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Etiologies of Non-Traumatic Wrist and Hand Pain in Rheumatology in Bouake: About 50 Patients

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Abstract

Introduction: The wrist and hand play a very important role in human life (1.2). In addition to grasping and touching, they are involved in virtually all of a person's daily activities (1,2). Pain in the hand and/or wrist causes functional impairment in carrying out daily activities, thus constituting a major problem for both the patient and society (1.2). **Objective:** To describe the epidemiological and diagnostic characteristics of non-traumatic hand and wrist disorders (NTMP) in Bouaké (Côte d'Ivoire). **Patients and Methods:** This was a retrospective cross-sectional study from January 1, 2015 to December 31, 2020 (six years), of patients with non-traumatic hand and/or wrist pathology seen in rheumatology in Bouaké, Côte d'Ivoire. **Results:** Fifty out of 3210 patients suffered from NTMP pain (1.56 per cent). Their average age was 51.42 years (ranging from 10 to 86 years), and the sex ratio was 0.25 (10 men and 40 women). Twenty-six patients had a mechanical or degenerative condition (52 per cent), comprising four cases of osteoarthritis of the hands (8 per cent), 14 cases of carpal tunnel syndrome (28 per cent), five cases of De Quervain's tenosynovitis (10 per cent), two cases of trigger finger (4 per cent), and one case of diabetic cheiroarthropathy (2 per cent). Eighteen patients had chronic inflammatory rheumatism (36 per cent), comprising five cases of reactive arthritis (10 per cent) and 13 cases of rheumatoid arthritis (26 per cent), which was sometimes deforming (8 cases), erosive (7 cases) and immunopositive (10 cases). Six patients had microcrystalline arthropathy (12 per cent), comprising one case of chondrocalcinosis (2 per cent) and five cases of polyarticular tophaceous gout with destructive arthropathy (10 per cent). **Conclusion:** Non-traumatic pathology of the hand and wrist is not rare in rheumatological practice in Bouaké. They are represented by mechanical and degenerative pathol-

ogies, chronic inflammatory rheumatism, and microcrystalline arthropathies. Carpal tunnel syndrome and rheumatoid arthritis are the most common diagnoses.

Keywords

Wrist, Hand, Rheumatoid Arthritis, Bouaké

1. Introduction

The wrist and hand play a very important role in human life [1] [2]. In addition to grasping and touching, they are involved in virtually all of a person's daily activities [1] [2]. Pain in the hand and/or wrist causes functional impairment in carrying out daily activities, thus constituting a major problem for both the patient and society [1] [2]. When hand and/or wrist pain occurs, the causes may be mechanical or degenerative, infectious, microcrystalline, neoplastic, or related to chronic inflammatory rheumatism [1]-[4]. The prevalence of these causes varies between countries [1]-[8]. Most studies from sub-Saharan Africa have examined the causes of both wrist and hand pain [1] [5]-[10]. For example, Togo reported 192 cases of carpal tunnel syndrome over eight years [5], and there was a predominance of hand and wrist involvement among the 92 cases of rheumatoid arthritis observed over 25 years [6]. In Burkina Faso, the prevalence of tendinopathy of the hand and wrist was 35% amongst bank employees in Ouagadougou [7]. The prevalence of causes of wrist and hand pain has been little studied (1.5 - 10). The aim of this study was to describe the epidemiological and diagnostic characteristics of non-traumatic wrist and hand pain in a black population in sub-Saharan Africa.

2. Patients and Methods

This was a retrospective cross-sectional study covering a six-year period from 1 January 2015 to 31 December 2020, involving the medical records of patients with a non-traumatic condition of the hand and/or wrist. The study involved Black patients from sub-Saharan Africa seen in the rheumatology department of the Bouaké University Hospital (CHU) in Côte d'Ivoire. We included all patients presenting with non-traumatic pain of the hand and/or wrist seen during this period for whom a clear diagnosis had been established. Patients whose clinical records were unusable due to a lack of information deemed essential (epidemiological characteristics and the absence of a clear diagnosis) were not included in the study. A total of 15 records were excluded.

The epidemiological characteristics of the patients we studied were: age, sex and occupation. The clinical aspects studied were: the reason for consultation, the onset and duration of symptoms, the location of the pain, medical history and the diagnosis made. The data were analysed using version 7 of the 'EPI-INFO' software.

From an ethical perspective, authorisation was obtained from the medical and scientific management of the Bouaké University Hospital. Furthermore, the confidentiality and anonymity of the cases under investigation were respected.

Diagnostic criteria:

- Carpal tunnel syndrome: the diagnosis was primarily clinical in a patient presenting with wrist pain and paraesthesia in the distribution of the median nerve, along with positive Phalen's and Tinel's signs. Where an electroneuromyogram (ENMG) was performed, it confirmed involvement of the median nerve. Standard X-rays and/or ultrasound scans are used to investigate associated bone and musculotendinous abnormalities.

- Rheumatoid arthritis: the diagnosis is made in the presence of chronic polyarthritis progressing in flare-ups interspersed with remissions, predominantly affecting the distal joints and causing non-reducible deforming arthritis, with laboratory evidence of an inflammatory syndrome associated with the presence of rheumatoid factor and/or anti-CCP antibodies, and, on standard X-ray, fusing carpal arthritis and band-like epiphyseal demineralisation. The 2010 ACR (American College of Rheumatology) criteria were also used for recent cases of polyarthritis with normal standard X-rays and in the absence of any other clear diagnosis.

- Reactive arthritis: this diagnosis was made in a young adult with a history of a urogenital or gastrointestinal infection, presenting with an oculo-urethro-synovial syndrome (Fisseigner-Leroy-Reiter syndrome) that responded to non-steroidal anti-inflammatory drugs, after septicaemic arthritis had been ruled out. In less obvious cases, the Amor criteria were used.

- Gout: this diagnosis was made in a middle-aged adult with a metabolic profile (hypertension, diabetes, dyslipidaemia, obesity) who was known to be a gout sufferer or had a history of inflammatory pain, and who presented with inflammatory swelling of the hand and wrist, whether or not associated with other joint involvement. Joint ultrasound revealed a double-contour appearance. Laboratory tests showed an inflammatory syndrome, most commonly accompanied by hyperuricaemia. Where performed, ultrasound-guided joint aspiration revealed sodium urate crystals.

- Chondrocalcinosis: this diagnosis was made on the basis of the presence of calcific margins on standard X-rays

- Osteoarthritis: diagnosed on the basis of mechanical pain and the presence of degenerative changes on standard X-rays

- De Quervain's tenosynovitis: wrist pain associated with a positive Finkelstein's sign. Joint ultrasound confirmed the diagnosis

Limitations of the study:

- The retrospective nature of the study, resulting in some incomplete records

Single-centre recruitment,

- The small sample size,

- Paraclinical investigations were often difficult to access, making diagnosis difficult in some cases.

3. Results

Of the 3210 patients seen during the study period, 50 suffered from non-traumatic pain in the hand or wrist (1.56%). The mean age of the study population was 51.42 years, with ages ranging from 10 to 86 years. The 50 - 60 age group was the most common (16 patients, or 32%). The sex ratio was 0.25, comprising 10 men and 40 women. Regarding the patients' occupations, 14 female patients were housewives (28%), 8 patients were students (16%), 7 patients were shopkeepers (14%), 6 patients were teachers (12%), 6 patients were bakers, cashiers, nuns, seamstresses and pensioners (12%), 5 patients were farmers (10%) and 4 patients were paramedical staff (8%).

In terms of diagnosis, 26 patients had a mechanical or degenerative condition (52 per cent), 18 patients had chronic inflammatory rheumatism (38 per cent), and six patients had microcrystalline arthropathy (12 per cent). Four patients had osteoarthritis of the hands, with Bouchard's and Heberden's nodes observed in one case each. Thirteen patients had rheumatoid arthritis, which was deforming in eight patients, destructive in seven patients, and immunopositive (rheumatoid factor and anti-CCP2) in 10 patients. Five patients had polyarticular tophaceous gout with destructive arthropathy. Of these patients, one had associated chronic kidney disease, whilst the other four had no renal involvement. Table 1 shows the clinical characteristics of the study population.

Table 1. Clinical characteristics of the study population.

		Patient cohort (N = 50)	Frequency (%)
Reason for Consultation	Polyarthritis	20	40
	Polyarthralgia	12	24
	Oligoarthritis	7	14
	Isolated wrist pain	6	12
	Acroparesthesia	5	10
Onset	Sudden	3	6
	Progressive	47	94
Duration of symptoms	Acute	5	10
	Subacute	7	14
	Chronic	38	76
Location	Left-sided	8	16
	Right-sided	6	12
	Bilateral	36	72
Medical history	High blood pressure	10	20
	Type 2 diabetes	3	6

Continued

	HIV-1	5	10
	Sickle cell anaemia	2	4
	Epigastric burning	3	6
Diagnosis	Osteoarthritis of the hands	4	8
	Carpal tunnel syndrome	14	28
	De Quervain's tenosynovitis	5	10
	Trigger finger	2	4
	Diabetic hand arthropathy	1	2
	Rheumatoid arthritis	13	26
	Reactive arthritis	5	10
	Gout	5	10
	Chondrocalcinosis	1	2

4. Discussion

The wrist and hand are very important in a person's life [1]-[3]. Damage to this part of the musculoskeletal system can sometimes cause debilitating pain, which may impair the patient's quality of life by affecting their functional ability and psychological well-being [1]-[3]. Non-traumatic pain in the hand and wrist is not uncommon in rheumatology in Bouaké; its prevalence is 1.56 per cent. Diomandé found that the prevalence of non-traumatic osteoarticular conditions amongst defence and security personnel was 1.21 per cent in Abidjan [8]. Patients presenting with non-traumatic pain in the wrist or hand are predominantly women in their fifties, with housewives being strongly represented. They most often present with bilateral pain that develops gradually and has a chronic course. This clinical profile is typical in sub-Saharan Africa in most studies [1] [5]-[10].

In Bouaké, the causes of non-traumatic pain in the hand and wrist include mechanical and degenerative conditions, chronic inflammatory rheumatic diseases, and microcrystalline arthropathies. Carpal tunnel syndrome and rheumatoid arthritis are the most common diagnoses. Most studies from sub-Saharan Africa have focused on the aetiology of both non-traumatic wrist and hand pain [1] [5]-[7]. The prevalence of these aetiologies in cases of wrist and hand pain has been little studied [1] [5]-[7]. Indeed, Togo reported 192 cases of carpal tunnel syndrome over eight years [5], and there was a predominance of hand and wrist involvement amongst the 92 cases of rheumatoid arthritis observed over 25 years [6]. In Burkina Faso, the prevalence of tendinopathy of the hand and wrist was 35 per cent amongst bank employees in Ouagadougou [7]. In Guinea-Conakry, out of 1028 patients seen over the course of a year, tendinopathy or carpal tunnel syndrome was observed in nine cases, trigger finger and cheiroarthropathy in two patients, and digital osteoarthritis in one person [9]. Chronic inflammatory rheumatic diseases accounted for 24.27 per cent of all rheumatological conditions, with

involvement of the hands and wrists being predominant [9]. As for microcrystalline disorders of the wrist and hand, these appear to be less common than chronic inflammatory rheumatic diseases in the literature [9] [10].

5. Conclusion

Non-traumatic conditions of the hand and wrist are not uncommon in rheumatology practice in Bouaké. Those affected are mainly women in their fifties, and housewives are strongly represented. Patients most often present with bilateral pain that develops gradually and has a chronic course. The aetiologies encountered include mechanical and degenerative conditions, chronic inflammatory rheumatic diseases, and microcrystalline arthropathies. Carpal tunnel syndrome and rheumatoid arthritis are the most common diagnoses.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Zabsonré Tiendrebeogo, W.J., Kabore, F., Gandema, S., Tiaho, E., Sougué, C., Ouangré, T., *et al.* (2018) A Study of Hand Function in Patients with Rheumatoid Arthritis in a Black African Population Using the Michigan Hand Outcomes Questionnaire. *Revue Marocaine de Rhumatologie*, **45**, 46-50.

[2] Waljee, J.F., Chung, K.C., Kim, H.M., Burns, P.B., Burke, F.D., Wilgis, E.F.S., *et al.* (2010) Validity and Responsiveness of the Michigan Hand Questionnaire in Patients with Rheumatoid Arthritis: A Multicenter, International Study. *Arthritis Care & Research*, **62**, 1569-1577. https://doi.org/10.1002/acr.20274

[3] Le Goux, P. (2010) Tendinopathy of the Wrist and Hand: A Diagnostic Approach Based on Clinical Examination Findings. *La Lettre du rhumatologue*, **363**, 14-21.

[4] Levame, J., Bleton, R. and Durafourg, M. (2008) Le Poignet Douloureux de la Jeune Fille (PDJF). *Kinésithérapie, la Revue*, **8**, 32-35. https://doi.org/10.1016/s1779-0123(08)70663-6

[5] Fianyo, E., Kakpovi, K., Gbeassor-Komlanvi, F., Tagbor, K., Houzou, P., Koffi-Tessio, V.E.S., *et al.* (2020) Le Syndrome du Canal Carpien à Lomé (Togo). *European Scientific Journal, ESJ*, **16**, 229-239. https://doi.org/10.19044/esj.2020.v16n9p229

[6] Kakpovi, K., Houzou, P., Fianyo, E., Kolou, M., Kuéviakoé, M.I., Padaro, E., *et al.* (2017) Profil de la Polyarthrite Rhumatoïde en Consultation Rhumatologique à Lomé (Togo). *European Scientific Journal, ESJ*, **13**, 125-132. https://doi.org/10.19044/esj.2017.v13n15p125

[7] Sanon, M.S., Congo, M., Owona, J.M., Tiendrebéogo, J., Ouédraogo, A.F., Ouédraogo, S., *et al.* (2019) Factors Associated with Hand Tendinopathies among Bank Employees in Ouagadougou. *Revue de Médecine et de Pharmacie*, **9**, 1001-1008. https://www.ajol.info/index.php/rmp/article/view/195373

[8] Diomandé, M., Ouattara, B., Yao Joe, C., Afane, L., Djaha Kouassi, J., Gbané-Koné, M., *et al.* (2022) Profil des Affections Ostéo-Articulaires Non Traumatiques des Agents des Forces de Défense et Sécurité à Abidjan (Côte-d'Ivoire). *Rhumatologie Africaine Francophone*, **2**, 18-22. https://doi.org/10.62455/raf.v2i1.14

[9] Badra, K.A., Lamine, D.M., Marie, T., Alhassane, D., Emmanuel, Y., Abdoulaye, B.,

et al. (2018) Panorama des Maladies Rhumatismales a Conakry. *European Scientific Journal, ESJ*, **14**, 422-431. https://doi.org/10.19044/esj.2018.v14n24p422

[10] Diomandé, M., Traoré, A., Bamba, A., Coulibaly, Y., Kpami, Y.N.C., Konaté, I., *et al.* (2020) Gout in Abidjan: Experience of the Rheumatology Department at Cocody University Hospital Based on 106 Cases. *African Journal of Internal Medicine*, **9**, 30-37. https://www.raf-mi.org/soumission/la-goutte-a-abidjan-experience-du-service-de-rhumatologie-du-chu-de-cocody-a-propos-de-106-cas/

Appendix

Record N°: .....

Gender: ☐ Male ☐ Female

Age: .....

Age group: ☐ < 20 years ☐ 20 - 40 years ☐ 40 - 50 years ☐ 50 - 60 years ☐ 60 - 70 years ☐ > 70 years

Occupation: .....

Reason for consultation: .....

Onset of symptoms: ☐ Sudden ☐ Gradual

Duration of symptoms before consultation: .....

Course/progression: ☐ Acute ☐ Subacute ☐ Chronic

Location of pain: ☐ Right wrist ☐ Left wrist ☐ Bilateral wrist ☐ Right hand ☐ Left hand ☐ Bilateral hand

Relevant medical history: .....

Diagnostic category: ☐ Mechanical/degenerative condition ☐ Chronic inflammatory rheumatism ☐ Microcrystalline arthropathy

Mechanical/Degenerative Conditions: ☐ Osteoarthritis of the hand ☐ Carpal tunnel syndrome ☐ De Quervain's tenosynovitis ☐ Trigger finger ☐ Diabetic cheiroarthropathy

C.2 Chronic Inflammatory Rheumatism: ☐ Reactive arthritis ☐ Rheumatoid arthritis ☐ other

C.3 Microcrystalline Arthropathy: ☐ Chondrocalcinosis ☐ Polyarticular tophaceous gout with destructive arthropathy

Other diagnosis, specify: .....