Scand J Rehab Med 2: 27–28, 1970

TREATMENT OF PARAPLEGIC PATIENTS AT THE DANDERYD REHABILITATION CLINIC

B. Bjerner and Jan Åström

ABSTRACT. In a follow up study 22 patients with para- or tetraplegia from spinal cord lesions and treated at a general hospital rehabilitation department were investigated. The material and methods of treatment are presented. At the time of follow up 12 patients (55%) had returned to fulltime employment or regular studies. The need of special departments for neurological rehabilitation is discussed.

Traumatic injuries to the spinal cord often result in lifelong invalidity–paraplegia. During peacetime it is mostly younger people who are afflicted by this, through serious accidents in traffic, sporting activities and suchlike. In Sweden there are about 80 cases a year of traumatic spinal cord lesions (1, 2). In addition there are a lesser number of paraplegia cases by diseases of the spinal cord, but where the same rehabilitation problems are involved. These cases represent a fairly small invalid group, but because of the degree of their invalidity and the highly specialized treatment needed, they constitute a major social and medical-technical problem.

The methods for modern paraplegia treatment were developed during World War II. The object has been to create conditions whereby the patient can lead a comparatively normal existence, independent of the care of others, with a family life of his own, the opportunity to earn a living and opportunities for an active cultural life as well. In this way paraplegia treatment represents an established example of modern rehabilitation.

Even as late as the 1930's paraplegia was, over a period of a few years, almost 100% fatal. Extensive material abroad now shows that with modern treatment methods more than one paraplegic in two can resume earning their own living (3, 4). Sweden can likewise show instances of successful treatment (5, 6), but progress here has been slow and 10 years ago one of us (Bjerner) was forced to conclude that treatment results in material from Gothenburg were about the same as results achieved in other countries prior to World War II (6).

In 1963 the Danderyd Hospital opened its medical rehabilitation clinic for Stockholm county; an area with some 600 000 inhabitants. The clinic has 23 beds for in-patients and later a further 25 places for out-patients have been added. Chiefly because of access to properly trained paramedical staff the clinic has been able to look after the neurological rehabilitation of all the paraplegic cases in the area. At the same time we have been able to aid the patients during their social rehabilitation. In the event of complications developing after completion of rehabilitation the patients have been readmitted for examination and treatment. Periodically rehabilitated patients are given complementary policlinical physiotherapy and training during the evenings.

During the period 1963–67 the clinic treated 40 cases of paraplegia. Of these 22 were *new* cases, that is to say they were afflicted after 1 Jan. 1963. This group of patients is reported on below. During the same period 18 earlier cases of paraplegia, i.e. those afflicted prior to 1 Jan. 1963, were also treated. Of this latter category several had medical histories of many years and, rehabilitation-wise, proved to be inveterate cases. Others lacked a real need of rehabilitation and were admitted for short-term examination or for the treatment of complications. There were also odd cases, however, where despite prolonged medical histories it was possible through rehabilitation measures to restore their working capacity.

These earlier cases are not included in the following report.

Table I. *Paraplegia Cases in Stockholm County, 1963–1967*

Frequency/Age	–63	–64	–65	–66	–67	Total
Up to 50	4	5	4	1	4	18
Over 50	1	0	1	1	1	4
Total	5	5	5	2	5	22

MATERIAL

Table I shows the 22 new cases of paraplegia, according to age and year of admission. The average age of affliction for the 20 men and 2 women was 35. An average of 16 weeks elapsed between affliction and admission to the clinic, meridian 10.5 weeks. Etiology: 17 cases of traumatic spinal cord injury; 9 of which were caused through traffic accidents, 3 benign tumours and 2 cases of myelitis.

Table II shows the types of injury. *Th–L* implies injuries in the chest and lumbar cord region, *C* injuries in the cervical segment region. *Total* and *Partial* relate to the degree of functional deficiency below the injured region.

METHODS

The medical and paramedical treatment has been conducted accordning to the current methods, which are precisely summarized by Rossier (7). During the period of spinal shock the bladder has been emptied with intermittently opened catheters. Bladder control has then been practiced according to the methods which, inter alia, are reported on by the Karolinska Hospital (8). Regular weekly conferences have been held at the hospital with orthopaedic and urological consultants and with local vocational employment representatives. None of the new paraplegic cases have needed plastic surgery treatment. The average treatment time amounted to 8.5 months, although for the 6 total tetraplegia cases the average treatment time was 15 months.

RESULTS

A follow up investigation in June 1969 revealed that 12 patients (55%) were employed fulltime or were pursuing regular studies at secondary school or university. The distribution of working and educational capacity according to types of injury is shown in Table II. Among those cases who were not working or studying there were a small number of promising prospects where rehabilitation had not yet been completed. Two patients have remained in need of medical care, both with total injuries in the C5–C6 region. No patients died.

Table II. *Degree of injury, and occupation, June 1969*

	Total	Work + studies	Others
C total	6	2	4
C partial	6	4	2
Th + L total	7	4	3
Th + L partial	3	2	1

DISCUSSION

Compared with the international materials our material is very limited. It shows, meanwhile, that patients with severe spinal cord injuries can be rehabilitated with good results even at general hospital rehabilitation departments. However, in order that the medical aspect of the rehabilitation shall be entirely satisfactory in complicated cases, it is necessary that the patients can be referred to a special department for neurological rehabilitation.

REFERENCES

1. Gehrig, R. & Michaelis, L.: Statistics of acute paraplegia and tetraplegia on a national scale. Paraplegia *6:* 93, 1968.
2. Höök, O.: Paraplegivård i Sverige. Nord Med *49:* 428, 1953.
3. Guttmann, L.: Management and rehabilitation of spinal cord injuries. Postgrad bull *13:* 27, 1957.
4. Munro, D.: The rehabilitation of patients totally paralysed below the waist, with special reference to making them ambulatory and capable of earning their own living. New Engl J Med *250:* 4, 1954.
5. Lithander, B.: Halsmärgsskada efter dykning på grunt vatten. Svensk Läkartidn *62:* 592, 1965.
6. Bjerner, B. & Fällström, C. E.: Paraplegivård i Göteborg. Svensk Läkartidn *56:* 2557, 1959.
7. Rossier, A. B.: Rehabilitation of the Spinal Cord Injury Patient. J. R. Geigy S. A., Basel, Switzerland, 1964.
8. Backman, K.-A., Hedqvist, I. & Höök, O.: Neurogena blåsrubbningar vid tetra- och paraplegi. Resultat av blåsträning. Svensk Läkartidn *65:* 4449, 1968.

Key words: Paraplegia, rehabilitation

Address for reprints:
Bo Bjerner, M.D.
Danderyd Hospital
Danderyd 3, Sweden