DESCRIPTION

We describe a case of three middle-aged women with acute-onset low back pain. Clinical examination was not contributory. Plain radiographs of the pelvis were normal in two patients (figures 1 and 2) and showed signs of sacroiliitis in one patient (figure 3). Subsequently, we performed MRI, which revealed unilateral insufficiency fractures of the sacrum in all patients (figures 4–6).

Insufficiency fractures of the sacrum occur when normal stresses are placed on bones with reduced mineral content and elastic resistance. Most fractures occur in older patients, especially women. Predisposing factors include osteoporosis, rheumatoid arthritis, prolonged glucocorticoid treatment, pelvic radiotherapy and metabolic bone diseases. Clinical presentation is not specific and highly variable.

Plain radiographs are usually not diagnostic because sacral lesions are often obscured by bowel gas. Bone scintigraphy is a sensitive technique, but the classical H-sign, consisting of fractures of both the sacral ala and a horizontal fracture of the sacral body, is present in only 32% of scintigraphies. Because of various incomplete patterns, it is difficult to distinguish fractures from sacroiliitis, osteomyelitis or metastatic bone disease. MRI is sensitive to changes in signal from bone marrow oedema that results from...
sacral fractures. These changes in signal are, however, not specific and the lesions can be misinterpreted as metastatic disease. CT may be helpful in confirming the diagnosis and can exclude inflammatory and malignant processes. In our three patients, diagnosis could be made by MRI.

**REFERENCES**


**Figure 3** Plain radiograph of patient 3 showing signs of sacroiliitis on the right site.

**Figure 4** MRI image of patient 1 showing an unilateral (left) insufficiency fracture of the sacrum.

**Figure 5** MRI image of patient 2 showing an unilateral (left) insufficiency fracture of the sacrum.

**Figure 6** MRI image of patient 3 showing an unilateral (right) insufficiency fracture of the sacrum.

**Competing interests** None.

**Patient consent** Obtained.
This pdf has been created automatically from the final edited text and images.

Copyright 2011 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit http://group.bmj.com/group/rights-licensing/permissions.

BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Please cite this article as follows (you will need to access the article online to obtain the date of publication).

Joosen D, Jacobs MC, Nijs R. Insufficiency fractures of the sacrum. BMJ Case Reports 2011;10.1136/bcr.12.2010.3630, date of publication

Become a Fellow of BMJ Case Reports today and you can:
► Submit as many cases as you like
► Enjoy fast sympathetic peer review and rapid publication of accepted articles
► Access all the published articles
► Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow.