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Periarthropathies: Clinical Spectrum and Patterns

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Objective: The aim of this study is to review the spectrum of primary periarthropathies.

Setting: Rheumatology clinic, Ibn Sina teaching hospital, Mosul, Iraq.

Design: Prospective non-experimental clinical study.

Method: Two hundred patients having primary periarthropathy were included in the study. Secondary cases of periarthropathy were excluded. Patients with multiple periarthropathy were recorded.

Result: Two hundred patients were studied, 114 were females and 33 were males who had one type of periarthropathy; the remaining had combinations of periarthropathies. The mean age for periarthropathy was more than 40, except for tendinitis (36.8 ± 10.5). The most common periarthropathies is the shoulder 93 (46.5%), followed by Carpal tunnel syndrome 57 (28.5%) and planter fasciitis 34 (17%), history was significantly high in these three conditions. Various combinations of periarthropathies were seen in the study group.

Conclusion: Shoulder periarthropathies and CTS were the most common, 46.5% and 28.5% respectively.

The concept of oligoarthropathy and possibly poly-periarthropathy needs further research. Constitutional factors, for example, gender and pro-inflammatory mechanisms need further studies.

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Periarthropathies include tendinitis, capsulitis, fasciitis, bursitis, nerve entrapment and others. The exact pathogenic factors are not fully understood but certain types are associated with inflammatory rheumatic illness, such as, seronegative spondarthritides[1,2].

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The “primary” cases are frequently attributed to repetitive microtrauma or an overuse mechanism and are sometime suspected to be the early manifestation of a latent inflammatory joint disease[3-5]. The concept of oligoarthropathy and possibly poly-periarthropathy patterns has not been fully understood.

The aim of the study is to review the clinical patterns, the spectrum and the association of primary periarthropathies.

METHOD

Two hundred cases of “primary” periarthropathies were reviewed retrospectively from June 2008 to October 2009.

The diagnosis of periarthropathies was based on clinical findings[6,7]. History and physical examination were recorded. Cases that had gross trauma and evidence of systemic joint disease were excluded.

Rotator cuff tendinitis cases were included in shoulder periarthropathy. Bicipital tendinitis was included in the group of tendinitis such as tendon ganglion, flexor tendinitis and others. Tennis and golfer elbows were given a special entity of epicondylitis.

Silent (neither pain nor tenderness) periarthropathies were not included, such as the asymptomatic bursa swelling around the ankle. Diabetes, hypertension and oropharyngeal infection (recurrent sore throat, recurrent teeth and gingival pain and congested or purulent pharynx) were emphasized.

Physical work/duties were graded as follows: heavy duties imply a full time organ related (upper or lower limbs) physical duty; former heavy duty implies previous heavy duty that the patient stopped within the past five years; non-heavy duty implies sedentary or short periods of physical work. The data were analyzed with SPSS program.

RESULT

The most common periarthropathies were as follows: 93 (46.5%) shoulder periarthropathy, 57 (28.5%) Carpal tunnel syndrome (CTS), 34 (17%) plantar fasciitis, 24 (12%) tennis elbow, 11 (5.5%) lower limb bursitis and 11 (5.5%) De Quervain tendinitis, see table 1.

Bilateral periarthritis was most frequent with CTS (22 of 57 patients or 38.5% of CTS cases), see table 1. Females accounted for 114 of the patients. Furthermore, females predominance was seen in almost all types, All CTS cases were females, see table 2.

Table 1: Frequencies of the More Common Periarthropathies and Their Side*

	Total No. (%)**	Right (%)	Left (%)	Bilateral (%)
Shoulder	93/200 (46.5)	47 (23.5)	38 (19)	8 (4)
Carpal tunnel syndrome	57/200 (28.5)	24 (12)	11 (5.5)	22 (11)
Tennis elbow	24/200 (12)	14 (7)	8 (4)	2 (1)
De Quervain tendinitis	11/200 (5.5)	5 (2.5)	6 (3)	0 (0)
Planter fasciitis	34/200 (17)	11 (5.5)	16 (8)	7 (3.5)
Lower limb bursitis	11/200 (5.5)	3 (1.5)	6 (3)	2 (1)

* Numbers refer to patients not joints and percentages in this table are based on 200
** The total number will exceed 200 because patients with two periarthropathies were counted in both figures

Table 2: Sex and Age of Patients with One Type Periarthropathy (Unilateral or Bilateral)

Disease	Number (%)	Female / Male	Mean age ± SD
Shoulder	55/200 (27.5)	42 / 13	48.27 ± 13.76
Carpal tunnel syndrome	16/200 (8)	16 / 0	43.43 ± 9.81
Epicondylitis	18/200 (9)	12 / 6	45.5 ± 7.02
Tendinitis (upper and lower limbs)	16/200 (8)	13 / 3	36.81 ± 10.51
Planter fasciitis	29/200 (14.5)	23 / 6	43.72 ± 10.93
Lower limb bursitis	9/200 (4.5)	6 / 3	48.77 ± 14.09
Other lower limb periarthropathies	4/200 (2)	2 / 2	34.50 ± 10.24

The mean age for all types of periarthropathy was more than 40, except for tendinitis (36.8 ± 10.5), see table 2. The difference between the mean age of the shoulder periarthritis (48.27 years ± 13.7) and tendinitis (36.8 years ± 10.5) was significant, *P-value 0.01*.

Heavy work was associated only with CTS (*P-value 0.022*). Hand dominance was associated with right shoulder periarthritis (47 patients) with right handedness (42 of the 47), *P-value* is 0.026.

History of similar symptoms was high in shoulder cases, 23 of 93 patients (24.7%), 13 of 57 of CTS (22.8%) and 12 of 32 of plantar fasciitis (37.5%).

Most periarthritis combinations occurred in the upper limbs, see table 3. The highest combination rate was between CTS and shoulder periarthropathies, see table 4.

Oropharyngeal infection was present in 44 (47.3%) patients of shoulder cases and in 25 (43.8%) patients of CTS cases. Diabetes mellitus, hypertension and increased body mass index showed no significant association with any periarthropathy.

Table 3: Various Combinations of Upper Limb Periarthropathy

	Total		Number
Shoulder periarthritis	93	Shoulder alone	55
		+ Carpal tunnel syndrome	31
		+ Carpal tunnel syndrome + Golfer elbow	1
		+ Tennis elbow	2
		+ Golfer elbow	1
		+ Bicipital tendinitis	2
		+ Planter fascitis	1
Bicipital tendinitis	2	Bicipital tendinitis +shoulder	2
Tennis elbow	24	Tennis elbow alone	16
		+ Shoulder	2
		+ Golfer elbow	1
		+ Carpal tunnel syndrome	2
		+ Plantar fasciitis	1
		+ Anserine bursitis	1
		+ Golfer elbow + Plantar fasciitis	1
Golfer elbow	7	Golfer elbow alone	1
		+ Tennis elbow	1
		+ Shoulder periarthritis	1
		+ Olecranon bursitis	1
		+ Plantar fasciitis	1
		+ Tennis elbow+ Plantar fasciitis	1
		+Carpal tunnel syndrome + shoulder periarthritis	1
Olecranon bursitis	1	+Golfer elbow	1
De Quervain tendinitis	11	De Quervain tendinitis alone	7
		+ Carpal tunnel syndrome	3
		+ Carpal tunnel syndrome + Trigger finger	1
Carpal tunnel syndrome	57	Carpal tunnel syndrome alone	16
		+ Tennis elbow	2
		+ De Quervain tendinitis	3
		+ Shoulder periarthritis	31
		+ Shoulder periarthritis + Golfer elbow	1
		+ Tendon ganglion	1
		+ Trigger finger	2
		+ De Quervain tendinitis + Trigger finger	1
Tendon ganglion	2	Tendon ganglion alone	1
		+ Carpal tunnel syndrome	1
Trigger finger	7	Trigger finger alone	4
		+ Carpal tunnel syndrome	2
		+ De Quervain tendinitis + Carpal tunnel syndrome	1
Extensor Carpi Ulnaris tendinitis	1	Extensor Carpi Ulnaris tendinitis	1

Table 4: Cases with Combined CTS and Shoulder Periarthropathy

Total Number of Carpal Tunnel syndrome	57
Carpal tunnel syndrome + Shoulder periarthritis	32
Right Carpal tunnel syndrome + Right shoulder periarthritis	13
Left Carpal tunnel syndrome + Left shoulder periarthritis	8
Bilateral Carpal tunnel syndrome + Right shoulder periarthritis	4
Bilateral Carpal tunnel syndrome + Left .shoulder periarthritis	2
Bilateral Carpal tunnel syndrome + Bilateral shoulder periarthritis	4
Bilateral Carpal tunnel syndrome + Right shoulder periarthritis + Right Golfer elbow	1

DISCUSSION

In this study, shoulder periarthropathies and CTS were the most common, 46.5% and 28.5% respectively.

In fish processing workers, it was found that shoulder girdle pain, CTS and epicondylitis were the most frequent soft tissue disorders (30.9%, 15% and 14.5% respectively)[8]. Variable incidences in diverse populations were found[8,9].

In this study, the reason is not clear for the female predominance in shoulder cases and CTS. Many previous studies showed female predominance in some types of upper limb periarthropathies[9,10]. However, the female predominance in plantar fasciitis and lower limb bursitis in this study may support the concept of primary periarthropathy rather than being a feature of a latent ankylosing spondylitis.

The association between shoulder periarthritis and CTS on the same side in this study supports the concept of an overuse mechanism; a constitutional tendency however cannot be ruled out more especially because of history of the same illness was encountered in many patients, see tables 3 and 4. The association between oropharyngeal infection and both shoulder periarthritis and CTS raises the possibility of a regional reactive phenomenon.

Previously, an association has been described between periodontal disease and rheumatoid arthritis; however, the mechanism is not yet clear[11]. Hand dominance was not a significant factor in this study except for right shoulder periarthritis with right handedness. In a large recent study in Finland, the role of hand dominance was noted but appeared to be limited to females or to a particular type of periarthritis[12].

CONCLUSION

Shoulder periarthropathies and CTS were the most common, 46.5% and 28.5% respectively.

Periarthropathies may include combination patterns; the concept of oligo and possibly poly-periarthropathy needs to be investigated. Constitutional and environmental pro-inflammatory mechanisms need to be studied in addition to the well described overuse mechanism.

REFERANCES

1. Baliant PV, Kane D, Wilson H, et al. Ultrasonography of Entheseal Insertions in the Lower Limb in Spondyloarthropathy. Ann Rheum Dis 2002; 61: 905-10.
2. Gerster JC. Planter Fascitis & Achilles Tendinitis among 150 Cases of Seronegative Spondarthritis. Rheumatology 1980; 19: 218-22.
3. Werner RA, Franzblau A, Gell N, et al. Predictors of Persistent Elbow Tendonitis among Auto Assembly Workers. J Occup Rehabil 2005; 15(3): 393-400.
4. Latko WA, Armstrong TJ, Franzblau A, et al. Cross-sectional Study of the Relationship between Repetitive Work and the Prevalence of Upper Limb Musculoskeletal Disorders. Am J Ind Med 1999; 36(2): 248-59.
5. Olivieri I, Gemignani G, Gherardi S, et al. Isolated HLA-B27 Associated Achilles Tendinitis. Ann of Rheum Dis 1987; 46(8): 626-7.
6. Joseph J, Biundo JR. Regional Rheumatic Pain Syndromes. In: John H Stone, Leslie J Crofford, Patience H White, et al, eds. Primer on the Rheumatic Diseases. 13th Ed. Springer Int, 2008: 68-93.
7. Scott David Martin, Thomas S Thornbill, Patrick J Casey, et al. (chapters 35-40). In: Shaun Ruddy, Edward D. Harris, Clement B. Sledge, eds. Kelley's Textbook of Rheumatology. 6th ed. WB Saunders, 2001.
8. Chiang HC, Ko YC, Chen SS, et al. Prevalence of Shoulder and Upper-Limb Disorders among Workers in the Fish-Processing Industry. Scand J Work Environ Health 1993; 19(2): 126-31.
9. Pascarelli EF, Hsu YP. Understanding Work-Related Upper Extremity Disorders: Clinical Finding in 485 Computer Users, Musicians, and Others. J Occup Rehabil 2001; 11(1): 1-21.
10. Kivi P. Rheumatic Disorders of the Upper Limbs Associated with Repetitive Occupational Tasks in Finland in 1975-1979. Scand J Rheumatol 1984; 13(2): 101-7.
11. Gleissner C, Willershausen B, Kaesser U, et al. The Role of Risk Factors for Periodontal Disease in Patients with Rheumatoid Arthritis. Eur J Med Res1998; 3(8): 387-92.
12. Shiri R, Varonen H, Heliövaara M, et al. Hand Dominance in Upper Extremity Musculoskeletal Disorders. J Rheumatol 2007; 34(5): 1076-82.