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Risk Factors for Emotional and Relationship Problems in Peyronie's Disease

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Abstract

Introduction—Peyronie's disease (PD) occurs in 3–9% of all men. Little is known regarding the specific psychological or emotional disruptions to sexuality associated with PD.

Aim—Our primary aim was to identify risk factors associated with psychosocial difficulties in men with PD.

Methods—This cross-sectional study enrolled patients from a single clinical practice. Detailed medical histories, physical examinations, and a PD-specific questionnaire were used to define clinical characteristics. Odds ratios (ORs) were used as a measure of association.

Main Outcome Measures—Emotional and relationship problems were determined by “yes” or “no” answers to two specific questions.

Results—The mean age of all PD patients ($N = 245$) was 54.4 years (range 19.4–75.6); 62% were married, and 59% presented within 2 years of disease onset. The overall prevalence of emotional and relationship problems attributable to PD was 81% and 54%, respectively. Among men who had relationship problems, the prevalence of emotional problems was 93%. In men with emotional problems due to PD, relationship issues were observed in 62%. Multivariable analysis revealed that emotional difficulties ($OR\ 6.9, P < 0.001$) and ability to have intercourse ($OR\ 0.4, P = 0.004$) were independently associated with relationship problems. Relationship problems ($OR\ 8.0, P < 0.001$) and loss of penile length ($OR\ 2.7, P = 0.02$) were significant independent predictors of emotional problems after adjustment for the ability to maintain erections, low libido, and penile pain.

Conclusions—Among men with PD, there is a very high prevalence of emotional and relationship problems. Loss of penile length and inability to have intercourse are strong predictors of these problems and as such make ideal targets for intervention. Medical and surgical therapies may enhance quality of life through their ability to improve sexual function. Further research will characterize the ways in which individual symptoms affect emotional and psychological well-being.

Keywords

Cross-Sectional Analysis; Epidemiology; Erectile Dysfunction; Psychosocial; Quality of Life; Risk Factors

Introduction

Peyronie's disease (PD) occurs in 3–9% of the men [1–4] and is characterized by varying degrees of penile deformity and sexual disability. In the early stages of PD, penile deformity and pain, penile nodules, and difficulties with penetrative intercourse prompt referral for evaluation and treatment. Medical and surgical therapies are effective in men with PD [5–13]. Indications for surgery are often based upon curvature, level of sexual disability, failure of previous medical therapy, and individual preferences. The choice for elective surgery may depend upon the psychosocial impact of the disorder. However, little is known about the emotional and relationship difficulties faced by men with PD.

One previous study found that 77% of men with PD admitted to “psychological effects” of the disease [14], indicating that psychosocial stress is prevalent among men with PD. In another study that utilized focus groups [15], men with PD had mood disturbances, low self-esteem, and emotional distress. They reported feeling a loss of physical attractiveness and virility, as well as fear of partner sexual dissatisfaction. A recent review highlighted the paucity of data on this topic, and suggested that many men suffer from depression and diminished quality of life as a result of PD [16].

These studies emphasize the need for research that evaluates specific factors associated with psychosocial stress in men with PD. The frequency with which men suffer from *emotional* or *relationship* problems attributable to PD is currently unknown. Given that these stressors may be factors in determining the timing of, and progression, to surgical treatment, decreasing their impact may alter treatment decisions in PD patients. We sought to identify specific risk factors for emotional and relationship difficulties in men with PD. Understanding and addressing these risk factors could improve quality of life and satisfaction with therapeutic choices for this sexually debilitating disorder.

Specific Aim(s)

1. Determine the prevalence of emotional and relationship difficulties attributed to PD.
2. Identify specific risk factors associated with emotional or relationship difficulties attributed to PD.

Methods

This cross-sectional study analyzed men with PD treated in a single clinical practice. PD-specific questionnaires were completed at the time of initial evaluation. The questionnaires queried demographic features, past medical and surgical history, and specific signs and symptoms associated with PD. Risk factors evaluated included age, duration of disease, marital status, stability of disease, loss of penile length, ability to have intercourse, libido, erectile dysfunction, and penile pain. Among the group of patients completing questionnaires (N = 584), subjects were included in the study if they completed the two emotional and relationship questions on the PD-specific questionnaire (N = 245). Human subject approval was given by the UCSF Committee on Human Subjects.

Main Outcome Measures

Two specific questions requiring a “yes” or “no” response were used to determine the presence of emotional or relationship effects of PD. The specific questions asked were:

1. Do you feel the presence of Peyronie's disease has affected your emotional status?

2. Has the presence of Peyronie's disease affected your relationship with your sexual partner?

Statistical Analysis

We used bivariate and multivariate logistic regression to evaluate predictors of our main outcome variables. Odds ratios (ORs) were used as a measure of association between predictors and outcomes. A P value ≤ 0.05 was considered statistically significant. Variables assessed included age (continuous), ability to maintain erections (yes/ no), emotional problems (yes/ no), relationship problems (yes/no), duration of disease (time since self-reported date of onset), marital status (married yes/no), stability of curvature (yes/no), sudden onset of disease (yes/ no), loss of penile length (yes/no), ability to have intercourse (yes/ no), previous penile injury (yes/no), low libido (yes/no), and penile pain (yes/no). Backward stepwise logistic regression was used to develop a final statistical model. Variables were included in the final model if their P values were ≤ 0.2 . Men with complete covariate data were used for this analysis. STATA 10 (StataCorp, College Station, TX, USA) was used for all analyses.

Results

The mean age of all PD patients ($N = 245$) was 54.4 years (range 19.4–75.6); 62% were married, and 59% presented within 2 years of disease onset. The overall prevalence of emotional and relationship problems attributable to PD was 81% and 54%, respectively. Among men who had relationship problems, the prevalence of emotional problems was 93% (Table 1). In men with emotional problems, relationship problems were seen in 62%.

Analysis of Risk Factors for Relationship Problems

In the unadjusted analysis (Table 2), the presence of emotional problems (OR 6.8, $P < 0.0001$), loss of penile length (OR 2.1, $P = 0.02$), and low libido (OR 1.9, $P = 0.03$) were associated with relationship problems. Men who were able to have intercourse were less likely to report problems with their relationship (OR 0.35, $P < 0.001$). Multivariable analysis (Table 3) revealed that emotional difficulties (OR 6.9, $P < 0.001$) and ability to have intercourse (OR 0.38, $P = 0.004$) were independent predictors of relationship problems after adjusting for the ability to maintain an erection. Patient age, ability to maintain erections, previous penile injury, marital status, sudden onset of disease, penile pain, loss of penile length, duration of disease, and stability of curvature were not significantly associated with relationship problems.

Analysis of Risk Factors for Emotional Problems

In the unadjusted analysis (Table 4), relationship problems (OR 6.8, $P < 0.001$) and loss of penile length (OR 3.0, $P = 0.002$) were associated with emotional problems attributable to PD. In the adjusted model (Table 5), both relationship difficulties (OR 8.0, $P < 0.001$) and loss of penile length (OR 2.7, $P = 0.02$) remained significant independent predictors of emotional problems after adjustment for the ability to maintain erections, low libido, and penile pain. Previous penile injury, patient age, marital status, duration of disease, the ability to have intercourse, sudden onset of disease, penile pain, and stability of curvature were not significantly associated with emotional difficulties.

Discussion

Emotional and relationship problems attributable to PD are very common, observed in 81% and 54% of men, respectively. Among the group of men who had relationship problems, nearly all men had emotional problems (93%). Emotional problems due to PD contributed to a sevenfold increase in the odds of having relationship problems when adjusting for the ability to have intercourse and maintain erections. Retaining the ability to have intercourse led to a

clinically significant reduction in the chances of having relationship problems. While the unadjusted analysis suggests that loss of penile length, low libido, and penile pain were also risk factors for relationship problems, they were not significant in the multivariable model. Relationship problems and loss of penile length contributed to an eight- and threefold increase, respectively, in the odds of having emotional problems when adjusting for the ability to maintain erections, low libido, and penile pain.

Our analysis suggests that penile length loss and loss of the ability to have intercourse are significantly associated with the development of emotional and relationship problems in men with PD, and as such are appropriate targets for corrective therapy and counseling. Medical treatments for erectile dysfunction associated with PD may be able to improve an individual's ability to have intercourse [17,18]. These treatments may improve an individual's quality of life [19]. Given that specific PD treatments have been shown to decrease penile curvature [6, 20], they may also be expected to maintain or improve sexual function. Current surgical interventions to straighten the penis are highly successful in restoring the ability to have intercourse [21]. Furthermore, clinic interventions designed to decrease the emotional impact of PD might also significantly help men with PD and improve the quality of relationships. While most current interventions for PD focus on the medical or surgical management of the disorder, we propose that counseling or other mental health care may be of value for some men.

Few studies have described the psychosocial impact of PD. One study from 1996 blamed losses to follow-up in their study on the "patient's difficult psychological situation," suggesting that embarrassment or some other factor precluded men from continuing with medical care [22]. Data from a recent series of focus groups described several self-esteem issues that men with PD face, including poor body image and loss of feelings of masculinity [15]. Furthermore, erectile dysfunction among men with PD is aptly described as a major determinant of their quality of life [23]. The current study complements and supports these findings from the literature with regard to emotional and relationship issues associated with PD.

Certain limitations of this study merit mention. While 584 men completed some portion of the PD questionnaire, only 245 completed the questions related to emotional or relationship problems. There may have been an unwillingness to complete these sensitive questions, in which case the true prevalence estimates for emotional and relationship problems may be even higher. Men may have randomly not completed the questionnaire leading to non-differential misclassification; this would tend to bias measures of association toward the null hypothesis and lead to minimal change in the prevalence estimate. The outcome measures in this study have not been validated, thus decreasing the certainty that they measure what they purport to measure. As yet, no gold standard exists to assess psychosocial outcomes in PD. While these findings are clearly hypothesis-generating, these results need to be verified in additional studies to confirm their validity.

The present study reveals a very high prevalence of emotional and relationship problems among men with PD. A psychosocial evaluation could be incorporated into the routine PD assessment with referrals to appropriate mental health professionals as needed. Furthermore, loss of penile length and diminished sexual function are key predictors of emotional and relationship problems, respectively. Both of these factors can be modified by medical or surgical interventions and may lead to significant improvements in quality of life. This information will serve as a basis for the future exploration and analysis of what appear to be profound psychosocial manifestations of PD.

Conclusion

Among men with PD, there is a very high prevalence of emotional and relationship problems. Loss of penile length and inability to have intercourse are strong predictors of these problems and are ideal targets for intervention. Further research will characterize the ways in which individual symptoms affect emotional and psychological well-being in PD patients.

Statement of Authorship

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Table 1

Characteristics of participants (N = 245)

Risk factor	Emotional problems				Relationship problems			
	Yes		No		Yes		No	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Age (years)	198	54.1 (11.2)	47	54.9 (11.1)	131	54.7 (10.7)	114	53.7 (11.7)
Duration of disease (years)	183	2.3 (3.5)	45	1.7 (1.8)	120	2.5 (3.9)	108	1.9 (2.3)
	N	%	N	%	N	%	N	%
Emotional problems	N/A		N/A		122	61.6	76	38.4
Relationship problems	122	93.1	9	6.9	N/A		N/A	
Married	120	81.6	27	18.4	81	55.1	66	44.9
Able to have intercourse	129	80.1	32	19.9	73	45.3	88	54.7
Able to maintain erections	93	79.5	24	20.5	68	58.1	49	41.9
History of penile injury	50	87.7	7	12.3	33	57.9	24	42.1
Loss of penile length	147	85.5	25	14.5	100	58.1	72	41.9
Low libido	58	87.9	8	12.1	43	65.2	23	34.9
Penile pain	127	84.1	24	15.9	89	58.9	62	41.1
Stable curvature	84	77.1	25	22.9	58	53.2	51	46.8
Sudden onset	80	76.9	24	23.1	53	51.0	51	49.0

Table 2

Unadjusted risk factors for relationship problems (N = 245)

Risk factors	Odds ratio	95% Confidence interval	P value
Emotional problems from Peyronie's disease	6.80	3.1–14.8	<0.001
Able to have intercourse	0.35	0.2–0.6	<0.001
Loss of penile length	2.10	1.1–4.0	0.02
Low libido	1.90	1.1–3.4	0.03
Penile pain	1.70	1.01–2.9	0.04
Able to maintain erection	1.70	0.98–2.8	0.06
Previous penile injury	1.30	0.7–2.3	0.44
Married	1.23	0.7–2.1	0.45
Stable curvature	1.10	0.6–1.9	0.73
Duration of disease	1.1	0.96–1.2	0.24
Age	1.00	0.98–1.03	0.47
Sudden onset	0.83	0.5–1.4	0.47

Table 3

Adjusted risk factors for relationship problems (N = 220)

Risk factor	Odds ratio	95% Confidence interval	P value
Emotional problems from Peyronie's disease	6.94	3.0–15.9	<0.001
Able to have intercourse	0.38	0.2–0.7	0.004
Able to maintain erection	1.70	0.9–3.0	0.08

P values for previous injury, marital status, sudden onset of disease, penile pain, loss of penile length, age, duration of disease, and stability of curvature were >0.2 in the multivariable analysis and were not included in the final model.

Table 4

Unadjusted risk factors for emotional problems (N = 245)

Risk factors	Odds ratio	95% Confidence interval	P value
Relationship problems from Peyronie's disease	6.80	3.1–14.8	<0.001
Loss of penile length	3.00	1.5–6.2	0.002
Low libido	2.10	0.9–4.7	0.1
Penile pain	1.80	0.9–3.4	0.1
Previous penile injury	1.90	0.8–4.6	0.1
Duration of disease	1.1	0.9–1.3	0.3
Sudden onset	0.70	0.4–1.3	0.3
Stable curvature	0.70	0.4–1.4	0.4
Married	1.20	0.6–2.3	0.6
Age	0.99	0.97–1.02	0.7
Able to have intercourse	0.94	0.5–1.9	0.9
Able to maintain erections	0.95	0.5–1.8	0.9

Table 5

Adjusted risk factors for emotional problems (N = 208)

Risk factor	Odds ratio	95% Confidence interval	P value
Relationship problems	8.0	3.3–19.7	<0.001
Loss of penile length	2.7	1.2–6.2	0.02
Able to maintain erections	0.5	0.2–1.2	0.12
Low libido	2.1	0.8–5.4	0.14
Penile pain	1.8	0.8–3.9	0.15

Pvalues for previous injury, marital status, sudden onset of disease, ability to have intercourse, age, duration of disease, and stability of curvature were >0.2 in the multivariable analysis and were not included in the final model.