

Lower urinary tract and sexual dysfunction in patients with spina bifida

Patients with spina bifida had lower urinary tract and sexual dysfunctions, but their sexual desire was preserved. A correlation was observed between QOL and ICIQ-SF scores, and the patients had problems with urinary incontinence.

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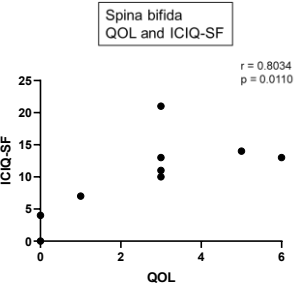
Background

The prognosis of patients with spina bifida (SB) has improved owing to advances in medical and surgical treatments, including the management of tethered cord syndrome, bladder and bowel management, and management of spinal and lower limb deformities. As life prognosis improves, emphasis is being placed on quality of life (QOL), and lower urinary tract and sexual function are major concerns for patients. In this study, we evaluated the current status of lower urinary tract and sexual function in adult patients with SB compared to healthy adult volunteers.

Results

Female			
Patient characteristics			
	Spina bifida (n = 21)	Control (n = 17)	p
Age (year)	40.0 (30.0-44.0)	40.0 (36.0-50.0)	0.6472
10 / 20 / 30 / 40 / 50	1 (4.8) / 4 (19.0) / 5 (23.8) / 8 (38.1) / 3 (14.3)	0 (0) / 3 (17.6) / 5 (29.4) / 4 (23.5) / 5 (29.4)	
Height (cm)	150.0 (142.0-154.0)	161.0 (158.0-164.0)	< 0.0001
Weight (kg)	57.7 (44.0-65.0)	54.0 (48.5-57.0)	0.6683
Body mass index (kg/m ²)	25.1 (20.9-29.7)	20.4 (19.1-22.0)	0.0450
Partner Yes / No	9 (42.9) / 12 (57.1)	14 (82.4) / 3 (17.6)	0.0133
Marriage Yes / No	7 (33.3) / 14 (66.7)	11 (64.7) / 6 (35.3)	0.0541
Children Yes / No	4 (19.0) / 17 (81.0)	11 (64.7) / 6 (35.3)	0.0012
Myelomeningocele / Spinal lipoma	16 (76.2) / 5 (23.8)	-	
Th11 / L1 / L3 / L4 / L5 / S1	1 (4.8) / 1 (4.8) / 6 (28.6) / 4 (19.0) / 8 (38.1) / 1 (4.8)	-	
Walking normally / Walking with canes / Wheelchair	8 (38.1) / 6 (28.6) / 7 (33.3)	-	
Clean intermittent catheterization	21 (100)	-	

Male			
Patient characteristics			
	Spina bifida (n = 9)	Control (n = 11)	p
Age (year)	41.0 (28.0-47.0)	34.0 (29.5-38.5)	0.5379
10 / 20 / 30 / 40 / 50	0 (0.0) / 3 (33.3) / 1 (11.1) / 5 (55.6) / 0 (0.0)	0 (0.0) / 3 (27.3) / 5 (45.5) / 1 (9.1) / 1 (9.1)	
Height (cm)	150.0 (146.0-160.0)	170.0 (166.5-176.5)	0.0053
Weight (kg)	45.0 (42.0-50.0)	73.0 (62.5-75.5)	0.0024
Body mass index (kg/m ²)	18.8 (18.4-21.8)	24.1 (21.4-25.2)	0.0251
Partner Yes / No	3 (33.3)	10 (90.9)	0.0014
Marriage Yes / No	3 (33.3)	9 (81.8)	0.0277
Children Yes / No	2 (22.2)	7 (63.6)	0.0640
Myelomeningocele / Spinal lipoma	7 (77.8) / 2 (22.2)	-	
Th10 / Th12 / L1 / L2 / L5 / S1	1 (11.1) / 1 (11.1) / 2 (22.2) / 2 (22.2) / 2 (22.2) / 1 (11.1)	-	
Walking normally / Walking with canes / Wheelchair	3 (33.3) / 0 (0.0) / 6 (66.7)	-	
Clean intermittent catheterization	9 (100.0)	-	



ICIQ-SF, King's health questionnaire			
Parameter	Spina bifida (n = 21)	Control (n = 17)	p
ICIQ-SF total	9.0 (4.0-10.0)	0.0 (0.0-0.0)	< 0.0001
Q1. Frequency	2.0 (1.0-3.0)	0.0 (0.0-0.0)	< 0.0001
Q2. Amount	4.0 (2.0-4.0)	0.0 (0.0-0.0)	< 0.0001
Q3. QOL	3.0 (1.0-4.0)	0.0 (0.0-0.0)	< 0.0001
King's health questionnaire			
General health perception	25.0 (25.0-50.0)	25.0 (25.0-25.0)	0.0633
Incontinence impact	33.3 (33.3-100.0)	0.0 (0.0-0.0)	< 0.0001
Role limitations	33.3 (16.7-66.7)	0.0 (0.0-0.0)	< 0.0001
Physical limitations	33.3 (16.7-66.7)	0.0 (0.0-0.0)	< 0.0001
Social limitations	33.3 (22.2-55.6)	0.0 (0.0-0.0)	< 0.0001
Personal relationship	0.0 (0.0-29.2)	0.0 (0.0-0.0)	0.0364
Emotions	33.3 (11.1-66.7)	0.0 (0.0-0.0)	< 0.0001
Sleep and energy	16.7 (0.0-16.7)	0.0 (0.0-0.0)	0.0398
Severe (coping) measures	53.3 (40.0-60.0)	0.0 (0.0-0.0)	< 0.0001

ICIQ-SF, King's health questionnaire			
Parameter	Spina bifida (n = 9)	Control (n = 11)	p
ICIQ-SF total	11.0 (7.0-13.0)	0.0 (0.0-0.0)	< 0.0001
Q1. Frequency	4.0 (3.0-5.0)	0.0 (0.0-0.0)	< 0.0001
Q2. Amount	2.0 (2.0-4.0)	0.0 (0.0-0.0)	< 0.0001
Q3. QOL	5.0 (2.0-6.0)	0.0 (0.0-0.0)	< 0.0001
King's health questionnaire			
General health perception	50.0 (25.0-50.0)	25.0 (25.0-25.0)	0.0424
Incontinence impact	33.3 (33.3-66.7)	0.0 (0.0-0.0)	< 0.0001
Role limitations	33.3 (33.3-50.0)	0.0 (0.0-0.0)	< 0.0001
Physical limitations	50.0 (16.7-66.7)	0.0 (0.0-0.0)	< 0.0001
Social limitations	33.3 (22.2-44.4)	0.0 (0.0-0.0)	< 0.0001
Personal relationship	33.3 (0.0-33.3)	0.0 (0.0-0.0)	0.0227
Emotions	33.3 (22.2-44.4)	0.0 (0.0-0.0)	< 0.0001
Sleep and energy	16.7 (16.7-33.3)	0.0 (0.0-0.0)	0.0005
Severe (coping) measures	53.3 (40.0-86.7)	0.0 (0.0-0.0)	< 0.0001

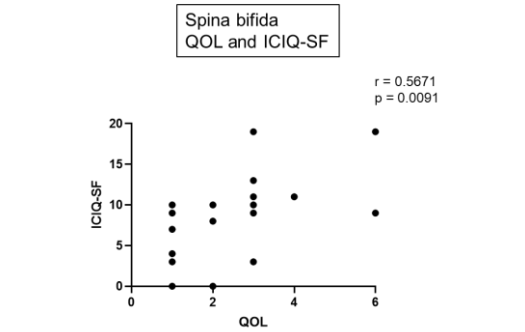
Interpretation of results

The FSFI scores of adult females with SB were significantly lower than those of healthy volunteers in terms of arousal, lubrication, orgasm, satisfaction, and pain; however, there was no difference between the two groups in terms of sexual desire. This suggests that sexual desire exists regardless of whether or not one has sexual dysfunction. All nine males with SB had moderate to severe erectile dysfunction. All patients who reported having attempted sexual intercourse had partners, but their sexual satisfaction was low. A positive correlation was observed between ICIQ-SF and IPSS-QOL.

Methods

This was a prospective, observational study. The participants were adults with SB who visited Nara Medical University Hospital and Osaka Red Cross Hospital, Otemae Seishi Gakuen, between September 2023 and December 2024. Age, height, weight, type of SB, comorbidities, medications, urinary management methods, International consultation on incontinence-questionnaire: short form (ICIQ-SF), King Health Questionnaire, Female sexual function index (FSFI), Sexual health inventory for men (SHIM), Erection hardness score (EHS), and Aging males' symptoms (AMS) were assessed. We posted a poster for the study on a university bulletin board and recruited healthy volunteers.

FSFI			
Parameter	Spina bifida (n = 21)	Control (n = 17)	p
FSFI total	3.4 (2.5-7.8)	21.5 (11.5-26.8)	0.0008
Desire	2.0 (2.0-3.0)	3.0 (2.0-5.0)	0.2118
Arousal	3.0 (0.0-4.0)	9.0 (5.0-13.0)	0.0018
Lubrication	0.0 (0.0-1.0)	13.0 (1.0-18.0)	< 0.0001
Orgasm	0.0 (0.0-0.0)	8.0 (1.0-12.0)	< 0.0001
Satisfaction	2.0 (1.0-4.0)	10.0 (6.0-12.0)	0.0002
Pain	0.0 (0.0-0.0)	13.0 (8.0-15.0)	0.0055



SHIM, EHS, AMS			
Parameter	Spina bifida (n = 9)	Control (n = 11)	p
SHIM total	3.0 (1.0-10.0)	21.0 (19.5-23.0)	0.0003
SHIM 1	2.0 (1.0-2.0)	4.0 (3.0-4.5)	0.0002
SHIM 2	1.0 (0.0-3.0)	4.0 (4.0-5.0)	0.0031
SHIM 3	0.0 (0.0-2.0)	4.0 (4.0-5.0)	0.0006
SHIM 4	0.0 (0.0-2.0)	4.0 (4.0-5.0)	0.0010
SHIM 5	0.0 (0.0-2.0)	4.0 (4.0-4.5)	0.0003
Erection hardness score	2.0 (0.0-2.0)	4.0 (3.5-4.0)	0.0002
Aging males' symptoms	27.0 (23.0-33.0)	20.0 (18.5-26.0)	0.0979

Implications

Patients with SB had lower urinary tract and sexual dysfunctions, but their sexual desire was preserved. A correlation was observed between ICIQ-SF and QOL scores, and the patients had problems with urinary incontinence.