of Bahia from 2000 to 2004 found 372 physicians who had received complaints; 159 of those complaints were for malpractice, and 23 were found guilty.[8] The most reported specialties were gynecology and obstetrics (24%), general surgery (9%), and anesthesiology (7%). The public and surgical environment had the most complaints. The most commonly alleged type of malpractice was negligence (67%), but recklessness resulted in the highest number of convictions. The most common penalties were official public and private censures, which were imposed in 68% of the cases.[8]

What are the Possible Preventative Measures?

A court summons for malpractice strongly impacts the personal and social life of a doctor and affects the relationship of trust between the population and doctors. The circumstances involved in the decision of the patient to

initiate a claim are multifactorial, interrelated, and interdependent. Therefore, recommendations to increase patient safety and reduce errors should include a variety of strategies.

Good risk management is essential to limit litigation in neurosurgery.[19] According to the researched literature, in order to avoid or reduce malpractice complaints, the neurosurgeon should take the following precautions[12]:

1) Follow medical protocols/check lists.[5,9,10,13,25,27]
2) Perform surgeries in an environment consistent with good medical practice.[4,13]
3) Evaluate and monitor antibiotic prophylaxis.[10,13]
4) Develop a good relationship with the patient based on ethics, good faith and transparency[4,8]; when seeking authorization for a procedure, give the patient and his or her family time to reflect.
5) When there is a problem, ask for the presence of the patient and, if applicable, of his or her family in order to explain the case in a timely manner (provision of information).[2] Anatomical drawings and models may also be used.[27] Even if it is not expressed directly as a complaint, a lack of information may be the triggering event for a lawsuit, and it becomes the responsibility of the surgeon to prove that the relevant information has been provided. Use clear, simple, concise, and understandable terms[10,13]; it is equally important, when appropriate, to discuss nonsurgical management with the family.[19]
6) Keep good medical records to document all the actions performed (informed consent, clinical signs and symptoms, and description of the surgery and of the pre- and postoperative protocols).[10] Medical records are important evidence in a lawsuit.[8] The informed consent form is of vital importance and should include the proposed treatment and the potential risks, benefits, and alternatives, including in cases of emergency.[4,10,13,19,21] However, Oliveira excludes urgent cases in which obtaining informed consent could create a risk of the loss of life or of irreversible physical damage.[2] Quintana states that informed consent is a critical aspect of medical responsibility.[23] It is a medical act with instructions that can generate responsibilities. Hamdan et al emphasize that the time spent on these prophylactic measures is insignificant compared with the time spent on a lawsuit.[10] Ferraz states that court representatives have considered the absence of informed consent to be medical negligence.[5] Remember that the medical record is the story of the doctor.[11]
7) Be dedicated to technical improvement (continuous education/professional development).[4,8]
8) In the case of assistant physicians, monitor the patient, treating eventual postoperative complications.[13]
9) Conduct multidisciplinary team meetings to optimize treatment decisions and share responsibilities in difficult decisions.[8,10]

In addition, as a strategy to prevent malpractice, many neurosurgeons practice defensive medicine, requiring additional imaging studies (72%), laboratory tests (67%), referral of patients to consultants (66%), or prescribing of medications (40%); 45% of neurosurgeons eliminated high-risk procedures (cranial and spinal trauma, intracranial hemorrhage, tumor resection, and hydrocephalus) from their medical practice, according to a survey of 1,028 members of the American Association of Neurological Surgeons.[17] In addition, 71% of the neurosurgeons have indicated that the malpractice environment has affected their decision about how long they will continue to practice the specialty. In that study, 41% of the neurosurgeons reported at least one lawsuit during their career.[17]

What should a Neurosurgeon do in the Event of a Lawsuit?

It is important to understand that each case is unique. In each situation, therefore, the defense must translate the technical issue into lay terms for the court, demonstrating that there was no malpractice.[16] Physicians must defend themselves and participate in their defense.[11]

If a lawsuit or ethical complaint is filed, the physician must observe the following procedure:[12]

1) Examine the full case by studying the medical records;
2) Conduct research in the medical literature to explain why their conduct was correct;
3) Meet procedural deadlines (the defense deadline is 15 days in the judiciary and 30 days in the Regional Medical Council);
4) Find a lawyer who specializes in medical law.

Nahed et al propose various models to respond to the malpractice crisis, such as the following: 1) physician disclosure of medical error; 2) health courts, which would be specialized courts with judges trained in medical care, which would limit the number of frivolous claims; and 3) the implementation of patient indemnity insurance to protect patients from personal losses resulting from medical interventions.[17]

Conclusions

The probability of a neurosurgeon being sued for malpractice in neurosurgery in the United States and in Great Britain is higher than that in Brazil, but the number of cases in Brazil has increased progressively in recent years, now accounting for 7.14% of the lawsuits filed in the STJ. There are specific publications on malpractice in neurosurgery in the international literature, but the Brazilian literature is nonexistent on this topic; nevertheless, there have been studies on malpractice claims in the Regional Medical Councils.

The most commonly alleged type of malpractice in litigation is negligence. According to the literature, spinal disease is the neurosurgical disease associated with the largest number of claims. The outcome varied in favor of the neurosurgeon or the plaintiff depending on the association between various factors, including claims involving more than one type of error, aggravation of the problem of the plaintiff postsurgery, and wrong-site surgery; these types of cases tend to resolve in favor of the plaintiff.

In the practice of their profession, doctors have a duty to treat, to use available means, and to comfort, but they are not obliged to cure. A better understanding of the underlying causes of malpractice may help the neurosurgeon to decrease the risk of litigation and improve patient safety. The physician must take the following preventive measures: act according to established protocols, develop a good doctor-patient relationship, record all activities in the medical record, and seek continuing technical updates.

"The only one who never makes mistakes is the one who never does anything." – Franklin Roosevelt.

References

1 Moraes NC. Erro médico: aspectos jurídicos. Rev Bras Cir Cardiovasc 1996;11(02):55–59
2 Oliveira MMR. Erro médico - visão jurídica. In: Epiphanio EB, Vilela JRPX, editores. Perícias médicas, teoria e prática. Rio de Janeiro: Guanabara-Koogan; 2009:315–27
3 Gomes TR, Delduque MC. O erro médico sob o olhar do judiciário: uma investigação no Tribunal de Justiça do Distrito Federal e Territórios. Cad Ibero-Amer Dir Sanit 2017:72–85
4 Koeche LG, Cenci I, Bortoluzzi MC, Bonamigo EL. Prevalência de erro médico entre as especialidades médicas nos processos julgados pelo Conselho Regional de Medicina do Estado de Santa Catarina. Arq Catarin Med 2013;42(04):45–53
5 Ferraz EM. Complicação ou erro médico. Rev Col Bras Cir 2006;33 (04):205–206
6 Carvalho M, Vieira AA. Erro médico em pacientes hospitalizados. J Pediatr 2002;78(04):261–268
7 Herling C. Evitar erros médicos e processos só depende de você. SBN Hoje 2016;23:15–17
8 Bitencourt AGV, Neves NMBC, Neves FBCS, Brasil ISPS, Santos LSC. Análise do erro médico em processos éticos-profissionais: implicações na educação médica. Rev Bras Educ Med 2007;31(03):223–228
9 Jena AB, Seabury S, Lakdawalla D, Chandra A. Malpractice risk according to physician specialty. N Engl J Med 2011;365(07):629–636
10 Hamdan A, Strachan RD, Nath F, Coulter IC. Counting the cost of negligence in neurosurgery: Lessons to be learned from 10 years of claims in the NHS. Br J Neurosurg 2015;29(02):169–177
11 Ausman JI. Medico-legal aspects of neurosurgical practice. Surg Neurol 2003;59(05):345–347
12 Bianchi F. Crescimento das ações judiciais e reclamações éticas contra médicos. O Estadão. Atualizado 21 outubro 2017. Disponível em: http://politica.estadao.com.br/blogs/fausto-macedo/crescimento-das-acoes-judiciais-e-reclamacoes-eticas-contra-medicos/. Accessed in May 13, 2018.
13 Emery E, Balossier A, Mertens P. Is the medicolegal issue avoidable in neurosurgery? A retrospective survey of a series of 115 medicolegal cases from public hospitals. World Neurosurg 2014;81(02):218–222
14 Rovit RL, Simon AS, Drew J, Murali R, Robb J. Neurosurgical experience with malpractice litigation: an analysis of closed claims against neurosurgeons in New York State, 1999 through 2003. J Neurosurg 2007;106(06):1108–1114
15 Coysh T, Breen DP. A nationwide analysis of successful litigation claims in neurological practice. JRSM Open 2014;5(03):2042533313518914
16 Pacheco F, Bueno R. O fantasma do erro médico. Vox Médica 2016; 71:8–11
17 Nahed BV, Babu MA, Smith TR, Heary RF. Malpractice liability and defensive medicine: a national survey of neurosurgeons. PLoS One 2012;7(06):e39237
18 Taylor CL. Neurosurgical practice liability: relative risk by procedure type. Neurosurgery 2014;75(06):609–613, discussion 613
19 Mukherjee S, Pringle C, Crocker M. A nine-year review of medicolegal claims in neurosurgery. Ann R Coll Surg Engl 2014;96 (04):266–270
20 Steele L, Mukherjee S, Stratton-Powell A, Anderson I, Timothy J. Extent of medicolegal burden in neurosurgery - An analysis of the National Health Service Litigation Authority Database. Br J Neurosurg 2015;29(05):622–629
21 Nagashima H, Wada Y, Hongo K. Trend of Malpractice Litigation against Neurosurgeons in Japan: an analysis of disclosed database by Courts in Japan from 2001 through 2015. Neurol Med Chir (Tokyo) 2017;57(08):426–432
22 Fujita RR, Santos IC. Denúncias por erro médico em Goiás. Rev Assoc Med Bras (1992) 2009;55(03):283–289
23 Quintana LM. Let's focus on preventive strategies: about medical-legal aspects in neurosurgery. World Neurosurg 2014;81(02):240–241
24 Fager CA. Malpractice issues in neurological surgery. Surg Neurol 2006;65(04):416–421
25 Thomas R, Gupta R, Griessenauer CJ, et al. Medical malpractice in neurosurgery: a comprehensive analysis. World Neurosurg 2018; 110:e552–e559
26 Elsamadicy AA, Sergesketter AR, Frakes MD, Lad SP. Review of neurosurgery medical professional liability claims in the United States. Neurosurgery 2018;83(05):997–1006; [Epub ahead of print] Doi: 10.1093/neuros/nyx565
27 Zhang ZY, Yao Y, Zhou LF. To err is human–medicolegal issues and safe care in neurosurgery. World Neurosurg 2014;81(02):244–246
28 Canal R. Decisões sobre erro médico no STJ. Anadem Website. Atualizado 15 abril 2015. Availabe at: http://andadem.org.br/site/decisoes-sobre-erro-medico-no-stj/. Accessed in June 26, 2018