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ORIGINAL REPORT

SEXUAL ACTIVITY AND SATISFACTION IN MEN WITH TRAUMATIC SPINAL CORD LESION

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Objective: **To estimate sexual activity and sexual satisfaction in men with spinal cord lesion.**
Design: **Cross-sectional study.**
Subjects: **All adult citizens in Helsinki with traumatic spinal cord lesion were identified. The final study group comprised 92 male subjects, corresponding to a participation rate of 79%.**
Methods: **A structured questionnaire was sent to all subjects and they were invited for a clinical visit. Clinical examination was based on the manual of the American Spinal Injury Association (ASIA). Examinations were performed on all subjects by the same experienced physician and physiotherapist.**
Results: **In total, 86% of the subjects experienced sexual desire and 68% had been sexually active during the last 12 months. A total of 65% of subjects reported experiencing orgasm since the injury, but most subjects rated it as weaker than before the injury. There were no statistically significant differences between the ASIA Impairment Scale groups. Men with paraplegia reported a more satisfactory sex life ($p = 0.05$) than those with tetraplegia.**
Conclusion: **This study confirms the earlier findings that the ability to reach orgasm is deficient in men with spinal cord lesion. The completeness of the lesion had no effect. The more severe locomotory disability might adversely affect the sex life of persons with tetraplegia compared with those with paraplegia.**

Key words: spinal cord injury, sexual activity, sexual satisfaction, prevalence.

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INTRODUCTION

After spinal cord lesion (SCL), sexuality is complicated by marked physiological, psychological and emotional consequences. The function and sensation of the genital organs are most often seriously affected. The neurophysiological effects depend on the level and completeness of the lesion (1). Sexual dysfunction has been found to be associated with a lower quality of life in the subscales general health and social function for persons with SCL (2). Sexual activity and satisfaction has been reported to decrease after the injury and to be lower among persons with SCL compared with controls (3, 4). Sexual excitability and orgasm have been rated at much lower levels after injury compared with before injury (5).

On the other hand, Kreuter et al. (4) reported that psychosocial rather than physical factors are more important for a satisfying sex life and relationships. Siosteen et al. (6) found that physical and social independence and high mood levels were positive determinants of sexual adaptation after the injury, whereas the neurological level and completeness of the injury showed no significant correlation with sexuality. Also, health-related quality of life in the area of sexuality has been reported to decrease after SCL independently of the completeness or level of the lesion (7). Phelps et al. (8) found that genital function and sensation were not significantly related to sexual satisfaction. Partner relationships seem to be affected by a SCL, although not as much as is widely believed (9).

During recent decades there has been great progress in treatment methods for erection dysfunction (ED) and anejaculation (10). New oral treatments are effective in ED. Treatment with sildenafil can significantly improve key quality of life parameters in men with ED caused by SCL (11). Treatments for ED have been well documented and they should be available to all men with SCL (12). In addition, testicular biopsia and intracytoplasmic sperm injection has enabled many men to achieve fatherhood.

Although treatments for ED and anejaculation are effective, the psychological and emotional consequences of SCL on sexuality require more attention. Sexual education and counselling are important and should be part of a regular rehabilitation programme. The first 6 months after discharge from acute rehabilitation has been proposed as a critical period for sexual health interventions (5).

Sexual gratification can be achieved in a good relationship if the person with SCL can pleasure his partner and the partner also explores the erogenous areas that are not affected by the spinal cord injury (13).

In 1998, the Health Committee of Helsinki decided to evaluate the present health status and social situation of adults with traumatic SCL leading to permanent neurological deficits. The

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aim of this Helsinki Spinal Cord Injury Study (HSCIS) was to determine the prevalence of the population with SCL and to assess their needs. The purpose of the current sub-study was to evaluate the sexual activity and sexual satisfaction of men with traumatic SCL.

METHODS

Subjects

The study design was cross-sectional. The cross-section date of the study was 1 January 1999. Subjects to be included in the HSCIS were identified from the registers of the Käpylä Rehabilitation Centre, Helsinki University Central Hospital and the local organization for disabled people. Local health centres were informed about the study, residential service houses were contacted, and announcements were published in patient magazines. Case findings are described in more detail by Dahlberg et al. (14).

In order to carry out the study as a whole, permission was requested from the Ethics Committee, Helsinki University Central Hospital, as well as from the Ministry of Social Affairs and Healthy of Finland.

Procedure

All identified subjects with traumatic SCL were invited to a clinical visit. The data were gathered during that visit between September 1999 and February 2001, and at least one year after each subject's injury. The data included answers to a structured questionnaire with 129 questions. The subjects were also interviewed in confidence during the visit by the same interviewer. Some of the questions dealing with sexual function were based on the Swedish quality indicators of spinal cord injury care (15), but were modified. In this report only 4 questions were used in detailed analysis (Table I). During the interview the term "other sexual activity" was defined as a partner-related sexual activity that included genital stimulation and the term "orgasm" as subjective experience of sexual climax with or without ejaculation.

During the visit a clinical investigation based on the manual of the American Spinal Injury Association (ASIA) was performed (16). The ASIA classification is widely used in spinal cord injury medicine. The ASIA Impairment Scale (AIS) reflects the completeness of the lesion:

- A = complete lesion, no sensory or motor function is preserved in the lowest sacral segments;
- B = sensory incomplete lesion (including segments S4–S5), but no motor function below the neurological level;
- C = sensory and motor incomplete but more than half of the 10 pairs of key muscles have strength of less than 3 on a scale of 0–5;
- D = sensory and motor incomplete, at least half of the key muscles have strength greater than or equal to 3;
- E = sensory and motor function normal.

In this study the level of the lesion includes only tetraplegia or paraplegia.

Table I. *Questions related to sex life*

1. Do you experience sexual desire?
   ( ) Yes
   ( ) No
2. Have you been sexually active (i.e. intercourse or other sexual activities) with another person during the last 12 months?
   ( ) Yes
   ( ) No
3. Have you experienced orgasm since your injury?
   ( ) Yes, the quality was same as before the injury
   ( ) Yes, the quality was changed, but as good as before the injury
   ( ) Yes, but the quality was weakened
   ( ) No orgasm
   ( ) Not tried
4. How satisfactory is your sex life?
   ( ) Very satisfactory
   ( ) Rather satisfactory
   ( ) Somewhat satisfactory
   ( ) Not at all satisfactory
   ( ) I have no opinion

Statistical analysis

The results were expressed as mean or median, standard deviation (SD) and 95% confidence intervals (95% CI). The statistical significance between groups was evaluated by analysis of variance (ANOVA), *t*-test, χ^2 test or Fisher-Freeman-Halton test. The α level was set at 0.05 for all tests.

RESULTS

At the cross-section date of the study (January the 1st 1999) there were 546,000 inhabitants in Helsinki. A total of 152 cases of SCL were found. This means a prevalence of 28 per 100,000 inhabitants. Altogether 116 of the subjects were men, corresponding to a prevalence rate of 46 per 100,000 male inhabitants.

The final study group comprised 92/116 men (79%). The mean age during the follow-up was 49 years (SD 14) and the mean age at injury was 30 years (SD 14) . The mean age during the follow-up of men in AIS group A was 46 years (SD 11), in AIS group B 48 years (SD 14), in AIS group C 47 years (SD 15) and in AIS group D 55 years (SD 15). There was a statistically significant difference between the age of the men in each AIS group ($p = 0.026$).

The mean age of the 24 dropouts during the follow-up was 46 years (SD 11) and the mean age at injury was 31 years (SD 14). There was no statistically significant difference between the dropouts and the study group in the age at follow-up or the age at injury.

Altogether, 44 (48%) men had a complete lesion and 48 (52%) had an incomplete lesion. A total of 47 (51%) men had tetraplegia and 45 (49%) had paraplegia.

A total of 70 (76%) men had had intercourse since the injury.

The data on sexual activity, sexual desire and orgasm between each AIS group is shown in Table II. A total of 79 (86%)

Table II. *Sexual activity, experienced sexual desire and quality of orgasm in American Spinal Injury Association Impairment Scale (AIS) groups*

	AIS groups			
	A ($n = 44$)	B ($n = 14$)	C ($n = 11$)	D ($n = 23$)
Sexually active, *n* (%)	30 (68)	12 (86)	6 (55)	15 (65)
Experiences sexual desire, *n* (%)	41 (93)	12 (86)	10 (91)	16 (70)
Orgasm experienced, *n* (%)	26 (59)	11 (79)	6 (55)	17 (74)
Quality of orgasm				
Same or as good as before the injury	12	4	2	8
Weakened	14	7	4	9

men reported experiencing sexual desire. A total of 63 men (68%) had been sexually active during the last 12 months. Altogether, 60 men (65%) reported having experienced orgasm since the injury. However, 57% of them (n = 34/60) rated orgasm as weaker than before the injury. There were no statistically significant differences between the AIS groups.

The data on sexual activity, sexual desire and orgasm between tetraplegia and paraplegia is shown in Table III. There were no statistically significant differences between tetraplegia and paraplegia.

The subject's opinion of their sex life between each AIS group is shown in Fig. 1a. Altogether, 33 men (36%) rated their sex life as very or rather satisfactory. There were no statistically significant differences between the AIS groups.

The subject's opinion of their sex life between tetraplegia and paraplegia is shown in Fig. 1b. Men with paraplegia were more satisfied (p = 0.05) with their sex life than men with tetraplegia.

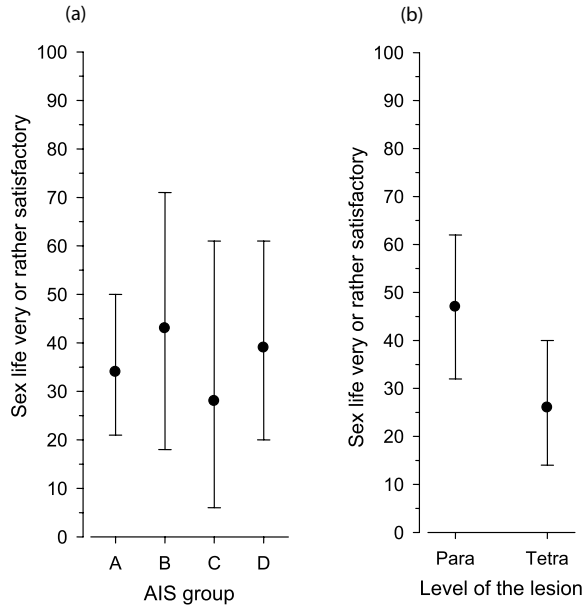

Fig. 1. Proportion and 95% confidence interval of (a) men who rated their sex life as very or rather satisfactory in American Spinal Injury Association Impairment Scale (AIS) groups, and (b) men with paraplegia or tetraplegia who rated their sex life as very or rather satisfactory showing a statistically significant difference ($p < 0.05$).

DISCUSSION

A reasonable effort was made to find all subjects with SCL in the Helsinki area. In the Stockholm Spinal Cord Injury Study (SSCIS) (using similar methods) the prevalence rate was 22/100,000 inhabitants (17). The rate in Helsinki is even higher (28/100,000) (14).

The final study group comprised 79% of the whole population of men with traumatic SCL. The study group can be estimated to represent rather well the population of men with traumatic SCL in Finland. The data were collected in a confidential conversation, always with the same interviewer. This study offers an opportunity to estimate the sexual activity and satisfaction of men with SCL on a prevalence basis.

The lack of sexual interest was not higher than reported in a population of men in Northern Europe (18). On the other hand, the inability to reach orgasm was much higher (18, 19). Community samples indicate a prevalence of 0–3% for male orgasmic disorder, in our study it was 35%. This finding is consistent with earlier reports (3–5) and can be explained by physiological effects and loss of sensory elements in the genital organs.

There were no statistically significant differences between the AIS groups in any of the items. The mean age of the men in AIS group D was statistically significantly higher than the mean age of the men in other AIS groups, and this may have an effect on the result. The completeness of the lesion, however, seemed not to be very important in the area of sexuality. This too, has been reported earlier. On the other hand, in this study men with paraplegia rated their sex life as significantly more satisfactory than those with tetraplegia. In earlier reports the level of the lesion had no effect (6, 7). However, more severe locomotory disability in tetraplegia may be a negative factor also in their sex life. Unfortunately, in the analysis concerning the level of the lesion it was not possible to divide tetraplegia and paraplegia into smaller AIS subgroups because of the limited number of subjects.

Table III. *Sexual activity, experienced sexual desire and quality of orgasm in paraplegia and tetraplegia*

	Level of the lesion	
	Paraplegia (n = 45)	Tetraplegia (n = 47)
Sexually active, *n* (%)	35 (78)	28 (60)
Experiences desire, *n* (%)	41 (91)	38 (81)
Orgasm experienced *n* (%)	32 (71)	28 (60)
Quality of orgasm		
Same or as good as before the injury	14	12
Weakened	18	16

In the SSCIS, 72% of the male subjects had had intercourse or had attempted intercourse and 37% had not experienced orgasm since the injury (20). In our study 76% of men had had intercourse and 35% had not experienced orgasm since the injury. The results are thus similar in this study and in SSCIS (20).

In conclusion, these results confirm the earlier findings that the ability to reach orgasm is deficient in men with SCL. The completeness of the lesion seems not to be very important in the area of sexuality. The more severe locomotory disability might disturb the sex life of men with tetraplegia compared with men with paraplegia. The challenge is to minimize these problems by better sexual counselling and collaboration of the patient with their sexual partners.

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