Patients with low back pain often present to emergency departments (EDs) for pain relief and sometimes for diagnoses they have been unable to obtain elsewhere.

Nurse practitioners should familiarise themselves with the symptoms of meralgia paresthetica so that they can make differential diagnoses and offer the relevant management. This article describes the condition, its causes and some conservative management techniques.

**Keywords**
Lower back pain, differential diagnosis, patient history

PATIENTS WITH low back pain often present to emergency departments (EDs) for pain relief and sometimes for diagnoses they have been unable to obtain elsewhere.

Nurse practitioners (NPs) should consider differential diagnoses ranging from cauda equina, which applies to the most severe conditions, to simple, muscular back pain, which applies to the more benign. One of the most common diagnoses NPs are likely to make for patients with lower back and leg pain is sciatica (Konstantinou and Dunn 2008).

Sciatic pain is defined generally as pain radiating to the leg, often below the knee to the toes. It is usually associated with numbness or, if the same dermatome of the nerve root is affected, paresthesia (Konstantinou and Dunn 2008).

Sciatica, however, is a symptom rather than a specific diagnosis. Its cause is often irritation or inflammation around the affected nerve root (Kobayashi et al 2005).

Another possible, and more specific, diagnosis that NPs can offer patients who have pain in their legs with associated paresthesia and numbness is meralgia paresthetica, which has similar symptoms to other types of lower-back conditions in which the pain is not noticed in the back such as lumbar-disc herniation (Trummer et al 2000) and lumbar radiculopathy (Kallgren and Tingle 1993).

Meralgia paresthetica, which occurs in about one in every 2,300 patients (van Slobbe et al 2004), is less common than sciatica and lower back pain, and so is not widely known by NPs.

**Meralgia paresthetica**
Meralgia paresthetica is a mononeuropathy of the lateral femoral cutaneous nerve (LFCN). The condition was first described in the late 19th century by German surgeon Werner Hager (1895). Also described in the same year by German neuropathologist Martin Bernhardt (1895) and, two weeks later, by Russian neurologist Vladimir Roth (1895), it came to be known as Bernhardt-Roth syndrome (Ivins 2000, Pearce 2006).

Roth coined the term ‘meralgia paresthetica’ derived from the Greek ‘meros’ meaning ‘thigh’ and ‘algos’ meaning ‘pain’ (Dias Filho et al 2003), and noted the condition in cavalrymen who wore their belts so tightly that it compressed the femoral cutaneous nerve (Pearce 2006).

**Anatomy** The lateral femoral cutaneous nerve arises from the dorsal branches of the second and third lumbar roots, passes behind the psoas muscle, which runs beneath the iliac fascia (Ivins 2000), then crosses the iliacus muscle, which is a branch of the iliofemoral artery. It then crosses the deep circumflex iliac artery, passes through
an opening medial to the anterior superior iliac spine and under the inguinal ligament (Grothaus et al 2005).

As the nerve emerges from the pelvis, it divides into anterior and posterior branches. The anterior branch remains beneath the thigh fascia, becomes superficial and supplies sensory function to the skin of the thigh, down to the knee. The smaller, posterior branch provides sensory function from the greater trochanter to the area supplied by the anterior branch (Erbay 2002).

Roth noted that the lateral femoral cutaneous nerve was vulnerable to pressure or stretching where it emerges from beneath the psoas muscle (Ivins 2000). Damage to the nerve has been noted also in the area where it enters the thigh under the inguinal ligament (Jones 1974, Dias Filho et al 2003, Low and Stephenson 2005).

Causes and symptoms The exact cause of meralgia paresthetica is uncertain (Low and Stephenson 2005), but possible causes reported in the literature (Ivins 2000, Erbay 2002, Parmar 2003, Low and Stephenson 2005, Yang et al 2005) include:

- Obesity.
- Tight clothing around the belt area.
- Pregnancy.
- Trauma, including trauma after surgery.
- Abnormal posture.
- Regional muscle spasms.
- Seat belts.

Typical symptoms described by patients and recorded in the literature (Macnicol and Thompson 1990, Ivins 2000, Caramelli et al 2006) include:

- Dull ache.
- Numbness.
- Burning.
- Coldness.
- Lightening pain.
- Tingling.
- Anaesthesia.
- Localised hair loss.

These symptoms occur only in the lateral aspect of the thigh that is enervated by the lateral femoral cutaneous nerve, but can be uni- or bilateral.

Jones (1974) reports that patients often complain of hyperesthesia when the skin is stroked lightly and tenderness is localised to where the nerve pierces the fascia, next to the anterior superior iliac spine. Symptoms of meralgia paresthetica can be aggravated by extension of the hip, walking (Margo et al 2003) and lying down (Caramelli et al 2006).

Diagnosis Despite its widespread recognition at the end of the 19th Century, meralgia paresthetica has become an obscure diagnosis (Ivins 2000).

Diagnosis can be based on patient histories (Caramelli et al 2006), and the literature describes two tests that NPs can take to help them confirm the condition (Box 1).

**Box 1 Tests to confirm meralgia paresthetica**

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
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<tbody>
<tr>
<td>Tinel’s sign</td>
<td>The nurse practitioner stimulates the lateral femoral cutaneous nerve by finger tapping close to the anterior superior iliac spine. If the patient feels a tingling sensation, the result is deemed positive (Parmar 2003)</td>
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<tr>
<td>Pelvic compression test</td>
<td>This is a non-invasive test and is said to have 95 per cent sensitivity and 93 per cent specificity. The patient lies on his or her non-symptomatic side and is asked to place a hand on the affected area. The nurse practitioner then applies a lateral compressive force on the pelvis for 45 seconds and asks the patient to report any change in symptoms. If symptoms improve during this test, the result is deemed positive (Nouraei et al 2007).</td>
</tr>
</tbody>
</table>
Neurological and electrophysiological studies or tests can also be taken to confirm diagnosis (Erbay 2002), but they require specialist equipment and so are beyond the scope of ED NPs.

**Treatment** According to Yang et al (2005), conservative management of meralgia paresthetica is effective in more than 90 per cent of patients. Recommended conservative methods (Ivis 2000, Erbay 2002, Margo et al 2003) include:

- Correction of mechanical or postural problems, for example by wearing loose clothes or losing weight.
- Administration of non-steroidal anti-inflammatory drugs.
- Application of ice.
- Bed rest until pain has eased and patient is mobile.
- Use of nerve blocks.
- Corticosteroid injections given next to the anterior superior iliac spine near where the LFCN emerges.

When meralgia paresthetica occurs in pregnancy, conservative management is always indicated as the symptoms tend to resolve after women give birth (Ivis 2000). Patients for whom conservative management is unsuccessful should be referred for surgical treatment, where either neurolysis or transection of the LFCN will be considered (Erbay 2002, Yang et al 2005).

**Conclusion**

Meralgia paresthetica is a benign condition the symptoms of which can mimic several other conditions that cause lower-back pain. However, careful examination and history taking can help NPs distinguish it from these other causes of back pain.

Once a diagnosis of meralgia paresthetica is made, management is usually straightforward as most patients can be treated conservatively.

It is important that practitioners familiarise themselves with the symptoms and management of this condition, and develop the skills needed to explain diagnoses and treatment options to patients.

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**References**

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Meralgia paresthetica

How to use this assessment

This self-assessment questionnaire will help you to test your knowledge. It comprises ten multiple choice questions that are broadly linked to the feature starting on page 16. There is one correct answer to each question. You can test your subject knowledge by attempting the questions before reading the article, and then go back over them to see if you would answer any differently, or you might like to read the article before trying the questions. The answers will be published in the next issue of Emergency Nurse.

When you have completed your self-assessment, cut out this page and add it to your professional portfolio. You can record the amount of time it has taken you to complete and add comments in the space provided.

1. Sciatica is a:
   a) Diagnosis
   b) Symptom
   c) Sign
   d) All of these

2. Sciatic pain is generally only felt:
   a) In the lower leg and toes
   b) Across the lumbar spine and down one or both legs
   c) Around the knee
   d) Down the back of the thigh, possibly including the knee and toes

3. Which of the following does not feature in lower back problems of neurological origin?
   a) Paraesthesia
   b) Numbness
   c) Pain
   d) Pallor of the affected limbs

4. Meralgia paresthetica specifically affects the:
   a) Lateral femoral cutaneous nerve
   b) Medial femoral cutaneous nerve
   c) Sciatic nerve
   d) All of these

5. Tinel’s test can confirm meralgia paresthetica by the occurrence of paraesthesia immediately after:
   a) Tapping close to the anterior superior iliac spine
   b) Passive stretching of the psoas muscle
   c) Tapping over the inguinal ligament
   d) None of these

6. Possible causes of meralgia paresthetica do not include:
   a) Wearing tight belts or clothing
   b) Vigorous exercise
   c) Pregnancy
   d) Obesity

7. Meralgia paresthetica may be exacerbated by:
   a) Extension of the hip
   b) Walking
   c) Lying down
   d) All of these

8. Treatment options for meralgia paresthetica do not include:
   a) Nerve block
   b) Oral anti-inflammatory drugs
   c) Avoiding tight clothing
   d) None of these

9. Conservative management of meralgia paresthetica successfully treats about what percentage of patients?
   a) 50
   b) 60
   c) 75
   d) 90

10. To treat meralgia paraesthetica, corticosteroid injections may be given into:
    a) The sacro-iliac joint
    b) Where the affected nerve emerges at the anterior superior iliac spine
    c) The inguinal ligament
    d) The psoas muscle

This activity has taken me _____ minutes/hours to complete. Now that I have read this article and completed this assessment, I think my knowledge is:

Excellent □ Satisfactory □ Poor □
Good □ Unsatisfactory □

As a result of this I intend to:

____________________________________________________________________________________
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____________________________________________________________________________________

Answers to Test your knowledge number 21
1. c, 2. b, 3. c, 4. d, 5. b, 6. d, 7. b, 8. c, 9. b, 10. b