

Australian doctors in Bali: the initial medical response to the Bali bombing

Dr Graeme J Southwick, Dr Anthony J Pethick, Dr Priya Thalayasingam, Dr Vijith S Vijayasekaran and Dr John J W Hogg

Several Australian medical practitioners were holidaying in Bali at the time of the nightclub bombing on 12 October 2002. On learning of the disaster, they went to Sanglah Hospital to assist. With the very limited resources of the hospital, they helped in providing emergency treatment, stabilising patients, and preparing Australian patients for evacuation.

(Reprinted with permission from *The Medical Journal of Australia* 2/16 December 2002; 177: 624-626)



BALI IS A COMMON HOLIDAY DESTINATION for Australians — within easy reach, with a wonderful climate, a range of costs to suit all budgets, and friendly Balinese people. So it was that some medical practitioners from Australia happened to be in Bali near Kuta on the evening of 12 October 2002 when bombs exploded in a local nightclub, killing more than 100 people and injuring many more. On Sunday morning, we made our way to Sanglah Hospital to help the injured (Box).

The hospital and patients

There are several hospitals in Bali. The main one is Sanglah Hospital, laid out in extensive grounds with long, open corridor wards fed by a maze of partly covered walkways. Directories are not easy to read or follow.

The scene at the hospital was like a movie set gone wrong, with many people milling around the walkways and in the wards. One of us was confronted with a multitude of patients (mostly Australian) with relatively minor injuries — lacerations, shrapnel and other foreign body wounds, and minor burns. These patients were given basic treatment and advised to fly back to Australia as soon as possible.

The more seriously injured patients had been admitted to wards. An early decision was made to try and locate the non-

Indonesian patients into ward 6, which we called “Australia Ward”. This allowed us to focus our resources, but created logistical problems, as the beds were old, heavy and not on wheels. Moving them involved placing a hydraulic hoist arrangement under the bed, manually pumping it up to raise the bed, and then slowly and precariously wheeling the bed to Australia Ward.

Almost all ward patients had serious, full-thickness burns (ranging from about 25% to 85%) and many had shrapnel wounds or intra-abdominal injuries. One patient had a torn right brachial artery, one a crushed left foot and right leg (both requiring amputation), another a fractured cervical vertebra and fractured pelvis and intra-abdominal wounds with damaged bowel. Two intensive care units held several ventilated patients with severe injuries, including major burns and abdominal trauma. One of these patients was a young unidentified girl who had a severe head injury and inhalation burns and was on escalating doses of inotropic drugs. She was looked after initially by an Indonesian neurosurgeon. It was evident her death was imminent. A difficult decision was made to transfer her to Australia in the hope that she would survive the trip and die on home soil.

Our initial aims were to:

- resuscitate;
- treat emergency situations as they developed;
- stabilise the patients as much as possible;
- coordinate the evacuation in conjunction with the Australian consulate and the Australian military attaché;
- triage patients for evacuation (most severe and stable out first); and
- transport patients to the airport for stretcher flights to Australia as soon as practicable.

Ambulance transport was available, with at least nine ambulances ready to shuttle patients — one patient per ambulance.

Melbourne Institute of Plastic Surgery, Melbourne, VIC.

Graeme J Southwick, FRACS, FACS, Plastic Surgeon, and Honorary Senior Lecturer, Department of Anatomy, Monash University. Perth Medical Centre, Perth, WA.

Anthony J Pethick, MB BS, General practitioner. Royal Perth Hospital, Perth, WA.

Priya Thalayasingam, MB BS, Anaesthetic registrar; **Vijith S Vijayasekaran**, MB BS, Plastic surgery registrar. 332 Crown Street, Wollongong, NSW.

John J W Hogg, FRACS, FRCS, Director of Surgery. Reprints: Dr G J Southwick, Melbourne Institute of Plastic Surgery, 253 Wattletree Road, Malvern, VIC 3144. graemes@melbplastsurg.com

Tony Pethick, a general practitioner from Perth, had just returned to his hotel near the Sari Club when there was an initial “pop” noise followed by a much larger explosion. This almost blew him off his feet and shattered all his room’s windows. He ran onto the street to see a massive orange mushroom cloud rising nearby and people staggering, running, and screaming. A man was clutching his abdominal viscera, hanging from an abdominal wound; there were lots of people with minor burns. Cars on fire were slewed across the road; in one the driver was slumped over the door, and closer inspection revealed he had been decapitated. After initial “numbness”, Tony picked up a seriously burnt person from the roadway, and covered some of the burns with t-shirts from a nearby shop window. He then placed the patient into a small van and took him to a nearby clinic. More than 30 injured people were in the clinic, lying 2–3 per bed or on the floor.

There was virtually no equipment. Tony comforted several patients, and they were slowly transferred to Sanglah Hospital. He accompanied one young girl with severe burns who was conscious until she was taken to the operating theatre. Holding her hand, he told her he would see her later. Some hours later, he found out that she had died — he telephoned her mother to explain. After several hours’ sleep, he joined



the other doctors at Sanglah Hospital. **Priya Thalayasingam**, an advanced trainee in anaesthetics, and **Vijith Vijayasekaran**, an advanced trainee in plastic surgery, are a couple from Perth. They arrived in Kuta on

Saturday, 12 October, for a week’s holiday. That night, as they returned to their hotel, they witnessed an explosion in the distance. At that stage, they were unable to find out what had happened, but early on Sunday morning their parents phoned, and they learned that many Australians had been injured in an explosion at the Sari nightclub. After several attempts, they contacted the Sanglah Hospital and Australian Consulate staff and proceeded to the hospital.



John Hogg, a general surgeon from Wollongong, had arrived in Bali with his wife **Linda**, on the afternoon of the bombing. They were woken early the next morning by a call from their daughter in Australia, telling them of the blast. They immediately took a taxi, asking the driver to take them to the main hospital. John became involved in patient care, while Linda spent the next 20 hours trying to locate the missing, often in the morgue.

Graeme Southwick, a plastic surgeon from Melbourne, had been a guest lecturer in Kuta and was spending three days after the conference with his wife at a resort. In the early hours of Sunday morning, his son phoned to say that a bomb had exploded in Kuta. Television reports initially suggested only a few casualties, but soon the full extent of the disaster became apparent. Phone calls to two hospitals on three occasions offering help were rejected. A few hours later a plastic surgeon in Jakarta (who had attended the conference) phoned to request help (agreed to by the Indonesian Minister of Health), and this opened the door to the hospitals.

Limited resources

Ward work was very arduous with the limited equipment available. Vital resources such as monitoring equipment, oxygen, large-bore cannulas and central venous lines were in extremely short supply. All patients required intravenous fluids, with several needing central lines, but we could find only four to use. Intravenous cannulas were small-bore and, as the burns commonly involved all limbs, insertion was often not easy. As luck would have it, our wonderful anaesthetic registrar made it look easy.

The “rule of nines” was used to estimate the percentage total body surface area (%TBSA) and the Parkland formula (4 mL/kg/%TBSA burn in the first 24 hours) was used to calculate each patient’s fluid requirement. The required amounts were written on patients’ bed sheets or fluid balance charts and instructions given to the volunteers monitoring individual patients to ensure that each patient received the required fluid. As only 500 mL saline flasks were available, we needed to pump in the fluids. The small-bore cannulas often blocked or slowed. At least 40 urinary catheters were inserted and urinary outputs were monitored closely. Hourly urine volumes were measured, and specific gravity was estimated by the urine’s colour.

Medical records, including fluid balance charts, were kept as accurately as circumstances allowed. Our aim was to send the charts with the patients on evacuation — we felt communication to our Australian colleagues for ongoing care was very important.

Cephalosporin antibiotics were available and given to all patients intravenously. Pain medication was in limited supply; some IV flasks were already made up with pethidine/saline and these were infused, titrating against pain. We split the limited available ampoules of pethidine and tramadol between us and administered and charted them according to pain levels. One of

us well remembers an Australian man whose face was totally burnt, who could hardly open his eyes and, like many, could not hear well because of blast injury deafness. When offered pain relief he said, “No thank you doc, but go and see someone who needs it more than me”. Unfortunately, despite his return to Australia, he did not survive. His unselfishness will live on.

Burns were dressed as much as possible with the limited dressings available. Silver sulfadiazine started to become available late Sunday afternoon, but only in small tubes and limited supply. We had a dressing trolley with small amounts of gauze but no true bandages, and limited “semi-sterile” open bottles of antiseptic. We ran out of disposable gloves — no sterile gloves could be found. The water was not to be trusted for washing.

Routine blood tests were not available and we had limited blood for transfusion. Four units were sent to us from the Royal Australian Air Force (RAAF) (2 O Rh– and 2 O Rh+) and yet many patients needed transfusing. We had no cross-matching facilities and were afraid to give Rh+ blood to young women.

As time went by, limb swelling and peripheral ischaemia developed in many patients. About 20 escharotomies and fasciotomies were performed using limited equipment (eg, a blade without a handle). In most instances, these were performed without anaesthesia and analgesia because of the severe lack of resources. The patients understood the need for these operations and showed great courage in withstanding the severe pain.

Staff

We would like to pay tribute to the few, overworked Australian nursing staff who aided us greatly. We had a smaller room in which we placed two very sick patients — one with more than



80% body burn and intra-abdominal wounds and one with a severed brachial artery which our Indonesian colleagues had repaired with a saphenous vein graft. In this quasi “high dependency unit” was a lovely New Zealand nurse who was very attentive.

We are sure there were other medical staff who ably assisted the injured and we apologise that we cannot name them all. We hope that this record does them justice.

A strong part of our team were the many volunteers who gave so much of their time and energy. With no training, just goodwill, they stayed for hours beside a fellow human being following our instructions — taking pulses, measuring urine outputs, checking IV fluid rates. Other volunteers spent hours manually fanning patients, as the ward had no air-conditioning.

Evacuation

The Australian embassy staff were excellent and very active in liaising with the Indonesian authorities, the hospital, the RAAF and the airport authorities. Initially we were told that aircraft would be arriving in the early evening of Sunday, 13 October, but this was delayed by a few hours. The first plane was a private jet, which took five seriously ill patients to Perth. The other planes were RAAF Hercules C-130 aircraft, each capable of transporting 28 stretcher patients and with a medical crew on board. They would transport patients to Darwin, where the patients would be reassessed at the Royal Darwin Hospital and then transferred to burns units around Australia (see page 12).

The “walking wounded” from smaller peripheral hospitals and the Sanglah Hospital were evacuated to Sydney and Perth on a Qantas airliner and a privately owned jet.

As the time to evacuate patients arrived, we listed the patients in the ward, grading them according to seriousness of injury, stability for travel, and need to get urgent multidisciplinary treatment in a better-equipped environment.

As soon as the evacuations cleared Australia Ward, other patients from nearby wards were moved in. Eventually only eight or so Indonesian burns patients remained; these patients were treated no differently from those evacuated, except we were instructed that they were to remain. We found it difficult to leave

these patients behind in the ward at this time (about 3:30 AM, Monday, 14 October 2002), but we had learned of eight non-Indonesian patients in other hospitals. Leaving the Indonesian patients to Indonesian medical staff, we divided ourselves into three groups with three ambulances each and an Australian Embassy staff member to travel to each hospital and escort the patients to the airport for evacuation.

On arrival at the airport we were impressed by the marvellous job the RAAF had done in setting up a triage hospital. The RAAF medical teams continued with the care of patients. We were required to perform two more fasciotomies at the airport, but as the last plane arrived we all headed back to our hotels, weary and drained from the experience.

Aftermath

We are indebted to our Indonesian colleagues for their care, without which we feel sure that many more lives would have been lost. We have attempted to convey the enormity of the situation, which is hard to appreciate without having been there. It is difficult to imagine an Australian hospital, despite its access to resources, coping with such a dramatic onslaught of casualties with so much carnage.

Nevertheless, Bali is an underdeveloped country with matching facilities and this made it all the more difficult to attain the goals we set. It made us all very proud to know that the last of the RAAF aircraft took off from Denpasar Airport within about 30 hours of the explosion, taking the last of the 66 seriously injured patients back to Australia. We had performed as a team, used inner strengths none of us could ever imagine, brought people together and amassed a powerful human spirit that would leave all physically, mentally and emotionally drained.

It is important to learn from this Bali bomb disaster, as, although we all pray for the day that all humans can live in peace, we all know that there will remain an element among us intent on repeating such atrocities. As doctors we must always be available to assist the injured. The disaster also brings home to us the powerful message of how fortunate we are to have trained so well in our profession in Australia. Although nothing could have prepared us for this situation, we feel that our Australian medical training was second to none.

In the following days we would all suffer the problems of having been so intimately involved in a disaster — feelings that interfere with our daily lives. Physical and mental tiredness, emotional feelings that interfere with eating and sleep. Some of us have had stress reactions; however, experienced counselling has been invaluable as a preventive therapy. We are all now back to a near-normal life.

Hannie Rayson, the renowned Australian playwright, wrote on “Courage” for one of us to read at a State memorial service for the victims of the Bali bombing. It epitomises how we, as doctors, felt:

In the middle of this outrage, I was delivered an unexpected privilege — I experienced the force of the human spirit. I saw how courageous and selfless men and women can be, when the chasm opens beneath them. □