CASE REPORT

When Traditional Bone Setter Triumphs over Orthodox Neurosurgeon: A Case Report of Neglected Traumatic Spinal Cord Injury Resulted in Complications

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ABSTRACT

Introduction: **Neurosurgeons play an important role in the timely management of traumatic spinal cord injury, particularly in rural areas where neurosurgical resources are scarce. This is oftentimes hindered by the presence of traditional bone setters, whose unchallenged exploits have caused delays in referral to proper healthcare facilities and serious complications.**

Case Report: **From the archipelagic rural area of North Maluku, Indonesia, we reported a case of a 45-year-old man with a neglected traumatic spinal cord injury, who rejected proper neurosurgical care and instead opted to undergo spinal manipulation by a traditional bone setter, which resulted in paraplegia, decubitus ulcer, urinary and fecal incontinence.**

Conclusion: **The patient's misfortune should alert neurosurgeons and other medical specialties alike to improve communication with patients and fellow healthcare practitioners and cooperate with policy-makers, particularly in regulating traditional medicine.**

KEY WORDS

neurosurgery, rural, traditional bone setter

INTRODUCTION

The life of neurosurgeons in rural areas has its unique challenges compared to those in urban, including the onus to deal with unnecessary complications of neglected medical conditions caused by patient-/relatives-related impediments in seeking proper care. One major factor responsible for this is the false belief towards traditional bone setters, whose unproven and unorthodox practices are popular among locals, particularly in low-to-middle-income countries[1)]. Problems may arise in situations where quick medical management needs to be delivered soon, e.g., in craniospinal trauma cases, but is eventually postponed or even deterred due to complicated debate and refusal from patients/relatives, resulting in the lost opportunity to provide the best and timely medico-surgical treatment, poor patient outcome, and significant socioeconomic burden for patients and country.

CASE REPORT

On a Sunday afternoon, a 45-year-old man was brought to the emergency room in Chasan Boesoirie General Hospital Ternate, the only facility in the archipelagic province of North Maluku with neurosurgical capability, with lower extremities weakness and numbness after falling from height seven hours ago. The patient was supervising a bridge construction project on an island 50 km south when a pneumatic tool spun out of control and shoved him to the ground 12 meters below. Two hours later, a medical team dispatched from a nearby primary health care center arrived on the scene and provided on-site pre-hospital care. Following another three hours of observation and negotiation with the construction company representatives, it was agreed that immediate evacuation by speed boat was necessary for neurosurgical care. On admission, he was promptly examined by the author, the sole neurosurgeon in the area. No abnormalities were found in the primary survey. A thorough inspection identified minor bruises on the lumbar area. Detailed neurological examination divulged paraparesis (motor function strength of 2) and hypoesthesia at the level of L1 dermatome and below, both compatible with American Spinal Injury Association (ASIA) Impairment Scale grade C. No urinary nor fecal incontinence were observed. Laboratory test results were within normal range. Thoracolumbosacral X-ray examination showed decreased lower thoracic kyphosis with a compression fracture in 1st lumbar vertebra without significant sagittal vertebral height reduction (Figure 1), generating a minimum thoracolumbar injury classification and severity (TLICS) score of 4. The patient was then advised to undergo vertebral computed tomography scan with the possibility of emergency spine surgery. However, after discussions with co-workers and distant relatives by phone, including the guarantee that all treatment costs would be covered by the national health insurance, he consciously decided to refuse medical care and opt to be discharged right away.

Twenty-two days later, the patient was readmitted with total weakness of lower extremities, grade 2 pressure sores, urinary and fecal incontinence. Though fully alert, he was cachexic, with motor and sen-

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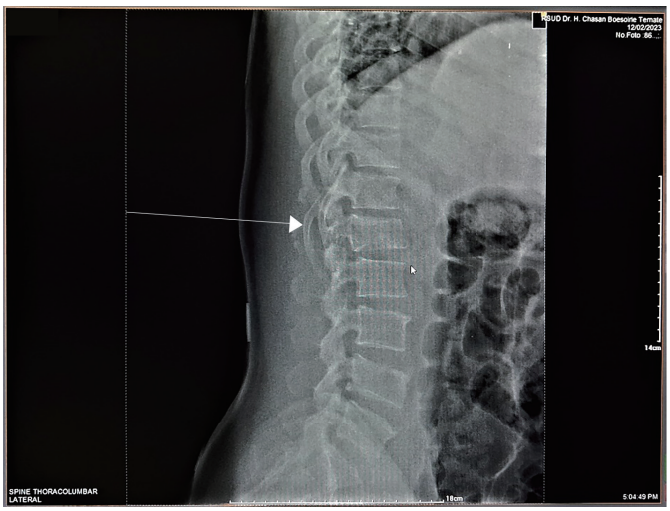

Figure 1: The initial lateral thoracolumbar radiography before bone setting manipulation, showed 1st lumbar vertebra compressed fracture (arrow) and stable sagittal vertebral height.

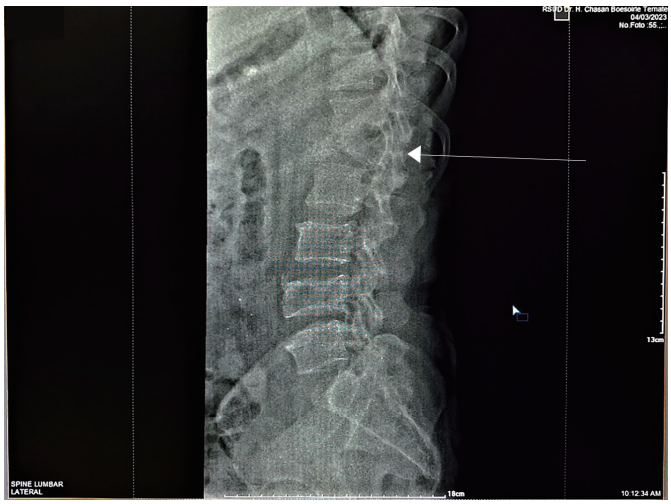

Figure 2: The second lateral thoracolumbar radiography (March 4th, 2023) after bone setting manipulation, showed 1st lumbar vertebra burst fracture (arrow) and reduced sagittal vertebral height.

sory dysfunction compatible with ASIA Impairment Scale A. Through careful anamnesis, it was disclosed that after discharge, he was brought to a traditional bone setter and underwent spinal manipulation consisting of backstepping, back massaging, and seawater heating therapy three times a week. During those time, he was 'admitted' to a hovel along with other patients, with no health care personnel or medication available. Because no improvements were noted after twenty days, he quit the bizarre treatment and chose to be readmitted. Laboratory tests showed elevated serum urea (> 300 mg/dL), creatinine (1.9 mg/dL), sodium (152 mEq/L), and anemia (8.4 g/dL). Thoracolumbosacral X-ray examination showed a burst fracture of the 1st lumbar vertebra with significant sagittal vertebral height reduction (Figure 2), creating a minimum TLICS score of 5. Since the possibility of neurological recovery was little to none, the neurosurgeon decided not to perform surgery and offered multidisciplinary conservative therapy, which the patient submitted.

DISCUSSION

The role of neurosurgery in the treatment of traumatic spinal cord injury has been established and validated through decades of trials and research[2]. Its application in real life, however, may not be readily accepted in societies where traditional methods of healing have existed long before. In particular, traditional bone setters, a profession usually inherited within certain families believed to possess shamanic power, has gained favoritism in rural areas due to its low cost, accessibility, utilization of herbal concoctions familiar among the locals, and its integration of spiritual remedies[3].

Although efforts to regulate traditional medicine have been made by the Indonesian Ministry of Health, monitoring is hardly executed to control the practice in rural areas[4]. Moreover, poor Indonesian health-seeking behavior, most likely influenced by innate sociocultural and economic credence, has further nourished the existence of the establishment, causing underutilization of formal health care resources[5,6]. In light of global neurosurgery, this may also cause underappreciation of the already rare profession, specifically in South East Asian low-to-middle countries[7,8].

The aforementioned case, in which medical referral was executed at the right time, to the right place, under the care of the right surgeon, but ended in the wrong decision, is but a speck of numerous tragedies that have befallen alike patients[9]. It is a reminder that not only burdened with the task to provide the best treatment for patients, we also have the undisputable responsibility to properly educate society and to aptly cooperate with local authorities and policymakers to improve the quality of health care nationally and life individually.

CONCLUSION

The battle for better health standards should continue to be carried out not only within the walls of clinics, hospital wards, and operating theatres, but also necessary to be taken outside, where ignorance, iniquity, and inequity are still rampant, especially among rural people living in low-to-middle-income countries. Firmer health regulations must be exercised to eradicate any unjustified practices. Indeed, perseverance is the secret of all triumphs.

CONFLICTS OF INTEREST

The author declared no conflicts of interest regarding the authorship and/or publication of this article.

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