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Original article

Survey of French spine surgeons reveals significant variability in spine trauma practices in 2013

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ABSTRACT

Background: In France, attempts to define common ground during spine surgery meetings have revealed significant variability in clinical practices across different schools of surgery and the two specialities involved in spine surgery, namely, neurosurgery and orthopaedic surgery.
Objectives: To objectively characterise this variability by performing a survey based on a fictitious spine trauma case. Our working hypothesis was that significant variability existed in trauma practices and that this variability was related to a lack of strong scientific evidence in spine trauma care.
Methods: We performed a cross-sectional survey based on a clinical vignette describing a 31-year-old male with an L1 burst fracture and neurologic symptoms (numbness). Surgeons received the vignette and a 14-item questionnaire on the management of this patient. For each question, surgeons had to choose among five possible answers. Differences in answers across surgeons were assessed using the Index of Qualitative Variability (IQV), in which 0 indicates no variability and 1 maximal variability. Surgeons also received a questionnaire about their demographics and surgical experience.
Results: Of 405 invited spine surgeons, 200 responded to the survey. Five questions had an IQV greater than 0.9, seven an IQV between 0.5 and 0.9, and two an IQV lower than 0.5. Variability was greatest about the need for MRI (IQV = 0.93), degree of urgency (IQV = 0.93), need for fusion (IQV = 0.92), need for post-operative bracing (IQV = 0.91), and routine removal of instrumentation (IQV = 0.94). Variability was lowest for questions about the need for surgery (IQV = 0.42) and use of the posterior approach (IQV = 0.36). Answers were influenced by surgeon specialty, age, experience level, and type of centre.
Conclusion: Clinical practice regarding spine trauma varies widely in France. Little published evidence is available on which to base recommendations that would diminish this variability.

1. Introduction

Since the French Spine Surgery Society (SFCR) was created in the 2000s, attempts to define common ground during the Society's annual meetings have revealed significant variability in practices across different schools of surgery and the two specialities involved in spine surgery, namely neurosurgery and orthopaedic surgery. This variability is particularly marked regarding the management of trauma patients, because the more experienced surgeons tend to devote less time to trauma and substantial clinical equipoise exists within the field of spine trauma.

We therefore sought to objectively characterise this variability by performing a survey based on a fictitious spine trauma vignette. The methodology used to evaluate healthcare practices based on a clinical vignette has been extensively validated [1,2]. Its use has expanded recently and extends to the field of spinal conditions [3–7]. Our secondary goal was to evaluate publications on the topics for which answer variability was greatest. Our working hypothesis was that significant variability existed in spine trauma practices and was related to a lack of strong scientific evidence about spine trauma care.

2. Methods

We performed a cross-sectional study to evaluate the clinical practices of spine surgeons in France. We used a fictitious spine

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trauma vignette based on a real patient, a 31-year-old male with a Magerl type A.3.1 (AOSpine A3) fracture of L1 who presented with paraesthesia in both thighs but no other neurological deficits (Fig. 1). Transverse and sagittal computed tomography (CT) views were provided to illustrate the case (Fig. 2).

To define appropriate questions for this clinical vignette, we asked five experienced spine surgeons (GL, CD, NL, MG, and AD) to suggest five questions each. The questions had to be related to a specific aspect of spine trauma management, from admission to long-term follow-up. The surgeons were asked to draw on their own clinical practice to design questions for which they would like to know the viewpoints of their colleagues. Because of similarities among the 25 submitted questions, we selected 14 questions to simplify the questionnaire. These 14 questions are listed in Appendix 1 (e-component 1).

Each question had a 5-point answer scale that ranged from being sure that the procedure designated in the question should be performed to being sure that it should not be performed. The five answer options were "Yes, definitely", "Yes, probably", "I don't know", "No, probably not", and "No, definitely not". We tested the questionnaire on a panel of five experienced surgeons.

A surgeon-specific questionnaire appended to the 14-question survey was designed to collect information on the surgeons, including age, gender, experience level, professional status, and number of spine fractures treated yearly. The information on these items allowed us to look for factors affecting the survey answers.

This 31-year-old male with height 1 m 82, weight 78 Kg, and an unremarkable medical history was taken by the fire squadron to your centre around midnight after he sustained a spinal injury in a traffic accident.
At arrival, he was conscious and oriented but reported pain, as well as paraesthesia in both lower limbs. Motor and sphincter function was normal.

Fig. 1. Clinical vignette (fictional case, public image).

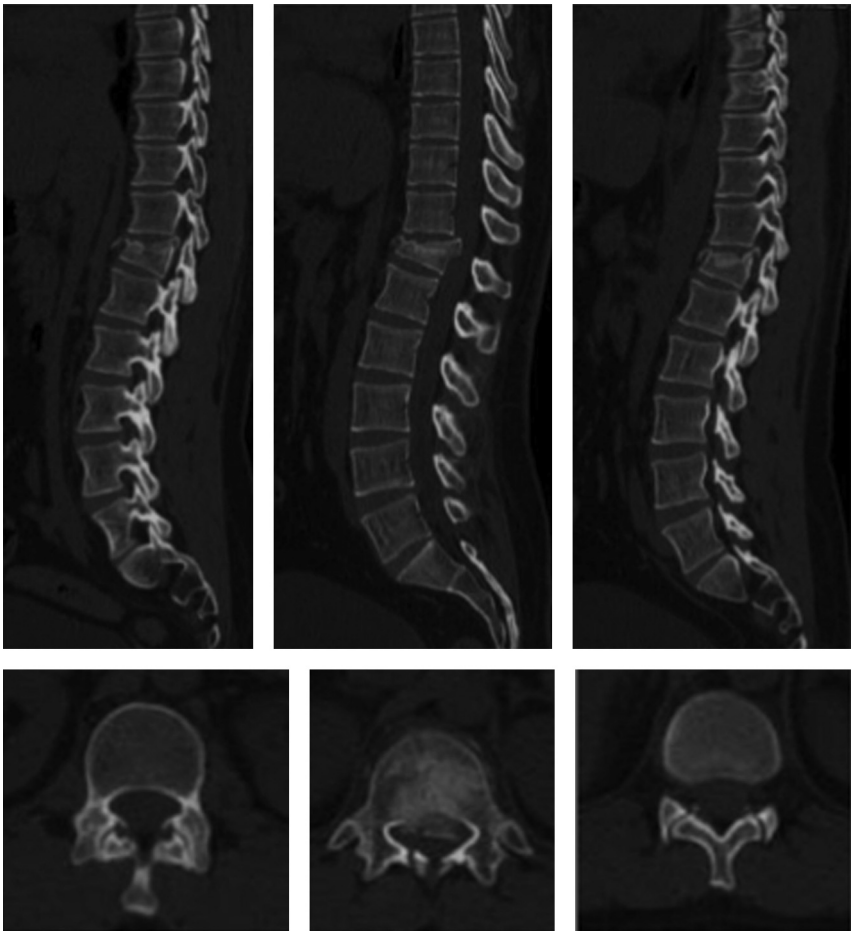

Fig. 2. Computed tomography images in the clinical vignette.