Attitudes toward management of patients with subacromial pain in Swedish primary care

Kajsa Johansson, Lars Adolfsson and Mats Foldevi

N.B.: When citing this work, cite the original article.

Original Publication:
http://fampra.oxfordjournals.org/cgi/content/abstract/16/3/233
Copyright: Oxford University Press
http://fampra.oxfordjournals.org/

Postprint available at: Linköping University Electronic Press
http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-14390
Attitudes toward management of patients with subacromial pain in Swedish primary care

Kajsa Johansson\textsuperscript{1}\textsuperscript{*}, Lars Adolfsson \textsuperscript{2} and Mats Foldevi\textsuperscript{1}

\textsuperscript{1} Department of Medicine and Care, Primary care, Faculty of Health Sciences, Linköping, Sweden
\textsuperscript{2} Department of Neuroscience and Locomotion, Plastic surgery, Hand surgery and burns, Faculty of Health Sciences, Linköping, Sweden

Keywords: conservative treatment, general practice, questionnaire, shoulder problems, written case simulation

Running title: Subacromial pain in primary care

\textsuperscript{*} Corresponding author:
Kajsa Johansson
Department of Medicine and Care, Primary care,
Faculty of Health Sciences, 581 85 Linköping, Sweden
Abstract

The study objective was to describe the attitudes among general practitioners and physiotherapists toward the diagnostic approach and management of patients with a common shoulder disorder. A questionnaire was sent out to 188 general practitioners and 71 physiotherapists. Total response rate was 71.4%. The questions were based on a written case simulation with cues about history and symptoms. The results showed a unanimous opinion of the diagnosis. Rotator cuff tendinitis was marked as the most probable. The two groups showed similarities in way that they would examine the patient. The general practitioners referred the patients to the physiotherapists significantly more often than the other way around. The most probable choice of treatment was NSAID's for the general practitioners and movement exercises together with ergonomics for the physiotherapists. Most treatment alternatives had at least 20% of the responders marking a neutral attitude and few treatments were disregarded. We conclude that in Swedish primary care general practitioners and physiotherapists have a uniform diagnostic approach toward patients with subacromial pain but their choice of treatment reflects an uncertainty about the effectiveness of conservative treatments. The questioned pathogenesis of the suggested diagnosis and lack of research regarding the effect of conservative treatments could explain this uncertainty.
Introduction

The prevalence of shoulder pain, defined as shoulder pain of more than 24 hours duration during the last month, has been reported to be 14% in a Swedish middle-aged population\(^1\). In a cross-sectional study by Jacobsson et al\(^2\) subacromial shoulder pain was represented by 7% of the population. Shoulder problems can last a long time and patients often report recurrent problems that persist for more than a year\(^3\). These patients are commonly seen at the primary health care centres (PHCC) and are often offered conservative treatment of different kinds\(^4\). The disability may affect the patient's ability to work and there are considerable socio-economic costs due to sick-leave\(^5\). An early diagnosis and effective conservative treatment might prevent persistent problems and future impairment, an important task for general practitioners (GPs) and physiotherapists (PTs)\(^6\).

In Sweden, primary care is organised in PHCC with different professions involved in the clinical practice and working at the same location or nearby. The GPs and PTs often cooperate in the management of shoulder problems, which can be beneficial, for the patient as recently reported\(^7\). The patients can come in contact with the PT's due to their own initiative or by referral. Less than 5% of the GPs work as private practitioners and approximately 50% of all PTs working in Östergötland are private practitioners outside the PHCCs.

Today there are no reported guidelines in Swedish primary care for managing patients with shoulder problems. Apparently GPs and PTs are obliged to use their individual experience and knowledge.

The study objective was to describe the attitudes among GPs and PTs toward the diagnostic approach and management of patients with a common shoulder disorder in primary care. This knowledge is needed for
the further development and implementation of clinical examination techniques and evidence-based treatments.

**Material and Method**

Two almost equal questionnaires were designed; one for GPs and one for PTs. Differences between the questionnaires existed in the part about alternatives for choice of treatment since this differs between the professions. The questionnaire was mailed to all GPs and PTs, totalling 188 GPs and 71 PTs, working in the county council of Östergötland, Sweden. All PTs were employed by the county council and located at the PHCC or nearby. General practitioners and PTs in private practice were excluded in order to limit the size of the study.

Before the questionnaire was sent out it was pilot-tested on GPs, PTs and one lay person. The questionnaire contained one part with questions about background variables such as gender, age, educational level and years in practice and one part constructed with closed questions. This part contained questions about diagnosis, examination, treatment, sick leave and the use of referral to other professions. The questions were based on a written case representing a typical patient with a common shoulder disorder in primary care. The case symptoms were selected from a review of literature and from clinical cases at the PHCC, see case description. The intention was to briefly describe a patient in order to simulate the first communication with the patient.
**Case description:**

Eric is a 45-year-old dentist. During the past few weeks he has suffered from pain in his right shoulder. Diffuse pain, especially ventral and lateral. No pain at rest, but he experiences pain down the deltoid area during activities.

Using a five point scale with defined end-points, the participants were asked to mark the figure corresponding to their opinion about each item which should be rated independently, for example see figure 1.

The questionnaire was sent out in the beginning of September 1996. Non-responders received a new questionnaire after four weeks and after another month a call to remind them and to get information about the reasons for not responding. The study was ended in December 1996. The total response rate was 71.4%. For GPs 68.6% (129/188) and for PTs 80.3% (56/71). The groups were quite similar concerning their background variables. The PTs were significantly younger (p<0.001) than the GPs, but there were no differences in practice years. Distribution of gender was equal among GPs and a female dominance among the PTs (Table 1).

Both groups were experienced. The GPs were all specialists in general practice and 95% of the PTs had some kind of postgraduate education relevant to the management of patients with musculoskeletal disorders.

In the presentation of results the marked alternatives on the five point scale in each question (Figure 1) were divided into three categories, 1 or 2 called *not probable*, 3 *neutral* and 4 or 5 *probable*.

Descriptive statistics were used to present the results.
Students t-test was used to compare the independent variables. Differences in categorical variables were analysed using Chi square analysis. Level of significance for all testing, p <0.05.

**TABLE 1 Description of the GPs and PTs age, practice years and gender.**

<table>
<thead>
<tr>
<th></th>
<th>Age</th>
<th>Practice years</th>
<th>Gender ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>SD</td>
<td>range</td>
</tr>
<tr>
<td>GPs</td>
<td>46.0</td>
<td>6.0</td>
<td>32-61</td>
</tr>
<tr>
<td>PTs</td>
<td>40.8</td>
<td>8.2</td>
<td>27-56</td>
</tr>
</tbody>
</table>

What cause or diagnosis do you believe explains the patients problems?

<table>
<thead>
<tr>
<th></th>
<th>less probable</th>
<th>more probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>osteoarthritis</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>biceps tendinitis</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>rotator cuff rupture</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>subacromial bursitis</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>frozen shoulder</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>neck disorder</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>rotator cuff tendinitis</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>other diagnosis?</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1. An example from the questionnaire presenting the different diagnostic options*

**Results**

The participants were asked to mark the scale for each suggested alternative. For most questions the internal non-response rate was less than
10%. In the question about what diagnosis explained the patients problems, the alternatives osteoarthritis, frozen shoulder, neck problems and rupture of the rotator cuff had a non-response rate of 10%-15%. In the questions about PTs' treatments the alternatives acupuncture, appliance brackets, TENS (Transcutaneus Electronic Nerve Stimulation) and heat/cold had a non-response rate ranged from 14% to 18%.

The respondents could add alternatives in each question, but this option was rarely used and is therefore not presented.

The diagnosis rotator cuff tendinitis' was marked as the most probable explanation of the symptoms in the case. This diagnosis was marked as probable by 74.3% among GPs and 84.9% among the PTs. The diagnoses rotator cuff rupture, osteoarthritis, neck disorder and frozen shoulder were considered less probable and were marked as probable by less than 20% of the participants. (Figure 2)

Subacromial bursitis and biceps tendinitis were also possible explanations to the symptoms, but were not marked as probable to the same extent as rotator cuff tendinitis. The GPs marked bursitis as probable in 65.5% and biceps tendinitis in 36.5%. For PTs the figures were 51.9% and 41.5% respectively. The neutral markings by the two groups together were 27.5% for bursitis and 31.0% for biceps. (Figure 2)

The two groups were unanimous about what examination procedures they would use (Figure 3), apart from a difference concerning the use of neurological tests. The PTs used this examination significantly (p<0.02) less often than the GPs.
The two groups were unanimous about what findings they expected during examination. More than 80% of the two groups marked the findings painful arc, pain during movements in or above the height of the shoulder, tenderness and positive findings during provocation of the subacromial structures as probable. Least probable was neurological findings. It was marked as less probable by 91.0%. Findings such as weakness and limited range of motion were more equally distributed over the three categories. They were marked as probable by 35-55%, less probable by 28-36% and neutral by 18-28%.
Figure 3. Pattern of physical examinations for GPs and PTs

The GP's were asked to mark the item sick leave. The option "total sick-leave" was marked by 50.5%, "partial" by 18.1% and "no sick-leave" 31.1%. They also marked how long they would put the patient on sick leave. The most frequently chosen time for sick leave was less than two weeks. Totally 72.2% marked this alternative.

Concerning referral to another profession the GPs and PTs most often referred to each other. This was marked by the GPs as probable in 81.3%. The PTs marked this as probable in 33.3%. A significant difference (p<0.001). The other options for referral were occupational therapist (OT), social worker and orthopaedic specialist. Referral to an OT was marked probable by 11.5% and to an orthopaedist by 3.1%. Referral to the social worker was neglected.
NSAIDs were the most probable choice of treatment, marked by 73.4% of the GPs. Injection with corticosteroids into the subacromial space was also quite frequent, marked as probable by 61.0%. Injections into tender points or oral analgesics were marked equally in all three categories. GPs' mark of the neutral category ranged from 21.8% for NSAIDs to 31.8% for corticosteroids in tender points. (Figure 4)

![Figure 4](image)

**Figure 4. GPs choice of treatment of the case**

For PTs, movement exercises and ergonomics were the two most probable choices of treatment, especially movement exercises marked as probable by 81.8%. The PTs had several treatment alternatives to mark as more or less probable, but most were probable choices. The neutral category was marked by 20% in most of the alternatives. (Figure 5)
Since there have been very few reports of previous research with which to compare our results, it is essential to discuss the validity of the chosen method. The choice of using a written case simulation was motivated by earlier researchers who found it suitable when evaluating practice procedures \(^8,9\) but others have criticised the method. Jones et al\(^10\) questioned the validity of written case simulations, especially in the extent to which the responses agreed with or predicted responses to actual clinical encounters. They concluded that a written case simulation can be a good option when measuring attitudes, but there exists no consensus about their ability to evaluate the actual clinical practice. There is always a discrepancy.
when evaluating practice procedures in any other way than monitoring each clinicians actual patient management. This would however be time-consuming and expensive to perform. When using the written case simulation the participating clinicians’ will all face the same case description and this makes comparisons possible. The high response rate and the rarely used option to add alternatives in our study reinforce the validity of the method. In a similar study of family physicians behaviour in the treatment of osteoarthritis, written case simulation was concluded as a highly suitable method\textsuperscript{11}.

An intuitive iterative process of pattern recognition dominates the diagnostic and problem solving process in general practice. To capture the early phases of this process we deliberately limited the information given in the case.\textsuperscript{12} The results support the appropriateness of this since the GPs and PTs took part in the entire problem solving of the written case.

Our results show conformity within and between the groups of GPs and PTs in diagnosis and examination. This strong unanimity indicates that the findings are representative for the entire primary care. The exclusion of GPs and PTs in private practice managing patients with musculoskeletal disorders should not affect the results since their every day work does not significantly differ from the work at PHCC.

The high conformity between the two professions, despite the little information in the case description appears to be a good prerequisite for teamwork. This result may be a consequence of the professions working in the same setting.

The diagnosis rotator cuff tendinitis was marked by both groups’ best explaining the cause of the symptoms.

The use of the word "tendinitis" has recently been questioned since there has been no proven inflammatory pathology in the tendon. Instead the use of the word "tendinosis" has been recommended\textsuperscript{13}, but we have chosen to
keep it since it is still in use in practice. However, controversy exists on the pathogenesis of subacromial pain syndromes and several anatomical structures may be affected. It is unclear whether a pathologic process within the rotator cuff can cause pain without concomitant bursitis or if a subacromial bursitis occurs in this type of patients without changes in the rotator cuff tendons. This controversy may also explain the respondents' uncertainty of the diagnosis subacromial bursitis and biceps tendinitis, which were marked intermediately with a large number of neutrals (Figure 2).

The opinion of the probable use of almost all examination alternatives corresponds well with the main areas in shoulder examination recommended by Cyriax\textsuperscript{14}. The marked findings were regarded as relevant to the case. The use of impingement sign was first described by Neer in 1983\textsuperscript{15} and considered to be a sensitive test to diagnose subacromial impingement. The association between the diagnosis of rotator cuff tendinitis and a positive impingement sign is questionable since an impingement not necessarily implies rotator cuff tendinosis.

The rate of referrals showed significantly more referrals from the GPs to the PTs. This could be explained by referrals in different phases of the management, since the questionnaire did not clarify this. Another explanation could be that PTs have more treatment alternatives to try before they refer to another profession.

The choice of treatment is naturally related to the profession and therefore specific for each group. The GPs marked NSAIDs as the most probable choice, but the other alternatives were also probable with rather large proportions of neutrals (Figure 4). The PTs most probable treatment was ergonomics and movement exercises, but also several other options were marked as probable. (Figure 5)
The results for both groups reflect a broad spectrum of probably used treatments, especially the PTs who have several different methods to choose between or to combine in practice. Few treatments were disregarded and since there is no consensus about the pathogenesis, this indecisiveness could be a natural consequence. Many of the treatments have no evidence base, and this could explain the large representation of neutrals in the majority of the alternatives. (Figure 4 and 5)

The most common diagnosis and management that were found in this study are very similar to the observational study in Dutch general practice. The study has fulfilled the intention to receive a detailed description of the attitudes toward the diagnostic approach and management of a patient with a common shoulder disorder diagnosed by the respondents as subacromial pain. We conclude that in Swedish primary care GPs and PTs have a uniform diagnostic approach although the suggested diagnoses may lack scientific foundation. Consequently their choice of treatment are based on experience. This is reflected by the uncertainty about which treatments that are most effective and few treatments are ruled out. These findings reinforce the need for evaluation of diagnostic procedures and effectiveness of conservative treatments used in primary care. This will lead to some treatments being recommended and several others being excluded or at least chosen with caution. Such a prudent approach could only benefit patients diagnosed as subacromial pain.

Acknowledgements to:
The County Council of Östergötland, Sweden
The Faculty of Health Sciences, Linköping, Sweden
References


