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## Original Article

# Clinical and radiographic involvement of cervical spine in patients with psoriatic arthritis



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## ABSTRACT

**Objectives:** To evaluate clinical and radiographic patterns of cervical spine affection in patients with psoriatic arthritis (PsA).

**Methods:** This cross sectional study included 30 PsA patients, who were examined clinically and had radiographics of the cervical spine, sacroiliac joints and both hands and feet.

**Results:** Cervical spine disease was evident clinically in 46.7% and radiographically in 20% of PsA patients, with no significant correlation between radiological and laboratory abnormalities. Also, there was no significant correlation between peripheral arthritis and cervical spine affection.

**Conclusion:** Cervical spine disease is not an uncommon clinical and radiographic finding in patients with PsA.

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## 1. Introduction

Psoriatic arthritis (PsA) is an inflammatory spondyloarthritis associated with psoriasis and can involve the peripheral joints and the axial skeleton.<sup>1</sup> It has equal male-to-female ratio and peak age of onset between 35 and 55 years.<sup>2</sup> Axial involvement occurs in 25–75% of patients with PSA.<sup>1,3</sup>

In this study, we assessed the prevalence of clinical and radiographic pattern of cervical spine affection in PsA patients.

## 2. Patients and methods

### 2.1. Patients

This cross-sectional study was performed on 30 PsA patients diagnosed according to CASPAR criteria,<sup>4</sup> selected from the out-patient Clinics and in-patient sections of the Rheumatology and Rehabilitation Departments, Zagazig University Hospitals, Egypt. The study was approved by the institutional ethics committee.

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**Table 1 – Clinical features of cervical spine in relation to subgroups of PSA patients.**

	Poly (15)	Oligo (9)	Axial (4)	DIP (3)	P
Pain	9	2	3	0	0.089
Tenderness	9	2	3	0	0.089
Deformity	0	0	1	0	0.08
Limited ROM					
Flexion	9	1	2	0	0.06
Extension	9	1	3	0	0.03
Lateral flexion	0	0	2	0	0.003
Lateral rotation	0	0	2	0	0.003

## 2.2. Methods

All patients were subjected to history taking, clinical examination and routine laboratory investigations (complete blood count (CBC), erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and rheumatoid factor (RF).

Computerized Tomography (CT) and Plain X-ray anteroposterior (A-P) and lateral views of cervical spine, plain X-ray of Hands/wrists and feet, Sacroiliac joints (A-P and oblique views), were done for all patients.

## 2.3. Statistical analysis

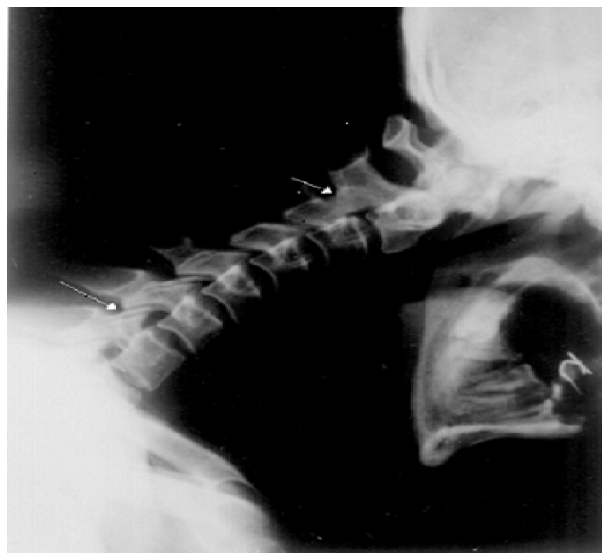
Student's (t) test was used to analyse the clinical features of the cervical spine and radiological abnormalities in relation to subgroups of PsA patients. Validity of X-ray versus CT method in the diagnosis of cervical spine abnormalities, as well as the correlation between clinical manifestations and X-ray abnormalities were determined using McNamara's Chi – squared test. Where appropriate the Chi square, test with Yates correction (X<sup>2</sup>Y) was used. Data was analysed using SPSS version 21 and  $p < 0.5$  was deemed significant.

## 3. Results

Twenty males and 10 females with PsA were included. Their ages ranged from 32 to 62 years ( $49.3 \pm 8.1$  years), The duration of skin lesions ranged from 4 months to 30 years ( $14.2 \pm 6.4$

**Table 2 – Radiological abnormalities of cervical spine in PSA patients.**

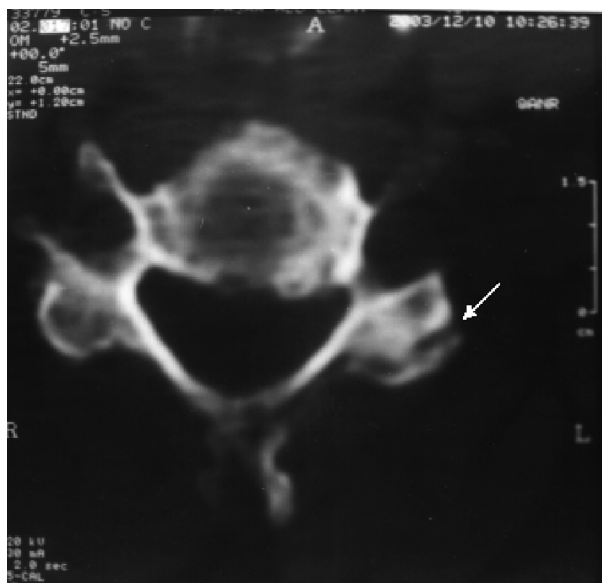
Features	No. of cases with X-ray abnormalities (%)	No. of cases with CT abnormalities (%)
Atlantoaxial subluxation	2 (6.7)	3 (10.0)
Odontoid erosions	2 (6.7)	4 (13.3)
Facet joint		
Narrowing	6 (20)	7 (13.3)
Fusion	1 (3.3)	1(3.3)
Subaxial spine		
Narrowing	8 (26.7)	0.0
Subluxation	1 (3.3)	0.0
Syndesmophytes	4 (13.3)	0.0
Ligament calcification		
Ant. ligament	0.0	1(3.3)
Post. ligament	0.0	2(6.7)



**Fig. 1 – Lateral view radiograph of cervical spine in flexion in a 45 year old patient who has had PSA for 16 years. Apophyseal (Facet) joint fusion can be seen at C2–C3 and narrowing can be seen at C6–C7 (arrows).**

years) and durations of arthritis ranged from 4 months to 30 years ( $7.9 \pm 6.5$  years) and latency between skin involvement and development of -arthritis was 7–23 years.

Clinical characteristics and the radiographic features of patients with PsA are presented in [Tables 1 and 2](#) ([Figs. 1–8](#)). There was a significant correlation between subaxial spine syndesmophytes and axial disease of PsA, which was not significantly correlated to the peripheral joints involvement. There was no significant association between either clinical manifestations or laboratory abnormalities and the radiographic abnormalities detected by the X-rays in PsA patients.



**Fig. 2 – Cut CT scan of cervical spine showing; facet joint narrowing (arrowed).**

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