A case for slow to recover rehabilitation services following severe acquired brain injury

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Introduction

Young people with severe acquired brain injury (ABI) can continue to improve for many years. Unfortunately for those clients who begin to show signs of recovery after the first year post ABI, access to rehabilitation services is extremely limited. This is particularly true for non-compensable clients, many of whom live in aged care facilities with no, or poor, access to therapy. This paper uses “Bil’s” case to illustrate the significant improvements in function and quality of life that can be achieved long after an ABI. Moreover, we outline how a new service, the Acquired Brain Injury: Slow to Recover Program, enabled provision of slow stream rehabilitation for Bil and resulted in his return home two-and-a-half years after injury. [Wales LR and Bernhardt JA (2000): A case for slow to recover rehabilitation services following severe acquired brain injury. Australian Journal of Physiotherapy 46: 143-146]

Key Words: Adult; Brain Injuries; Rehabilitation; Quality of Life; Treatment Outcome

Background

At 24 years of age, Bil was assaulted and sustained a severe head injury (Figure 1 shows the timeline of significant events in his recovery). The CT scan revealed an extensive subarachnoid haemorrhage with a left subdural haematoma and a right extradural haematoma with midline shift. Bil had a craniotomy to evacuate both right and left haematomas; he also

Disadvantaged (non-compensable) individuals with ABI (Birnbauer 1998, Victorian Department of Human Services 1998). Unfortunately, if high levels of dependency remain as a result of severe ABI, aged care facilities (nursing homes) are often the only accommodation option open to non-compensable individuals. A 1996 Australian Bureau of Statistics report identified 4,649 people younger than 65 years living in Australian nursing homes, many of whom have ABI (Australian Bureau of Statistics 1996). Not only are these environments inappropriate for young people, but there is also generally no funding for therapy services, and consequently no opportunity for slow stream rehabilitation or maintenance.

We wanted to present the case of ‘Bil’ to other physiotherapists because this case provides an example of how a young, non-compensable and severely disabled patient can have a successful rehabilitative outcome given adequate time, funding and services.
required a tracheotomy and was intubated after surgery. Nutrition was provided through a percutaneous endoscopic gastrostomy (PEG) tube. From January to May, Bil was managed in an acute hospital in Melbourne where he remained in a vegetative state. He had extreme spastic quadriparesis. In May he was admitted to Gardenview House, a residential care unit (nursing home) that manages patients with complex neurological problems. This unit is located at Melbourne Extended Care and Rehabilitation Service (MECRS), formerly North West Hospital. Like most nursing homes, the unit had extremely limited allied health services. Physiotherapy input consisted of initial assessment and assisting with nursing care plan development. In October of 1996, Bil’s level of arousal had improved and he was attempting to communicate. He was referred to the Community Rehabilitation Service on the same campus for allied health assessment.

At the time of referral, Bil’s yes/no response using hand signals was reliable but he had poor concentration and attention. His behaviour was often irritable and aggressive. He could not sit without moderate assistance and he had minimal active movement in the right limbs only, with severe contractures of left elbow and both calves. He had tonic posturing with fixed left rotation of neck and trunk. The multidisciplinary team commenced a program that aimed to provide Bil with a means of achieving functional communication, and to stimulate his interest in computer games and other leisure pursuits. Physiotherapy (one to two hours per week) aimed to increase the use of his right arm, and to achieve functional sitting, standing and transfers. A customised wheelchair was needed to improve postural support and aid independence.

Four months later After four months of therapy, Bil’s level of arousal and cognitive function had improved markedly. His physical state had also improved, with Bil now able to make intentional movements of the right arm and leg. His trunk rigidity and tonic patterning of the left limbs had reduced to allow independent sitting for one minute. He was still hoisted for transfers. Bil’s case prompted management to re-evaluate physiotherapy funding to Gardenview House. Physiotherapy, including hydrotherapy, was increased to three times a week. In May 1997, a serial plastering program was undertaken with a view to reducing plantarflexion contractures of 20 degrees on the right and 45 degrees

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**Case Report**

**January, 1996** | **Assault severe acquired brain injury (ABI)** Vegetative state, spastic quadraparesis, percutaneous endoscopic gastrostomy (PEG) feed, tracheotomy.
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**May, 1996** | Admitted Gardenview House, semi-comatose, severe quadraparesis. Only physiotherapy (PT) assessment available.
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**October, 1996** | Lighter conscious state, reliable yes/no, referred to community rehabilitation service for therapy (1-2 hrs/week).
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**February, 1997** | 4 week serial plaster trial – no change in calf length, heel raises supplied.
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**May, 1997** | Significant gains, independent sitting (short periods), improved behaviour, motivation. Referred to inpatient ABI rehabilitation – refused “too slow”.
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**June, 1997** | Apply for Slow To Recover Program funds, requesting increased therapy, times, aids and equipment.
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**July 1997** | Approval for funding, discharge planning commences, patient and family involvement ++.
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**December, 1997** | Discharge home, four hours PT/wk, occupational and speech pathology, psychology and 48 hours attendant care per week.
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**August, 1998** | Still at home, walking with gutter frame, good use of right hand, starting soft diet, ongoing therapy.
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**July 1999** |  

Figure 1. Time line of significant events in Bil’s recovery.
on the left. This program continued for four weeks. No appreciable increase in dorsiflexion range was achieved and funding and staff shortages brought the program to a halt. To compensate for marked long standing contractures, custom-made heel raises with T-strap and calliper were purchased. These allowed Bil to stand and transfer comfortably and can be seen in Figure 2.

Transfer to rehabilitation was not an option In June 1997, Bil was referred to a rehabilitation unit but he was considered to be too “slow stream” for the facility and was not accepted. However, when researching options, we discovered a relatively new program for patients with ABI called the Acquired Brain Injury: Slow to Recover (ABI:STR) Program. Funds for this program came from the Department of Human Services (Victorian Government). In Bil’s case, this program made possible additional allied health input, and the purchase of aids, equipment and attendant care services. Safe discharge home became a realistic option and discharge planning commenced in December 1997.

Discharge home By August 1998, Bil could achieve a standing transfer with one person, walk a few steps with a gutter frame and was independently mobile in an electric wheelchair. At this point Bil went home to a custom-built bungalow in his family’s back yard. He was coping well, communicating with a Dynamyte® communication device, and receiving ongoing speech pathology, occupational therapy and physiotherapy (14 hours/week in total), as well as art therapy. Attendant care services (48 hours/week) assisted with personal care.

One year on Ongoing ABI:STR funding continues to support Bil at home. Three-and-a-half years after his injury, he can now walk 20 metres with a frame with assistance, has good use of his right hand and maintains a hectic program of therapy, ABI Day Centre attendance, and the pursuit of computer courses and new leisure activity options. Improved swallowing means he has recently been able to start a soft diet.

Conclusion

Bil’s case is not unique, and reinforces the potential brain injured patients have for slow but significant recovery. For many years, Victorian physiotherapists have lamented the lack of services geared toward helping people like Bil improve their quality of life. In this state, few public facilities exist that provide slow stream rehabilitation services for young, non-compensable patients, and many of these patients are destined to languish in aged care facilities.

Recognition of the difficulties faced by the young ABI patient in gaining access to quality rehabilitative services has seen the development of a new government initiative. The Slow to Recover Program commenced in 1996, and aims to provide care packages responsive to patients’ individual needs. In conjunction with mainstream services, ABI:STR funding is available for rehabilitation services, long term maintenance, vocational retraining and family support. Of the 52 clients (all of whom were assessed as needing long-term nursing care) receiving ABI:STR funding since the program’s inception, 21
have returned home, with a further 16 clients in interim accommodation receiving ongoing rehabilitation services (see Aged, Community and Mental Health Division, Victorian Government Department of Human Services 1999 for full report). As Olver and colleagues (1999) attest, “this program has enabled profoundly disabled clients to be integrated into mainstream services, and to achieve unexpected levels of functional improvement and reintegration into their communities” (p. 37). This has certainly been our experience, and Bil is just one of the many ABI patients who could benefit from such a program.

Key messages for other physiotherapists

Young ABI patients can make slow but significant gains that may allow them to get home and stay home if adequate services are available.

Physiotherapists should explore the possibility of slow to recover services in their state.

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Footnotes  (a) Regency Park Centre for Young Disabled, Days Road, Regency Park, South Australia 5010.  (b) Further information about the Acquired Brain Injury: Slow to Recover Program can be obtained from the Victorian Government Department of Human Services, 555 Collins Street, Melbourne, Victoria 3000, Phone 03 9616 7777.

References