Psychological Aspects Related to the Duration and Severity of Plantar Fasciitis

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No Conflict to Disclose

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Joowon Joh, M.D.

My disclosure is in the Final AOFAS Mobile App.
I have no potential conflicts with this presentation.
Introduction

- Plantar fasciitis
  - Affects as much as 10% of the population during the course of a lifetime
    - Crawford F. et al., Cochrane Review, 2004
  - Unknown etiology in approximately 85% of cases
    - Riddle DL. et al., Foot Ankle Int25:311-317, 2004

- Extensive research in the field of plantar fasciitis
  - Anatomic variation (ex. reduced ankle dorsiflexion)
  - Personal characteristics (ex. body weight)
  - Life style (ex. work-related weight-bearing)
  - Psychological aspects?

No studies measuring the prevalence of psychological profiles in plantar fasciitis
The Purpose of this study

1. To obtain a psychological profile of individuals with plantar fasciitis

2. To examine the patients’ personal characteristics

3. To determine if there was a relationship between patients’s psychological and personal characteristics
Material and Methods (I)

- Inclusion criteria for the study participants
  - Diagnosis based on
    - pain in the area of the insertion of the plantar aponeurosis to the medial tubercle of the calcaneus
    - pain provoked when the patient took the first few steps in the morning
    - plantar fascia thickening, soft tissue edema on U/S
  - Heel pain present ≥3 weeks duration
  - No systemic arthritic condition

- 1:1 matching, with two controls (age & gender)

<table>
<thead>
<tr>
<th>Study participants</th>
<th>A control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 patients (35 female, 25 male) received treatment on an outpatient basis</td>
<td>60 normal subjects (35 female, 25 male) No history of plantar heel pain</td>
</tr>
</tbody>
</table>
Material and Methods(II)

◆ Psychological assessment
  • The Symptom Checklist-90-Revised (SCL-90-R)
    - The questionnaire comprised 90 items, measure ten psychological characteristics

◆ Clinical assessment
  • Age, sex, occupation, duration and severity of plantar heel pain (VAS)

◆ Statistical analysis
  • Student t-test
  • ANOVA
  • Pearson correlation
  • SPSS 12.0 for windows
## Results(I)

<table>
<thead>
<tr>
<th>Psychological profile: SCL-90-R</th>
<th>Patients (N = 60)</th>
<th>Controls (N = 60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety (ANX)</td>
<td>27.5±7.2</td>
<td>17.2±6.5</td>
</tr>
<tr>
<td>Depression (DEP)</td>
<td>37.6±8.8</td>
<td>21.3±10.4</td>
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<tr>
<td>General complaints (G-C)</td>
<td>14.9±4.3</td>
<td>10.2±5.0</td>
</tr>
<tr>
<td>Grudge (GRU)</td>
<td>13.5±4.1</td>
<td>12.9±3.7</td>
</tr>
<tr>
<td>Interpersonal sensitivity (INT)</td>
<td>21.8±4.8</td>
<td>15.6±4.1</td>
</tr>
<tr>
<td>Obsessive-compulsive disorder (O-C)</td>
<td>27.9±6.7</td>
<td>20.2±3.2</td>
</tr>
<tr>
<td>Paranoid thought (PAR)</td>
<td>13.3±3.1</td>
<td>13.6±4.3</td>
</tr>
<tr>
<td>Phobic anxiety (PHO)</td>
<td>9.8±2.2</td>
<td>10.1±3.0</td>
</tr>
<tr>
<td>Psychosis (PSY)</td>
<td>17.5±4.1</td>
<td>17.9±4.8</td>
</tr>
<tr>
<td>Somatization (SOM)</td>
<td>22.8±6.2</td>
<td>23.1±7.4</td>
</tr>
</tbody>
</table>

* : P<0.05
Positive correlation between duration of illness and patients’ level of obsessive-compulsive behaviours ($r=0.15$), anxiety ($r=0.33$), general complaints ($r=0.14$), and depression ($r=0.24$)

Significant positive correlation between the severity of illness and SCL-90-R scores ($r=0.34$, $P=0.002$)
The awareness of psychological background of musculoskeletal pain (e.g., back pain, fibromyalgia), long recognized in many literatures, has been little recognized in clinical practice for plantar fasciitis.

Psychological factors related to pain

- **Anxiety**: The higher the level of anxiety, the higher the pain that is experienced.
  
  - *Merskey H. Raven press, 1978*

- **Depression**: Fall into a pattern of lethargy as a form of “learned helplessness”
  
  - *Silver RL. et al, Academic press, 1980*

- **Social modelling**: Observing an over-sensitive role model had a diminishing effect on pain threshold and pain tolerance.
  
  - *Chapman CR. et al, a psychological approach to etiology and treatment, 1981*
Higher SCL-90-R score of anxiety, depression, interpersonal sensitivity, obsessive-compulsive disorder, somatization and general complaints in patients with plantar fasciitis

Females with plantar fasciitis scored higher on all dimensions of SCL-90-R.
- Female subjects demonstrate enhanced responses to experimentally induced pain.


Non-working patients were more depressed and had higher anxiety score.

Psychological stress exacerbate plantar fasciitis? or Patients develop psychiatric problems as a consequence of their condition?
Conclusion

- Our results demonstrated close relationships of psychological aspects in plantar fasciitis, highlighting the importance of recognizing psychological aspects in the development of treatment strategies.
Reference