Reviewer's report

Title: Primary pyogenic spondylitis following kyphoplasty: a case report

Version: 3 Date: 30 May 2010

Reviewer: Viola Bullmann

Which of the following following best describes what type of case report this is?: Unexpected or unusual presentations of a disease

Has the case been reported coherently?: No

Is the case report authentic?: Yes

Is the case report ethical?: Yes

Is there any missing information that you think must be added before publication?: Yes

Is this case worth reporting?: No

Is the case report persuasive?: No

Does the case report have explanatory value?: Yes

Does the case report have diagnostic value?: Yes

Will the case report make a difference to clinical practice?: Yes

Is the anonymity of the patient protected?: Yes

Comments to authors:

This is an interesting Case report. The authors present a case of pyogenic spondylitis of the first lumbar vertebra 6 weeks after kyphoplasty intervention in an osteoporotic fracture.

revision:

1. Introduction: Page 3, Line 1-2:

   The two prospective randomized vertebroplasty studies, published in New England journal should be mentioned here.

2. Case Presentation: Page 4, Line 3-8:

   What is the argument for conservative treatment? In my opinion there is a clear indication for primary operative treatment, as the authors mentioned on page 3...."hyposthesia.....x-ray demonstrated destruction and subtotal resorbtion of the
first lumbar vertebra....cement filling was displaced....compression of the lumbar spinal cord...”.

These are four reasons for primary operative treatment. Please explain your decision for conservative treatment more detailed and critical.

3. Case Presentation: Page 4, Line 9-17:
The authors did an two staged posterior-anterior operative procedure. In general I agree with this procedure, but there are two critical points.
a.) why did the authors performed the anterior debridement and corporectomy 10 days after initial primary posterior instrumentation. In my opinion this is too late, because the bony and PMMA components still were compressing the spinal canal from anteriorly since the anterior decompression was done.
b.) The pressure to the spinal canal, following neurological defecits, was induced from anteriorly. There was no epidural abscess, therefore please explain why do you did laminectomy. In my mind the authors did not have decompression effect from posteriorly, they only induced more instability.

4. Discussion: Page 4, Line 26-29:
The authors pointed out, that this is the first case report of pyogenic spondylitis after kyphoplasty, but there are 10 reports on infection after vertebroplasty. Please explain, what is the difference in wether you use the standard vertebroplasty-technique or the additional balloon-kyphoplasty technique. In my mind “the infection way from the skin to the vertebral body is completely the same.”

5. Discussion: Page 4, Line 31:
The reference 5 is a product information of the industry. This should not be cited in a science paper.

6.) Discussion: Page 5, Line 27-31
If single shot antibiotic did not prevent infection in this case, what are the suggestions of official guidelines or in the literature. Please add!

7.) Discussion:Page 5, Line 32-34
It is a hypotheese, that PMMA with antibiotics resolve the problem. There are no data for the spine. Please discuss this point more critically.

8.) Discussion: Page 6, Line6-9:
another reason for severe back pain after kyphoplasty without adjacent segment fractures could be necrosis in the vertebra caused by the cement injection. Please discuss!

9.) Figures (Figure 3)
Please add the sagittal MRI in order to show the kyphotic deformity and the spinal cord compression.

10.) Figure (Figure 4)
Please select for 24 month control a better sagittal plane x-ray. This one assume, that the obelisc cage is dislocated in the vertebral body of L2 and that the pedicle
screws at T11 begin to dislocate.

**Quality of written English:** Acceptable

**Declaration of competing interests:**

'I declare that I have no competing interests'