

## Is the Medicolegal Issue Avoidable in Neurosurgery? A Retrospective Survey of a Series of 115 Medicolegal Cases from Public Hospitals

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■ **OBJECTIVE:** Since the mid-1950s, neurosurgery has benefited from the remarkable progress due to tremendous advances in neuroimaging techniques, neuroanesthesia, neurostimulation, and brain–computer interfaces, as well as breakthroughs in operating microscopes and surgical instruments. Yet, this specialty has to do with delicate human structures and is hence considered as highly risky by insurance companies. In France, although neurosurgery’s casualty rate (6%) is lower than in other specialties, the number of legal prosecutions has increased since 2002 because of easier access to medicolegal procedures. In order to avoid patients’ resorting to the law courts, it becomes necessary to clearly identify the risk factors.

■ **METHODS:** From the data bank of the insurer Société Hospitalière d’Assurances Mutuelles (SHAM, main insurance company for public hospitals in France), we retrospectively analyzed 115 files (34 cranial and 81 spinal surgeries) covering the period 1997–2007 for the reasons for complaints against French neurosurgeons working in public hospitals.

■ **RESULTS:** Five main causes were identified: surgical site infection (37%), technical error (22%), lack of information (14%), delayed diagnosis (11%), and lack of supervision (9%).

■ **CONCLUSION:** Some causes are definitely avoidable at no cost to the hospital. Besides basic preventive safety procedures, we reiterate the mandatory steps for a good defense when being prosecuted. The evolution of patients’

attitudes toward medical institutions observed in most countries has forced surgeons to adapt their practice. In this context, a common action certified by learned societies on sustainable health care quality, patient safety, and respect of good practices appears as the golden path to maintain a favorable legal, insurance, and financial environment.

### • Peer-Reviewed Article

#### INTRODUCTION

Neurosurgery has made dramatic advances in the last 50 years. In fact, it is worth remembering that some people saw this emerging discipline in the early twentieth century—at the time of the pioneers—as “a sort of polite way of committing suicide” (2). This progress was due to impressive changes made in modern neuroradiology, neuroanesthesia, and neurophysiology, not to mention the huge contribution of technological tools that have now become indispensable, such as the operating microscope, neuronavigation, and neurostimulation devices. However, this discipline is still considered risky as complications can cause serious damage (neurologic deficiency, cognitive impairment affecting quality of life or life expectancy). At the same time, society has changed because of the significant influx of information from new media such as the Internet, and the critical demands of the patient who has become a consumer willing to be actively involved in the decision-making process concerning his or her health care, but not hesitating to take recourse to legal action in the case of a serious adverse postoperative event or simply

#### Key words

- Informed consent to care
- Lawsuits
- Malpractice
- Medicolegal
- Neurosurgery
- Quality of care

#### Abbreviations and Acronyms

**CLIN:** Comité de Lutte contre les Infections Nosocomiales

**MMR:** Morbidity and mortality review

**NHA:** National Healthcareer Association

**RCCC:** Regional Commission for Conciliation and Compensation

**SHAM:** Société Hospitalière d’Assurances Mutuelles

**SSI:** Surgical site infection



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Citation: *World Neurosurg.* (2014) 81, 2:218-222.  
<http://dx.doi.org/10.1016/j.wneu.2013.01.029>

Journal homepage: [www.WORLDNEUROSURGERY.org](http://www.WORLDNEUROSURGERY.org)

Available online: [www.sciencedirect.com](http://www.sciencedirect.com)

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dissatisfaction. As each complaint directly impacts the insurance cost borne by the hospital, the challenge is as much about safety as the quality of care given to the patient (4, 13, 15, 16).

With regard to this societal evolution, French neurosurgeons are actively involved in compliance with accreditation procedures under the patronage of the National Healthcareer Association (NHA) in order to ensure safety and quality of care, and to improve relationships with insurers. However, the impact of medicolegal has steadily increased over the past 10 years—in all specialties—and particularly since the establishment of the Regional Commission for Conciliation and Compensation (RCCC) in 2002, allowing the patient to get easy and free legal assistance. The medicolegal implication in neurosurgery is currently estimated at 6% in France (20), which is relatively low compared to other medical and surgical disciplines. Yet, identifying the risk-prone events would help issue guidance recommending preventive measures. Such improvements in practices could ultimately limit insurance premiums. We retrospectively analyzed a series of records from the database provided by the insurer of French public hospitals (Société Hospitalière d'Assurances Mutuelles [SHAM]) with the aim of outlining potentially preventable complications.

## MATERIAL AND METHODS

After we were granted permission by SHAM (mutual-type French insurance company specializing in hospital risk) to access their files, we made a retrospective analysis of a series of consecutive folders labeled “neurosurgery,” without any indication as to the identity of the patient, the doctor, and the hospital. The study focused on cases that were treated between 1997 and 2007 and were legally closed (the judgment having been given and the claims paid out by the insurer). Neither the type of procedure (criminal remedies, recourse to the court, RCCC) nor the amount of compensation that was granted by the insurer was retained as a criterion. Cases settled amicably were excluded from the database in this study. The following entries were extracted: the type of surgery (cranial or spinal), whether the surgery was scheduled or an emergency, the nature of the complaint from the legal point of view (delayed diagnosis, technical error, lack of organization, lack of supervision, surgical site infection [SSI], lack of information, symptom error), and the court's decision (guilty or not). We looked for the nature of the events triggering the medicolegal procedure along with the nature of the malpractice complained about. Avoidable circumstances were therefore outlined by comparison with data in this domain.

## RESULTS

Over the period 1997–2007, 135 consecutive cases labeled “neurosurgery” were singled out. Twenty cases were excluded because of the following reasons: file found not to be under the theme “neurosurgery,” incomplete data. Among the 115 usable records, 34 cases were filed under the cranial theme, while 81 involved spinal surgery (Table 1). It should be noted that in a few cases multiple charges were filed; for the remainder of this study, we will only consider the main charge that led to a conviction.

Analysis of records on cranial surgery produced the following: out of 34 cases (33 guilty, 1 acquitted), 5 delayed diagnoses were noted. They were delayed diagnosis of hydrocephalus (1 case), a

**Table 1.** Distribution of the Main Medicolegal Judgments According to the Surgical Subspecialty (Cranial or Spinal Surgery)

Judgment	Cranial Surgery (cases)	Spinal Surgery (cases)	Total (%)
Delayed diagnosis	5	8	11
Technical error	6	19	22
Lack of organization	2	0	2
Lack of supervision	4	6	9
Surgical site infection	6	37	37
Lack of information	10	6	14
Symptom error	0	1	1
Therapeutic risk	1	4	4

valve dysfunction (2 cases), syringomyelia (1 case), and blindness secondary to intracranial hypertension not being diagnosed in time (1 case). Technical error was detected in 6 cases: a drain was misplaced in the brain during the evacuation of a subdural hematoma resulting in a nonreversible neurologic deficiency (1 case), blindness or lesion of the optic nerves after meningioma or pituitary surgery (2 cases), and 3 cases of misdiagnosis. Lack of organization was found in 2 cases (implantable medical device or equipment not available or not sterilized, facial burns caused by iodized alcohol for antisepsis of the cranial scar). Lack of supervision was detected in 4 cases (neurologic deficiency or death due to bleeding complications at or distant from the surgical site). Conviction for SSI, that we decided to single out from the heading lack of organization, was found in 6 cases (including one death by postoperative meningitis). Lack of information on operational risks was identified in 10 cases. Finally, no fault was found in 1 case (therapeutic risk): severe consequences for an infant with craniosynostosis surgery who suffered from bronchospasm after general anesthesia.

The analysis of records filed under the spinal theme was as follows: out of the 81 cases, delayed diagnosis, seen as a loss of chance, was found in 8 cases. These were syndromes of cauda equina from a herniated disc or persistent sciatica related to a large residual disc fragment. Technical error was detected in 19 cases. These were misplacement of a screw (4 cases), lumbar hernia surgery on the wrong disc (7 cases), root lesion (5 cases), and nonresected hernia (1 case). One case of a wound to the iliac artery after disc surgery and 1 case of persistence of a metallic agent (foreign body within the disc space) were also reported. Lack of supervision was identified in 6 cases. Conviction for SSI was made in 37 cases: spondylodiscitis after disc surgery (32 cases) or after surgery of lumbar stenosis and fusion (3 cases), 1 case of post-transfusion hepatitis, and 1 case of infection after intraspinal neurinoma surgery at C5. Lack of information on the risks of surgery was found in 6 cases. There was 1 case of symptom error. Finally, no error was found in 4 cases under miscellaneous causes (therapeutic risk).

Of all judgments passed for neurosurgical activity, SSIs account for 37% of procedures, technical error 22%, lack of information

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