Pain with lipoedema

Attempt to approximate

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Summary

Introduction: Complaints of lipoedema are mainly referred to as pressure pain or tension in the scientific literature.

Objective: The objective was to enable a further differentiation of the quality of the perceived discomfort and provide a preliminary quantification of pain severity.

Methods: 50 patients with Stage II lipoedema were asked to complete a questionnaire containing 30 items corresponding to sensory and affective pain sensations. For these items, they could choose between “completely applicable”, “largely applicable”, “somewhat applicable”, or “not applicable”. The patients were also asked to describe their complaints in their own words.

Results: The items *pressing* and *dull* were specified most frequently. The following were indicated to a lesser extent: *severe, tearing, nagging, unnerving, fierce, unbearable, exhausting*, and *sharp*. Compared to patients with chronic pain, the mean values of all the patients’ sensory and affective scores yielded an average pain severity. However, when the patients used their own formulations, the complaints were often described as being very pronounced.

Conclusion: Only a small portion of the adjectives offered was suitable for characterising the sensations of lipoedema. There were considerable inter-individual variations in how the pain was perceived. The severe symptoms, which are partially subjective, should be considered when characterising lipoedema.

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**Pain-associated synonyms for lipoedema**

- Lipalgia
- Adiposalgia
- Adipositas dolorosa
- Lipomatosis dolorosa of the legs
- Lipohypertrophia dolorosa
- Painful column leg
- Painful lipoedema syndrome

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The success of conservative therapy (combined physical decongestion treatment) is shown in a reduction of the oedema volume with a corresponding improvement of the symptoms. Although daily manual lymph drainage with subsequent compression and movement has been successfully used for decades, to our knowledge, there are no studies with quantitative data concerning pain reduction after physical decongestion.

Also after surgical treatment, those affected indicate a reduction in spontaneous and pressure pain. This could be evaluated pre- and post-operatively using questionnaires as part of a self-assessment (2). This quantitative improvement is probably primarily a result of oedema reduction. It is assumed that the reduction of the subcutaneous space on the
thighs and lower limbs can reduce the oedema fluid postoperatively (reduction of the epifascial compartment). For example, 25% of the patients reported that no physical therapy was necessary after completion of the operative therapy; 41% said the combined physical decongestion treatment was only necessary to a very limited extent [2].

In contrast, the quality of the lipoedema-associated symptoms perceived by the patients has not yet been examined in detail. Neither in standard textbooks on pain and/or pain therapy [3–5] nor in the lymphological literature [6–9] could any information on this be found.

Objective

The pain and (mis)perceptions occurring during lipoedema should be assessed and further characterised. The influence that these symptoms have on the overall sensitivity is also of interest. In addition to qualitative data in the form of individual scores, semi-quantitative information should be assessed by means of a scale and with the aid of global values.

Patients and methods

Fifty patients who presented at the Lübeck Capio Hanse-Klinik in Germany from March to December 2007 were examined. All had Stage II lipoedema. The mean age was 38.9 (20–68) years, and the mean BMI was 32.6 (21–47) kg/m²; values between 30 and 34.9 correspond to Grade 1 obesity. There were no other diseases with pain; analgesics, sedatives, or antidepressants were not taken. For all patients, the duration of examination and symptoms was several years.

In order to record the symptoms, a pain assessment scale in the form of a questionnaire with 30 items was used. This contained 24 standardised items that describe the sensory and affective features of the pain sensation as well as the persistence of these pains [10].

The 10 sensory items included: palpitating, throbbing, and hammering (for the pain rhythm); searing, wrenching, sharp, and penetrating. (for the local penetration); and burning, blistering, and hot (for the temperature sensation).

**Fig. 1:**
Mean scores for a total of 50 patients. 1 = not applicable, 2 = somewhat applicable, 3 = largely applicable, 4 = completely applicable.
The 14 affective items included: *horrible*, *fierce*, *gruelling*, *excruciating*, *chronic*, *severe*, *awful*, and *unbearable* (for the general indication of pain) as well as *nagging*, *exhausting*, *miserable*, *unnerving*, *tormenting*, and *debilitating* (for the description of tenacity).

These 24 items were supplemented by six adjectives, which were partly used in the pain questionnaire at the Schleswig-Holstein University Hospital in Germany (Lübeck campus) and partly repeated by patients with lipoedema when the medical history was collected. The following terms were involved: *dull*, *pushing*, *tearing*, *pulsating*, *piercing*, and *pressing*.

All items were to be assigned to the categories “completely applicable” (rated with 4 points), “largely applicable” (3 points), “somewhat applicable” (2 points), or “not applicable” (1 point). Based on the points, a score was calculated for each property; this is composed of the sum of the individual scores of all categories of a property divided by the number of participants (i.e. 50). (For example, if all patients specified “completely applicable” for an item, the maximum possible score would be $4 \times 50 = 200$ divided by $50 = 4.0$).

The 24 standardised items were also used to calculate a global score of pain perception – separately for the sensory and affective items – for each patient. For the 10 sensory items, values between 10 ($10 \times 1$) and 40 ($10 \times 4$) were possible. For the affective items, values between 14 ($14 \times 1$) and 56 ($14 \times 4$) were possible.

There was some extra space at the end of the questionnaire. The patients were asked to describe the complaints and the sensations caused by them in their own words.

### The 10 most frequently named adjectives for the pain description (maximum possible score: 4.0)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>pressing</td>
<td>2.86</td>
</tr>
<tr>
<td>2.</td>
<td>dull</td>
<td>2.68</td>
</tr>
<tr>
<td>3.</td>
<td>severe</td>
<td>2.53</td>
</tr>
<tr>
<td>4.</td>
<td>tearing</td>
<td>2.34</td>
</tr>
<tr>
<td>5.</td>
<td>nagging</td>
<td>2.33</td>
</tr>
<tr>
<td>6.</td>
<td>unnerving</td>
<td>2.30</td>
</tr>
<tr>
<td>7.</td>
<td>fierce</td>
<td>2.30</td>
</tr>
<tr>
<td>8.</td>
<td>unbearable</td>
<td>2.08</td>
</tr>
<tr>
<td>9.</td>
<td>exhausting</td>
<td>2.06</td>
</tr>
<tr>
<td>10.</td>
<td>sharp</td>
<td>2.04</td>
</tr>
</tbody>
</table>

### Results

Fig. 1 graphically depicts the average scores for each of the 30 items. Tab. 2 lists the ten most highly rated properties with scores $\geq 2$.

No item scored a score of 3 or more; only three properties (*pressing*, *dull*, and *severe*) scored a value of more than 2.5.

Fig. 2 shows an example of an evaluation of the first part of the questionnaires (10 of 30 items) indicating the selected categories in the form of a tally sheet. Even in the case of the most frequently cited properties, one recognises the strong inter-individual differences for the assessment in the corresponding categories.

With regard to the total score, the sensory pain sensation (10 items) yielded a mean value of 16.3 (10–31), and the affective pain sensation (14 items) yielded a mean value of 24.4 (14–43).

Forty of the 50 patients provided additional information using their own formulations.

Individual pain-related descriptions are listed in Tab. 3.

### Discussion

![Fig. 2](image-url)

*Excerpt from the evaluation of the questionnaires with total results in the form of a tally sheet. The large inter-individual differences in pain perception are clearly visible.*

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**Tab. 2**

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**Tab. 3**

<table>
<thead>
<tr>
<th>I perceive my pain as</th>
<th>Completely applicable</th>
<th>Largely applicable</th>
<th>Somewhat applicable</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dull</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tearing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulsating</td>
<td><strong>II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagging</td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td></td>
</tr>
<tr>
<td>Horrible</td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td></td>
</tr>
<tr>
<td>Exhausting</td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td></td>
</tr>
<tr>
<td>Fierce</td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td><strong>II</strong></td>
<td></td>
</tr>
<tr>
<td>Gruelling</td>
<td><strong>II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miserable</td>
<td><strong>II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Based on the pain sensitivity scale, which is used for individuals between 16 and 80 years of age, a differentiated description of subjectively perceived pain is possible. As in the present case, it is used as a “paper and pencil” or computer version (11). It is used to diagnose – and measure – pain, especially in the evaluation of pain treatment. Twelve of the items (of 24 items listed above) are used in the “German Pain Questionnaire” of the German Society for Pain Therapy and the German Society for the Study of Pain (www.dgss.org).

In the present study, it can be seen that only one-third of the 30 descriptions used were able to “depict” the complaints occurring in the case of lipoedema. The classical questionnaires for pain therapy obviously contain few items with which oedema-related complaints can be easily detected. Of the 30 items, only 10 had a score of more than 2 (maximum possible score of 4); no item had a score of 3 or more. The following are stated as being “completely applicable” or “largely applicable”: pressing, dull, severe, tearing, nagging, unnerving, fierce, unbearable, exhausting, and sharp. Of these 10 items, three (pressing, dull, and tearing) are not listed in the German Pain Questionnaire of the German Society for the Study of Pain. Of the remaining seven items, only one (sharp) is an expression of sensory pain sensation. The remaining six (severe, nagging, unnerving, fierce, unbearable, and exhausting) reflect affective features of pain sensation. This demonstrates the strong emotional stress of this particular patient clientele. Half of these features (unnerving, nagging, and exhausting) indicate the tenacity of the sensations. This can be easily understood in the case of a chronic and progressive disease such as lipoedema.

The individually different affective processing of the complaints likely explains the strong inter-individual variability in the indication of the severity categories. For example, certain characterisations were described as “completely applicable” in some patients but “not applicable” in others. This is clearly demonstrated in Fig. 2, which depicts an excerpt of the evaluated questionnaire. Even for the most frequently mentioned items (i.e. pressing and dull), many patients indicated these sensations as “somewhat applicable” or “not applicable”. Highly distinctive differences in the quality of experience of lipoedema patients are known to all physicians and physiotherapists based on their own experiences.

With regard to the total scores of this patient collective, mean values of 16.3 and 24.4 were obtained for sensory and affective pain sensation, respectively. In order to enable a comparison with scores of other painful diseases possible, only 24 of the 30 items were evaluated; these are used as standards in the classical pain sensitivity scale. To assess of the degree of pain using the pain sensitivity scale, a comparison with a representative sample (n = 1,048) of both sexes was carried out [10]; this group includes mainly chronic pain. Sensory values between 12 and 25 and affective values between 22 and 44 correspond to an “average” pain severity. (For sensory perception, only five out of 50 patients achieved scores above 25). In the case of lipoedema, the subjectively perceived complaints are not of outstanding, but of great importance.
Pain with lipoedema

Established stages of lipoedema based on morphological criteria

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Subcutis thickened and soft with small nodules, skin smooth</td>
</tr>
<tr>
<td>II</td>
<td>Subcutis thickened and soft with larger nodules, skin uneven</td>
</tr>
<tr>
<td>III</td>
<td>Subcutis thickened and indurated, large nodes, deforming fat deposits on the inside of the thighs and knees</td>
</tr>
</tbody>
</table>

Table 4a

Conceivable complementary classification of lipoedema according to complaints

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Pressure pain only after strain (in the evening, warmth, standing for long periods)</td>
</tr>
<tr>
<td>II</td>
<td>Permanent pressure pain, spontaneous pain only after strain</td>
</tr>
<tr>
<td>III</td>
<td>Permanent pressure pain, permanent spontaneous pain</td>
</tr>
</tbody>
</table>

Table 4b

This is also confirmed by the individually used descriptions at the end of the questionnaire. Mainly dramatic sounding formulations are presented. Some also sound relatively threatening (e.g. pressing, binding, bursting, piercing, and sharp). Such “extreme” sensations have not yet been described in the literature on lipoedema.

The findings of the present study relate exclusively to the lower extremities; in principle, the arms are much less affected. This points to the importance of orthostasis. Based on this study, it cannot be assessed whether the nervous influences repeatedly described in the form of damage to the autonomic nervous system [6, 7] play a role.

However, based on clinical findings with reference to fat growth alone, it is certain that the established classification of the severity of lipoedema does not fully meet the clinical picture. The partially subjective partly yet very pronounced symptoms are in no way considered in the classification of lipoedema of Stages I–III (Tab. 4a).

A complementary division, as shown in Table 4b, would be more clinically relevant. The results of this work, which is mainly devoted to qualitative aspects, suggest that accurate and established methods for the quantitative measurement of pain should also be used before and after therapy. This is only carried out rudimentarily (2).

Finally, the results of this study can be summarised in the core principles (Tab. 5).

Core principles

The complaints of lipoedema
- are characterised as very strong in many cases
- are perceived very differently depending on the individual
- have clearly been underestimated in scientific literature
- have an “average” appearance compared with other chronic pain conditions
- should be taken into account in order to better assess the severity of the disease
- should be assessed not only qualitatively but also quantitatively in the future.

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Literature


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