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Atlanto-axial instability in psoriatic arthritis: a case report

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Psoriatic arthritis involving the spine is uncommon. However, when it does, atlanto-axial instability may occur. Clinical and radiographic aspects of psoriatic arthritis are reviewed and illustrated with a case report. (JCCA 1988; 32(2): 85–87)

KEY WORDS: atlanto-axial instability, psoriasis, psoriatic arthritis, chiropractic, manipulation.

L'arthrite psoriatique envahit rarement l'épine dorsale. Cependant, lorsque le cas se présente, une instabilité atlanto-axiale peut se produire. Les aspects cliniques et radiographiques de l'arthrite psoriatique sont revus et illustrés dans un rapport de cas. (JCCA 1988; 32(2): 85–87)

MOTS CLÉS: instabilité atlanto-axiale, psoriasis, arthrite psoriatique, chiropraxie, manipulation.

Introduction

Psoriatic arthritis is considered a distinct form of inflammatory arthritis found in Caucasian individuals suffering from psoriasis. These individuals are seronegative for rheumatoid factor and their laboratory tests are frequently nonspecific for this disease.[1,2] The prevalence of psoriasis has been reported to range from 0.5–2.0% of the population, and as many as 7% of these people may suffer from some type of inflammatory joint disease.[1,2] There does not appear to be any preference for males or females, as the occurence appears to be nearly equal.

Of those affected, the interphalangeal joints of both the upper and lower extremity are most commonly involved, although it is not uncommon for the process to extend to the spine. Sacroilitis is reported either unilaterally or bilaterally, in about 20% of these individuals.[2] The typical radiographic sequence seen in the sacroiliac joint includes blurring of the subchondral margins, erosions, narrowing of the joint space and reactive sclerosis. This may continue to full bony ankylosis.[3]

In the spine, the characteristic finding is the development of coarse asymmetrical syndesmophytes along the vertebral margins. This appearance tends to be segmental, hence, major portions of the spine are often skipped. The syndesmophtyes tend to arise from a broad zone frequently on the lateral or postero-lateral vertebral mid-bodies. The intervertebral disc space is usually not affected. Hyperostosis is usually asymmetric and may bridge to the adjacent vertebral body. The characteristic areas of spinal involvement are the upper lumbar, lower thoracic and cervical regions.[4]

In addition to the syndesmophytes, para-vertebral ossification is also common. In these circumstances new bone is seen as a fluffy arc adjacent to but separate from contiguous vertebral bodies. This does not commonly occur in the cervical spine.[4]

Although considered rare, atlanto-axial instability is a major complication of psoriatic arthritis. Unlike rheumatoid arthritis, the inflammatory reaction leading to laxity of the transverse ligament, may predispose the patient to instability and frank subluxation of the atlanto-axial joint. Severe erosion of the odontoid may then ensue, with the eventual fusion of the apophyseal joint.[2,4,5]

Further to the spinal changes, the obvious skin changes will be seen. These are frequently seen at the elbow or the knee or at the umbilicus, scalp or perineum. The skin rash usually precedes the arthritis except in about 15–20%, where the peripheral arthritis precedes the rash.[2] More important than the skin rash is onychodystrophy, found in 80% of patients with psoriatic arthritis. The typical changes seen in the nails include pitting, horizontal ridging, and lysis.[2,3] It is worthwhile to note that the temporal relationship between the nails and the peripheral joint arthritis is more significant than that of skin rashes.

Further to the skin changes, the clinician must also be aware of further systemic findings seen in other spondyloarthropathies, namely: conjunctivitis, iritis, cardiac conduction defects, aortic insufficiency, gastrointestinal and renal amyloidosis, and spinal cord compression due to vertebral subluxation, especially of the atlantal-axial joint.[1,2,3]

The following case report demonstrates the occurence of atlantal-axial instability in a patient with psoriatic arthritis.

Case report

A 35 year old female school teacher was referred by her medical physician for chiropractic care. The physician had referred her on the basis of the radiological findings. However, the x-rays had been sent to the lab for formal reading. At the time of presentation, the patient's chief complaint was "neck sprain". The pain was the result of a fall on the ice four days prior. The pain was located on the posterior cervical region predominantly on the right, and extended down the right shoulder and lateral aspect of the right arm to the elbow. The intensity of the pain was decreasing. It was aggravated by general movements, as well as carrying weights. Rest and valium offered relief. Associated symptoms included nausea and dizziness.

She related a significant past history of a similiar incident four years prior. At that time, a neurologist was consulted and the patient indicated that a diagnosis of "spondylolisthesis" was made. She was otherwise in good general health.

Physical examination demonstrated the active cervical range of motion to be full and pain free in forward flexion. Extension was painfully restricted at 5 degrees. Lateral flexion was 30 degrees and rotation was 60 degrees bilaterally. Cervical motion

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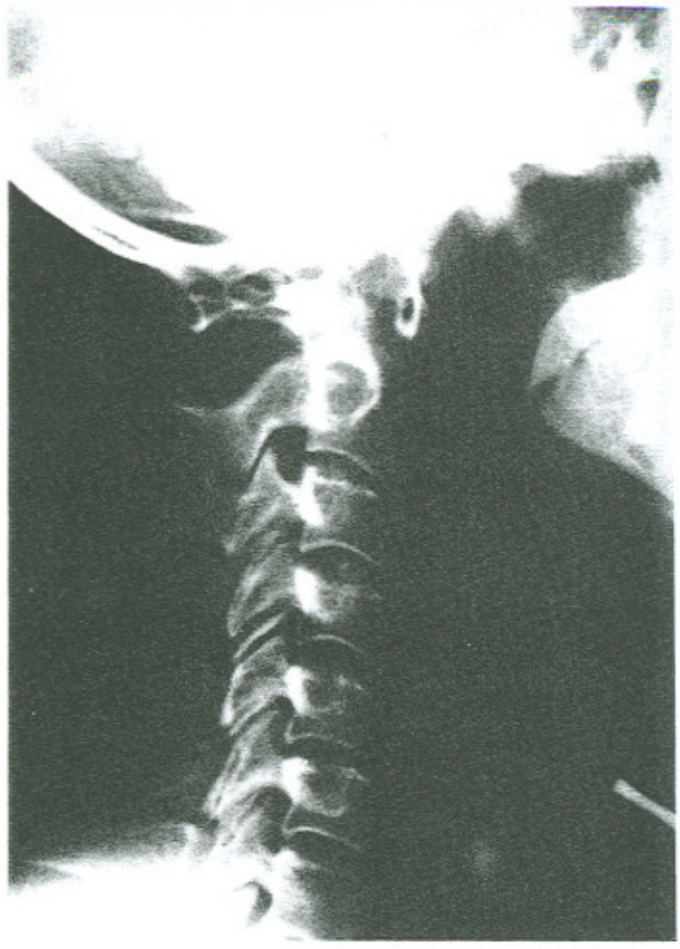

Figure 1 Neutral lateral radiograph of the cervical spine.

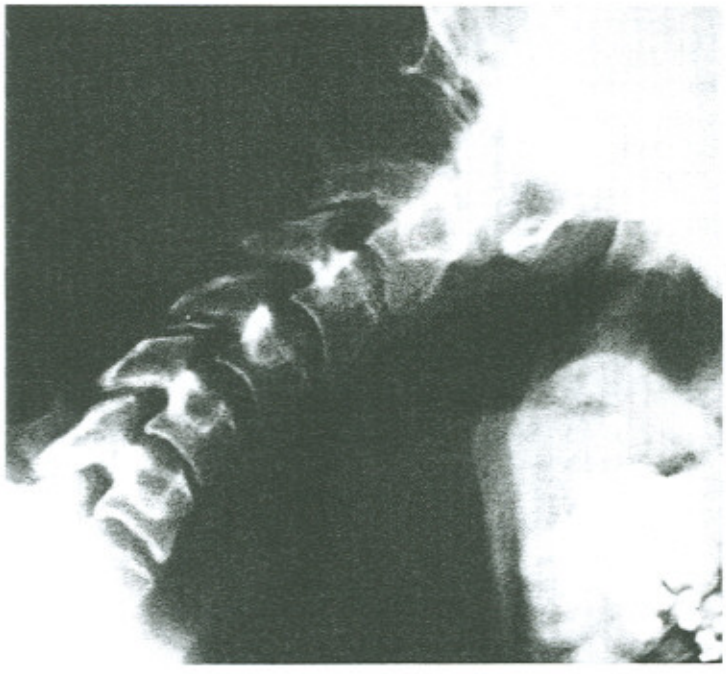

Figure 2 Lateral radiographs of the cervical spine in flexion and extension. Note in flexion the ADI is 8mm.

palpation revealed bizarre findings which at best could be described as a crepitation or a jump like movement, especially at the upper cervical spine. The skin in the area of the cervical spine felt somewhat dry and the musculature beneath felt ropey and boggy to the touch. Although all the upper and lower limb reflexes were bilaterally equal, they were subjectively hyperreflexive and graded at 3+. Left shoulder abduction was weaker than the right, as was left wrist extension compared to the right. Cervical distraction aggravated the pain. Tests of vertebrobasilar arterial insufficiency were inconclusive as sufficient extension was not possible.

Routine cervical radiographs had been taken one day prior to the time of presentation. Unfortunately, these were unavailable at the time of consultation. A supplemental set of flexion extension films were ordered. An overlay study revealed that during extension the atlantal dental interval (ADI) appeared normal. However, during forward flexion the ADI increased to 8mm (Figures 1 and 2).

On the second visit, she further explained, that approximately four months prior she had been diagnosed by a dermatologist as having psoriasis. Due to the obvious instablility of the upper cervical spine, she was referred to an orthopaedic surgeon. He inturn informed her that a cervical fusion of the atlas-axis was indicated.

Discussion

Manipulation of the upper cervical spine where atlanto-axial instability is present is an absolute contraindication.[6] In a case such as this, manipulation to the upper cervical region would likely have been disastrous. The association and clinical search for atlanto-axial stability in rheumatoid arthritis, is well recognized in our profession.[6,7] A similiar concern should be raised when patients present with psoriasis. Often the earliest sign of psoriasis is changes in the nails, thus adding strength to the old adage: "Look to the hands."

References

1 The Arthritis Foundation, primer on rheumatic diseases. The arthritis foundation, Atlanta, Georgia; 1983: 91–2.
2 Reveille JD. The spondyloarthropathies. In: Clinical rheumatology, ed. Bull CV, Koopman WJ, Toronto: WB Saunders Co, 1986: 178–82.
3 Golding DN. A synopsis of rheumatic diseases. London: Sohn Wright and Sons, 1982: 171.
4 Greenfield GB. Radiology of bone diseases. Toronto: JB Lippincott, 1980: 742–6.
5 Yochum TR, Rowe LJ. Arthritides of the upper cervical complex. In: Aspects of manipulative therapy, ed. Idczak RM, Victoria: Lincoln Institute of Health Sciences, 1980: 22–32.
6 Kleynhans AM. The prevention of complications from spinal manipulative therapy. In: Aspects of manipulative therapy, ed. Idczak RM, Victoria: Lincoln Institute of Health Sciences. 1980: 133–141.
7 Crnec M, Cassidy JD, Mierau D, Yong-Hing K. Os odontoideum: a case report. JCCA 1986; 30(2): 83–85.