

# A Case of Acute Low Back Pain

Jürgen C Abela

A forty-year old gentleman, walks into your clinic complaining of low back pain, which has been present for the past four days. The pain is quite severe and poorly localized, forcing the patient to abstain from work. The patient is not on any medication and has no relevant past medical history, except for an episode of back pain years back. He is annoyed by the pain and by the fact that he had to stop working.

What would you do?

## Introduction

Acute low back pain is an extremely common complaint, with a one-month prevalence of 35-37% and a slightly higher prevalence in females<sup>1</sup>. It poses a challenge to the clinical and communicating skills of the clinician. The important points which this consultation raises are:

- The need to exclude uncommon serious causes of acute low back pain.
- The need to identify risk factors that may lead to chronic low back pain and related co-morbidities.
- Addressing patient concerns and treatment of symptoms.
- Using investigations when truly needed and not as an escape route.

Many structures in the back may give rise to pain (Table 1), occasionally with similar distribution. Satisfactory treatment of low back pain depends on an accurate diagnosis. However, identifying the actual structure causing the pain is often not possible because of the difficulty in localising the source of pain. This needs to be understood by both the patient and the doctor.

## Assessment

The initial assessment should start by exploring the ideas, concerns and expectations of this gentleman<sup>2</sup>. Many patients are particularly troubled by the pain and movement restriction, but some are more troubled by the possibility of serious disease.

Back pain triage<sup>3</sup> is the medical model of diagnosis to exclude serious pathology and at the same time identify clinical syndromes. History and examination are used to identify diseases of an inflammatory, neoplastic, infective or metabolic nature, in addition to specific causes of mechanical pain, symptomatic disc prolapse, stenosis and instability. The so-called *Red flag* symptoms and signs are indicators of serious disease (Table 2). A thorough examination will also serve to further allay the patient's fears. Unfortunately studies show that up to 27% of GP's do not examine for limb reflexes when dealing with back pain, and the majority do not check for muscle weakness or sensation<sup>4</sup>.

In the case of systemic back pain, examination should include the testicles and prostate in males and breasts in females, since neoplasms of these organs metastasise preferentially to the skeleton.

**Table 1:** The more common causes of Back Pain

### Musculoskeletal Conditions

Ligamentous Strain  
Muscle/soft tissue injury  
Subluxed facet joint  
Sacroiliac strain  
Prolapsed  
intervertebral disc  
Fracture  
Scoliosis

### Degenerative Conditions

Osteoarthritis  
Spondylosis

### Neoplastic conditions

Primary  
or secondary growth

### Referred pain

Gynaecological  
Renal  
Other abdominal organs

### Infection

Herpes zoster  
Osteomyelitis

### Psychological

Depression  
Malingering

### Metabolic

Osteoporosis  
Paget's Disease

### Rheumatic conditions

Rheumatoid arthritis  
Ankylosing spondylitis

**Jürgen C Abela** MD, MRCP

Department of Primary Care, Harper Lane, Floriana, Malta  
Email: jurgenabela@waldonet.net.mt

From *Tutorials in General Practice* by Mead and Patterson, 1999, 3<sup>rd</sup> ed. Churchill Livingstone.

Identification of risk factors (such as dissatisfaction with employment and low levels of physical activity) on the part of the patient associated with a less favourable outcome is another important aspect of assessment.

*Yellow flags* (Table 2) are beliefs or behaviours on the part of the patient that may predict a poor outcome. Useful interview prompts to identify yellow flags are listed in Table 3.

An issue particularly relevant to certain populations is the need of investigations, mainly radiography, to put the patient's mind at rest, hopefully help in the recovery process and occasionally serve as an escape route for the clinician. Indeed, radiography for first presentation of back pain is not associated with a better clinical outcome<sup>5</sup> and the minor possibility of improved patient satisfaction should be balanced against the high radiation dose involved<sup>6</sup>. Also, it is a known fact that there is little correlation between radiologically detectable degenerative changes and symptoms<sup>7</sup>, and that there is low yield<sup>8</sup>. Thus radiography should ideally be considered either when serious disease is suspected, or when the patient fails to improve.

Blood tests such as Erythrocyte Sedimentation Rate (ESR), C-reactive protein, a blood count and a biochemical screen (uric acid, alkaline phosphatase, calcium and phosphate levels) may be ordered if an inflammatory or neoplastic process is suspected.

Undue distress, depressive and anxiety disorders may accompany or even complicate back pain, and need to be kept in mind when assessing patients.

| <b>Table 2: Red and Yellow Flags in back pain "Triage"</b>                                     |  |
|--|--|
| <b>Red Flags</b>   | <b>Yellow Flags</b>  |
| Presentation < 20 years or onset >55 years   | Belief that back pain is harmful or potentially severely disabling                         |
| Non-mechanical Pain  | Fear-avoidance behaviour and reduced activity levels                                       |
| Thoracic Pain  | Tendency to low mood and withdrawal from social interaction                                |
| Past History<br>• Ca,<br>• Steroids<br>• HIV   | Expectation of passive treatment(s) rather than belief that active participation will help |
| Unwell and weight loss   |  |
| Widespread neurological disturbance  |  |
| Structural deformity   |  |
| Cauda Equina Syndrome<br>• Sphincter disturbance<br>• Gait disturbance<br>• Saddle anaesthesia |  |

*Adapted from Guidelines for the Management of Acute Back Pain, RCGP 1996.*

## Management

Besides the purely medical issues mentioned, a patient presents as a person, with many concerns and related problems which also need to be addressed in this consultation, and here is where a GP, more than any other specialist, has a crucial role.

It is important to establish an *agreed* management plan with the patient. Analgesia should be high on the doctor's agenda as indeed the first concern of the patient is pain relief. Non-steroidal anti-inflammatory drugs (NSAIDs)<sup>9</sup> or paracetamol effectively decrease low back pain. Recently, COX-2 inhibitors have been introduced, and these are the drugs of choice given the equivalence to NSAIDs regarding analgesia and better gastrointestinal side-effect profile<sup>10</sup>.

Alternatively, weak opioid-paracetamol mixtures may be used when the above fail. Strong opioids should be avoided. Using analgesics regularly and not on *as required* basis should be encouraged as the former is a more effective management strategy.

Muscle relaxants are infrequently used in the treatment of back pain. However they do effectively reduce low back pain<sup>11</sup>. There are various types of muscle relaxants, the most commonly used being diazepam, baclofen and thiocolchicoside.

In the eventuality that the patient suffers from simple back pain, he should be encouraged to continue with ordinary activity and avoid bed-rest<sup>12</sup>.

The evidence for the effectiveness of further treatment, such as manipulation, acupuncture, lumbar supports and back exercises is conflicting and not consistent.

People who suffer from back pain have an associated increased incidence of psychological distress factors<sup>13</sup>. The risk of chronicity, in the case of non-specific back pain is reduced by

- Paying attention to the psychological aspects of symptom presentation with particular emphasis on identification of yellow flags
- Avoiding unnecessary, excessive or inappropriate investigations, as these may further enhance fear of serious disease
- Avoiding inconsistent care as this may cause the patient to be overcautious
- Giving advice about how to prevent recurrence (good posture, sensible lifting and not lifting excessive loads)

**Table 3: Useful interview prompts to elicit "Yellow Flags"**

- What do you understand is the cause of your back pain?
- What do you think will help you?
- How are the others responding to your back pain (employer and family)?
- What have you done so far to cope with your back pain?
- Have you had time off in the past due to back pain?
- When do you think you will be able to return to work?

Future return to work is another important topic which needs to be tackled. Any depressive or anxiety disorder should be treated accordingly. Giving positive messages in the case of simple back pain will help.

Given the many issues involved in this particular scenario, Pendleton's Consultation Model<sup>14</sup> is an important and useful tool to use. It is made up of seven steps, which are summarized below:

1. *Defining reason for patient attendance* – including ideas, concerns expectations and effects of the problem
2. *Consider other problems* – including risk factors which may be also present
3. *Action* – Choosing with the patient an appropriate action for each problem
4. *Understanding* – Achieving a shared understanding with the patient
5. *Active Management* – Involving the patient in the management plan, encouraging him to take appropriate responsibility
6. *Resources* – using time effectively
7. *Relationship* – Establishing a relationship with the patient which helps to deal with possible complications and achieve other tasks.

The last five steps are particularly suitable, since they allow patient participation and the possibility of follow-up in case symptoms do not resolve. The clinician is also given a further opportunity to discuss the situation with the patient, review diagnosis and, if need be, order investigations.

It is best to review the patient after a week or ten days have elapsed.

Referral should be considered if:

1. Red flags are present at the time of assessment. Urgency depends on the particular situation of the patient.
2. Cauda equina syndrome is diagnosed. This needs to be assessed and treated.
3. There is failure to improve, particularly in the case of nerve root pain.

## Prognosis

The majority of cases of acute low back pain are due to "simple", "non-specific" back pain. 58% improve rapidly in the first month, while further improvement is experienced for up to three months. 73% may have a recurrence within 12 months<sup>15</sup>. In the case of sciatica, the natural history of disc prolapse is usually one of spontaneous recovery with time.

## References

- 1 Papageorgiou AC, Croft PR, Ferry S, Jayson MIV, Silman AJ. Estimating the prevalence of back in the general population. Evidence from the South Manchester Back Pain Survey. *Spine* 1995; 20:1889-94.
- 2 Tate, P.2001. *The Doctor's Communication Handbook*. 3rd. edition. Radcliffe Medical Press.
- 3 Royal College of General Practitioners. (1996). *Clinical Guidelines for the Management of Acute Low Back Pain*. Available from <http://www.rcgp.org.uk/clinspec/guidelines/backpain/backpain19.asp> (Accessed 23rd December 2003)
- 4 Little P, Smith L, Cantrell T, Chapman J, Langridge J, Pickering R. General Practitioners' management of acute back pain: a survey of reported practice compared with clinical guidelines. *BMJ* 1996; 312:485-488.
- 5 Kerry S, Hilton S, Dundas D, Rink E, Oakeshott P. Radiography for low back pain: a randomised controlled trial and observational study in primary care. *BJGP* 2002; 52: 469-474.
- 6 Kendrick D, Fielding K, Bentley E, Kerslake R, Miller P, Pringle M. Radiography of the lumbar spine in primary care patients with low back pain: randomised controlled trial. *BMJ* 2001; 322:400-405
- 7 Magora A, Schwartz A. Relation between low back pain syndrome and X-Ray findings. 1. Degenerative osteoarthritis. *Scand J Rehabil Med* 1976; 8:115-25.
- 8 Jenner JR, Barry M. *ABC of Rheumatology: Low Back Pain*. *BMJ* 1995; 310:929-932.
- 9 Tulder MW, Scholten RJPM, Koes BW, Deyo RA. Non-steroidal anti-inflammatory drugs for low back pain (Cochrane Review). Available from <http://www.cochrane.org/cochrane/revabstr/AB000396.htm> (Accessed on 20th December 2003).
- 10 Bombardier C, Laine L, Reicin A *et al.* for the VIGOR Study Group. Comparison of Upper Gastrointestinal toxicity of Rofecoxib and Naproxen in Patients with Rheumatoid Arthritis. *N Engl J Med* 2000, 343: 1520-1528.
- 11 Tulder MW van, Tuoray T, Furlan AD, Solway S, Bouter LM. Muscle relaxants for non-specific low back pain (Cochrane Review). Available from <http://www.cochrane.org/cochrane/revabstr/AB004252.htm> (Accessed on 20th December 2003).
- 12 Malmivaara A, Hakkinen U, Aro T. *et al.* The treatment of acute low back pain – bed rest, exercises, or ordinary activity. *N Engl J Med* 1995; 332:351-355.
- 13 Main CJ, de C Williams A. *ABC of Psychological Medicine*. Musculoskeletal Pain. *BMJ* 2002; 325:534-537.
- 14 Pendleton, Schofield, Havelock, Tate. 1984. *The consultation – An approach to Teaching and Learning*. Oxford University Press.
- 15 Pengel LHM, Herbert R, Maher CG, Refshauge KM. Acute Low Back Pain: systematic review of its prognosis. *BMJ* 2003; 327:323-331.