

# Earthquake 2005 – Spinal Cord Injury Rehabilitation in Pakistan

At 8:52am on October 8, 2005, I was doing my morning rounds in the medical intensive care unit (ICU) on the second floor of our 550 bed private teaching hospital in the capital city of Islamabad, when the floor shook, I commented ‘What was that?’ Before I could get a reply the building began to shake violently. I can never forget the one minute or so it took me to run out of the five storey building. It felt as if the building would collapse on me. As we returned inside after 15 minutes, we were greeted by another series of jolts. Within the next 30 minutes we heard that the most luxurious apartment complex in the city had collapsed to the ground.

The casualties on the Pakistan side were 73,338 dead, while on the Indian side there were 1,360 dead. It affected a population of 3.5 million, destroyed 60% of the health facilities in the region and affected an area of 30,000 square kilometers.<sup>1</sup> There were 667 patients with spinal cord injury (SCI).<sup>2</sup> The majority were relocated to Islamabad and Rawalpindi. Women comprised 57.2%<sup>3</sup> to 74%,<sup>4</sup> although this figure included a large number of patients from a women only facility. Most of them had thoracolumbar injuries.<sup>4</sup> 46% were complete spinal cord injuries.<sup>5</sup>

A total of 685 patients arrived at our emergency room, of whom 294 were admitted and the rest were discharged after minor treatment. Eighteen patients had head injury and 44 had spinal injury – 39 thoracolumbar and 5 cervical.<sup>6</sup> There were 19 patients with unstable thoracolumbar injuries (Figure 1) with a female: male ratio of 8.5:1, who were managed with spinal surgery and stabilisation<sup>7</sup> and aggressive spinal rehabilitation (Figure 2).

## Day one to thirty

All major health facilities in the earthquake zone and the twin cities of Rawalpindi and Islamabad were flooded with disaster patients. A cinema hall in Islamabad was converted into a make-shift facility for women. Volunteer medical teams from other cities set up relief camps and field hospitals in the smaller towns. Some casualties were airlifted to military facilities by helicopters and international search and rescue teams; others used private transport or were brought in by community relief workers.<sup>3,8</sup> Orthopaedic surgeons, neurosur-

Location Map



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geons, trauma surgeons, cardiothoracic surgeons and anaesthetists worked round the clock for 72 hours. In the first month alone, more than 1700 doctors from 23 countries came to the affected areas, either as self motivated individuals or as part of an organised relief mission.<sup>9</sup>

The major issues during the initial two weeks were provision of medications, wound care, prevention of bed sores and shelter for the relatives. Luckily donations poured in, and we were able to provide appropriate antibiotics, analgesics, wound dressings, air-mattresses and shelter for the families. We also purchased tilt tables to be delivered from the UK by air.

## Dearth of training institutions

Rehabilitation of the disabled has been a neglected specialty in Pakistan.<sup>10</sup> Very few good centres exist at present and most of them are in Karachi and Lahore with one in Rawalpindi. There are only three major schools of physiotherapy in Pakistan: the Jinnah Postgraduate Medical Center (JPMC) and Liaquat National Postgraduate Medical Center in Karachi, and the King Edward Medical University in Lahore. The only occupational therapy school in Pakistan is in JPMC Karachi, and it is unable to take more than one batch of 25-30 female students every two years because of a dearth of teaching faculty. There is only one school of orthotic/prosthetic engineering, which is in Peshawar: this was set up by the Germans in the eighties for victims of the Afghan war (POIPOS). It produces 10-12 graduates per

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Figure 1: Radiological imaging of our paraplegic patient ‘S’. Left to right: (a) Pre-op X-ray showing a displaced fracture of L3 vertebra (b) Coronal MRI and (c) post-op X-ray.

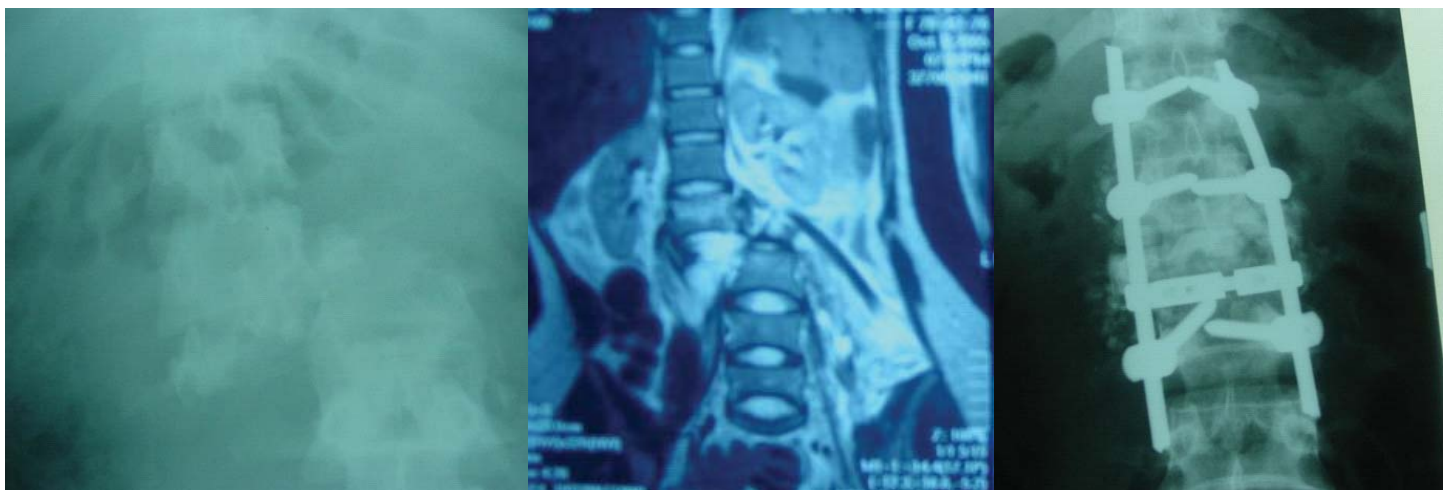




Figure 2: Left to right: (a) Our first patient to walk December 14, 2005 (b) Patients in our Rehabilitation Centre.

year. There is a dearth of neurologists and psychiatrists in the country, and there exist very few facilities or trained professionals in neurorehabilitation and spinal rehabilitation in the country.

### One to three months

The non-governmental organisations (NGOs) got together under one roof, held weekly meetings, identified needs and issues as well as pooled resources for collective benefits, and supplemented deficiencies in the public sector. Volunteers from the Paraplegia Foundation in Lahore were a great motivating force for the paraplegic patients. Physiotherapists, occupational therapists and orthotists, mostly sponsored by local and international NGOs, came from other cities and the rest of the world and conducted short workshops for the locals to fill the knowledge gap. We organised one such workshop on December 13-14, 2005, and our first patient walked with a walking frame the same day.

One of the major hurdles was, and remains, the difficult mountainous terrain and the harsh winters. On returning home, patients had to be carried on mules for long distances to reach the nearest primary health care facilities,

thus forcing many of them to return to government health facilities.

### Three to six months and beyond

Ideally a centre dedicated to providing for the complete rehabilitation needs of such victims should be located near the affected areas, for ease of access. However, a major constraint was a serious dearth of expertise in this field of medicine. Professionals were not willing to relocate. Difficult terrain was hampering return of SCI patients. Most institutions and professionals were based in major cities like Karachi, Lahore and Islamabad. Hence, moving away from a major city was not feasible. With most victims relocated to Islamabad, several major centers in this city with outreach facilities for community based rehabilitation (CBR) were desperately needed. Four inpatient spinal rehabilitation centres were established in the public sector and one in the private sector in Islamabad. One spinal rehabilitation facility was upgraded in Peshawar. Two rehabilitation centres were established in the earthquake affected areas. The government announced hundreds of jobs for physical therapists, occupational therapists and clinical psychologists and gave them salaries

equal to medical officers, thus encouraging them to relocate to the northern areas. Several international relief organisations are still working in the affected areas. In 2007, a group of neurologists, psychiatrists, international relief organisations and philanthropists in USA and Pakistan launched the Spinal Cord Injury Project for Pakistan Earthquake Rehabilitation (SCIPPER) with an aim to provide long-term rehabilitation for these patients. Our facility, together with two other centers - the Paraplegia Centre in Peshawar and the Armed Forces Institute of Rehabilitation Medicine in Rawalpindi have been designated as centres of excellence, with plans to set up tele-rehabilitation facilities in the near future.

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