Spontaneous Fractures of Pelvis in Rheumatoid Arthritis

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Spontaneous fractures occurring in the long bones and neck of the femur are well recognized in patients with rheumatoid arthritis (Baer, 1946; Haider and Storey, 1962; Devas, 1965).

We report six cases of rheumatoid arthritis with fractures of the innominate bone. They were associated with little or no trauma, and only one of the patients was receiving corticosteroid therapy.

| Patients and Treatment |

Details of the patients are given in the Table and their fractures are illustrated in Figs. 1 to 3. The first three patients, who had severely involved hip joints, had sustained fractures through the acetabulum. The fourth patient had a fracture of the right ilium, and the fifth, amazingly, had fractured the ilium and pubic rami on the right. In the last patient the fracture was through the right superior pubic ramus and subsequently also through the acetabulum.

Five of the patients denied any form of trauma. One noticed the pain suddenly when she rose from her hairdresser's chair. The other four did not remember a sudden event but complained of more than usually severe pain in the region of the hip for one to three weeks. Walking had become difficult or impossible. In only one patient (Case 4) was there any form of trauma. She had stumbled over the edge of a carpet and fallen.

### Details of the Six Patients

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Age</th>
<th>Sex</th>
<th>Duration of Arthritis (years)</th>
<th>Rose-Waaler Titre</th>
<th>E.S.R. (mm/hr)</th>
<th>Serum Calcium (mg/100 ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75</td>
<td>F</td>
<td>7</td>
<td>1/2,048</td>
<td>53</td>
<td>8-6</td>
</tr>
<tr>
<td>2</td>
<td>40</td>
<td>F</td>
<td>9</td>
<td>1/1,024</td>
<td>53</td>
<td>8-6</td>
</tr>
<tr>
<td>3</td>
<td>60</td>
<td>F</td>
<td>50</td>
<td>1/512</td>
<td>54</td>
<td>8-9</td>
</tr>
<tr>
<td>4</td>
<td>40</td>
<td>F</td>
<td>5</td>
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<tr>
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<td>F</td>
<td>14</td>
<td>Negative</td>
<td>34</td>
<td>10-2</td>
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<tr>
<td>6</td>
<td>59</td>
<td>F</td>
<td>2</td>
<td>Negative</td>
<td>34</td>
<td>10-2</td>
</tr>
</tbody>
</table>

### References


One patient (Case 6) was receiving prednisone 9 mg daily. None of the others had received systemic corticosteroids but one (Case 2) had been given an intra-articular injection of hydrocortisone into the affected hip joint four months before the fracture occurred.

All patients had definite or classical rheumatoid arthritis by the American Rheumatism Association criteria, and none had positive tests for rheumatoid factor in high titre.

In no case was there a history of gastrectomy or evidence of malabsorption or malignant disease. Serum calcium estimations were normal in all cases.

Treatment varied according to the severity of the pain. Three of the patients with fractures of the acetabulum were able to maintain mobility with additional analgesic drugs and in one case a hip crutch. One to two years after sustaining the fractures these three patients underwent total hip replacement. They were all followed for over a year after the operations, which were fully successful. One patient suffered a spontaneous fracture of the neck of the opposite femur six months after the arthroplasty. The other three patients were treated with bed rest until relatively pain free and then mobilized, two without difficulty. In one elderly patient mobilization was a prolonged and difficult process.

Comment

The importance of these fractures lies in their recognition. It is tempting to accept an increase in pain in the region of a diseased hip joint as due to exacerbation of arthritis. When there is trauma or a sudden increase in pain a fracture is likely to be suspected. But with the slower onset of pain, as occurred in four of these patients, the diagnosis will not be made unless radiological examination is carried out. In two of the cases described by Haider and Storey (1962) there was evidence that the fractures developed gradually.

Protrusio acetabuli is a particular feature of the rheumatoid hip, and it is not surprising that fractures occur in the narrow rim of bone which remains. Proximity to a diseased joint, however, cannot explain fractures in other parts of the pelvis. Stress fractures occur not uncommonly in older people without rheumatoid arthritis and are thought to be related to senile osteoporosis (Devass, 1966). Patients with rheumatoid arthritis suffer from osteoporosis whether they are treated with corticosteroids or not (Duncan et al., 1965; Saville and Kharmosh, 1967), and it is likely that this is an important cause of these fractures.

Our experience suggests that patients with acetabular fractures are more easily managed if mobility is maintained, though this is not always possible. Total hip replacement appears to be successful even in cases with severe acetabular protrusion.

We wish to thank Mr. D. L. Evans, who performed the total hip replacements, and Mr. P. M. Aichroth for their advice and help, and also the department of medical photography and illustration for preparing the figures.

References

Baer, G. J. (1940). Arrows of the Rheumatic Diseases, 2, 269.