Shoulder pain: epidemiological, clinical and therapeutic aspects at Ignace Deen National Hospital in Conakry, Guinea

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Abstract

Background: Shoulder pain is a frequent reason for consultation in medicine.
Objective: To describe the epidemiological, clinical and therapeutic characteristics of shoulder pain in the Ignace Deen National Hospital of Conakry, Guinea.
Design: This was a prospective study of descriptive type with a duration of one year from June 1, 2020 to June 1, 2021.
Methods: All patients who consulted the Rheumatology and Physical Medicine Department for shoulder pain were included in this study.
Results: We collected 1561 patients who consulted during the study period, of whom 217 (13.9%) had shoulder pain with an average age of 51.2 years. There was a predominance of women in 114 (52.5%) of the cases with a sex ratio (M/F) of 0.9. Housewives were the most affected 73 (33.7%) of cases. Pain was severe in 41% of patients with a VAS of 7/10. Rotator cuff injuries were the most common in 146 (67%) and the treatment was dominated by the combination of level I and II analgesics in 113 (52%) and physical therapy in 136 (62.7%) of cases.
Conclusion: Shoulder pain was frequent in the most active segment of the population, with a female predominance. It is often intense and of mechanical type evolving towards chronicity and accompanied by a functional impotence, the treatment remains conservative associated with the taking of analgesic.

Key words: Pain, Shoulder, Conakry, Guinea

Introduction

Painful shoulder refers to any pain originating from the joint itself or its surrounding tissues[1] . Limitation of shoulder movement due to pain, stiffness or weakness can result in significant disability and affect a person's ability to perform daily activities and work[1, 2]. Shoulder pain is a common symptom, with an estimated prevalence of 16-26%[2,3]. It is the third most common cause of musculoskeletal consultation in primary care, and approximately 1% of adults consult a general practitioner each year for new shoulder pain[1]. It is one of the most common symptoms for which patients consult rheumatology, physical medicine and general medicine, it is called scapulalgia or Omalgia[4].

Shoulder pain has common clinical characteristics[5]. There is no consensus on the diagnostic criteria and clinical evaluation, which complicates the choice of treatment[6]. To our knowledge, little data is available on shoulder pain in Black Africa. The objective of this study was to describe the epidemiological, clinical, paraclinical and therapeutic characteristics of shoulder pain at the Ignace Deen CHU National Hospital in Conakry, Guinea.

Materials and methods

This was a prospective descriptive study of one year duration, from June 1, 2020 to June 30, 2021, conducted in the Rheumatology and Physical Medicine Department of the Ignace Deen National Hospital, CHU of Conakry, Guinea. All patients presenting with Spontaneous onset shoulder pain were included.
The following data were collected:
(i) Demographic age, sex, profession
(ii) Comorbidities (stroke, diabetes, hypertension)
(iii) Duration of pain, its location,

radiation and intensity (evaluated by the visual analog scale)

(iv) The presence of swelling, amyotrophy, increase in local heat was noted.

Shoulder examination included the following manouvers:

The combined mobility test were used for all patients, Neer test, Hawkins, yocum, Clairon's test and painful arc test have been used for the evaluation of impingement and Rotator cuff syndrome.

Jobe's and painful arc test used for tendonitis/ bursitis, and, for the tears syndromes, Geber's test and Lift off test were used. Adhesive capsulitis external rotation combined mobility test were used. Gleno humeral arthritis /AC joint arthritis and Instability, The combined mobility test were used.

(i) Erythrocyte Sedimentation Rate (ESR) in mm/h, C-Reactive Protein (CRP) in mg/l, rheumatoid factors (RF), uric acid.

(ii) Joint fluid examination for cells bacteria and microcrystals.

(iii) Imaging, standard radiography and ultrasound.

(iv) Functional disability was assessed by the Constant score[16].

(v) Therapeutic data: analgesics of level I and II of the World Health Organization (WHO), general and local corticotherapy, colchicine, antibiotic therapy.

(vi) The software, EPI info 7.2. 2. was used for data analysis. A value of $p<0.05$ is considered statistically significant

Patients were recruited with informed consent and anonymity, and we obtained the approval of the ethics committee of the Ignace Deen National Hospital for this study.

Results

All demographic and clinical results are presented in Table 1. Of the 1561 patients who presented to our combined departments 217 (13.9%) had shoulder pain.The average age of our patients was 51±14 years (21-82 years) with a slight female predominance 114 (52.5%). Housewives were the most affected 73 (33.7%). Diabetes was the most common comorbidity 67 (30.9%) cases. The mean time to consultation was 20 ± 17 weeks (range : 1 and 96). Pain was chronic in 137 (63.1%), progressive in 174 (80.2%), mechanical in 134 (61.7%) patients. The anterior aspect of the shoulder was by far the most common location (18:85.7%) with radiating to the neck in 52 (24%) of the cases. The average visual analogue scale was 7.34 ± 2 (4 - 10/10).

Table 1: Sociodemographic and clinical characteristics of patients

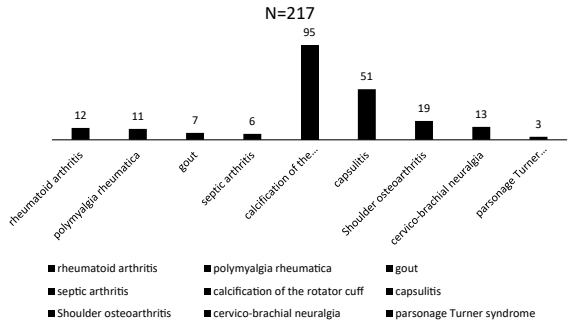
Socio-demographic data	(%)
Mean age at diagnosis (SD)	51.2 ± 14.25
Sex: female, n (%)	114 (52.5%)
Clinical data	
Average time to consultation in weeks	20 ± 17.4
Average VAS	7.34 ± 2
Profession	n (%)
Driver	25 (11.5)
Farmer	12 (5.5)
Pupil/Student	11 (5.1)
Housewife	73 (33.7)
Merchant	25 (11.5)
Civil servant	61 (28.1)
Sportsman	10 (4.6)
History	
High blood pressure	28 (12.9)
Rheumatological disease	57 (26.3)
Diabetes	67 (30.9)
stroke	51 (23.5)
Type of pain	
Inflammatory	63 (29.1)
Mechanical	134 (61.7)
Neuropathic	20 (9.2)
Progression	
Progressive	174 (80.2)
Location	
Anterior	186 (85,7)
Internal	91 (42)
Posterior	89 (41)
External	106 (48.9)
Radiation	
Cervical spine	52 (24)
Thoracic spine	6 (2,8)
Upper arm	26 (12)
Forearm	11 (5)
Hand	26 (12)
None	96 (44.2)
Evolution	
Acute	80 (36.9)
Chronic	137 (63.1)

VAS: Visual Analog Scale; Hypertension: high blood pressure; Stroke: cerebrovascular accident

Table 2: Tests and clinical maneuvers performed in our patients

Tests and maneuvers	(%)
Rapid mobility test	168 (77.4)
Neer's test	35 (16.1)
Hawkins sign	14 (6.5)
Yocum sign	15 (6.9)
Jobe maneuver	14 (6.5)
Limitation of external rotation	49 (23)
Paw test	12 (5.5)
Bugle sign	7 (3.2)
Automatic return sign	1 (0.5)
Geber's test	8 (3.7)
Belly Press-test	2 (0.9)
Sign of Popéyé	2 (0.9)
Fulcrum test	2 (0.9)
Apprehension to the backward push	2 (0.9)
Sign of the Furrow	1 (0.5)
Sign of the anteroposterior tiroi	1 (0.5)

Figure 1: Distribution of patients by aetiology



The results of the various tests of shoulder movement and function are shown in Table 2. CRP was positive in 100/207 tests performed (46.08%) with a mean of 42 mg/l (10 - 135), rheumatoid factors was positive in 11 (10.3%) patients, hyperuricemia was noted in 15 (14%) patients. Seventy-two patients underwent joint puncture plus cytobacteriological analysis and search for microcrystals. *Staphylococcus aureus* was detected in 15 (20.8%).

Standard radiography was performed in 71 (32.7%) patients, with signs of shoulder osteoarthritis found on 19 (26.8%) images. Ultrasound examination of 122 patients (56%) showed 95 (43.7%) cases of calcific tendinopathy of the rotator cuff. Adhesive capsulitis in 51 (23.5%) cases and omarthrosis in 19 (8.7%) cases.

There were 57 cases of specific rheumatic diseases, rheumatoid arthritis 16 (28%); polymyalgia rheumatica 11(5,06%), shoulder osteoarthritis 19 (8,7%); gout 7 (3.3%); remitting seronegative symmetrical synovitis with pitting edema 2 (3.5%) (Figure 1).

The treatment of patients was essentially based on the combinations of non-steroidal anti-inflammatory drugs and tramadol in 113 (52%) patients; general corticosteroid therapy in 55 (25.3%) and local corticosteroid therapy in 6.9% of cases; antibiotic therapy was prescribed in 28 (12.9%) of cases, and physiotherapy was used in 136 (62.7%) patients. The mean Constant index score in our series was 76.69 ± 13.49 (extremes 43 and 99).

Discussion

This study show as 13.9% frequency of shoulder pain among patients presenting to the Rheumatology and Physical Medicine Departments of the Ignace Deen National Hospital in Conakry, Guinea.

Jellad *et al*[7] reported a prevalence of 21.3% of shoulder pain. In the Physical Medicine Department of the University Hospital of Monastir in Tunisia. The lower rate in this study could be explained by a different selection process where we excluded cases of traumatic origin and also by the fact that in our setting many patients prefer to treat themselves at home.The lifetime prevalence of shoulder pain is 70%, and about 50% of people with shoulder pain will experience pain for more than a year[8].. However, other studies estimate the prevalence of shoulder pain to be between 6.9% and 26% depending on the population studied[2].

In this study these various shoulder conditions tend to affect the most active segment of the population, mainly women, cause chronic mechanical pain which is often intense and disabling.

The average age of our patients was 51.2 ± 14.25, with a predominance in the age range of 46 to 60 years. Maestroni *et al*[9] found a mean age of 49.6 ± 11.6. Thiel *et al*[10] and Farshid *et al*[11] in 2016 reported a mean age of 52.15 ± 11.82 and 52 ± 17 respectively. Indeed, there is a high exposure to wear and tear of shoulder structures after 40 years of age with an increase in the incidence of occurrence of shoulder pain with increasing age.

The results of this study are in agreement with the data in the literature[12,13], there was a predominance of women with a sex ratio of 0.9. This female predominance in our study could be explained by the simple fact that women have a greater sensitivity to pain[14-16] and also that they perform enough activity mobilizing the upper

limbs, particularly in household and daily tasks in our context of a developing country. This also corroborates the predominance of housewives in our study.

In this study, pain was severe in 41% with a mean VAS of 7.34. However, Farshid *et al*[17] and Azanmasso *et al*[13] reported a mean VAS of 5.3 ± 1.7 and 6.1 ± 2.7 respectively. This high pain intensity in our study could be explained by the fact that most of our patients neglect their pain and come at an advanced stage and wait until they have functional discomfort with mobilization to consult.

The combined rapid mobility test was positive in 77.4%. This could be due to the fact that the combined mobility test is the first test performed in front of any shoulder pain and it allows the detection of a limitation related to a shoulder injury and therefore the preferred test. Moreover, among the specific tests, the Neer test was the most positive in 16.1% of cases, which could be explained by the predominance of subacromial impingement in rotator cuff pathologies.

During our study, 52.6% of our patients underwent an ultrasound examination; our results are in disagreement with those of Smith *et al*[12] who used MRI in 76.7% of cases. This could be explained by the high cost of MRI in our context and also by the low income of the patients.

Rotator cuff injuries were the most common in 146 (67%). This was reported by Jellad *et al*[7] in 2011 who reported a predominance of rotator cuff pathologies with a frequency of 76.4%. In the same sense, Windt *et al*[8] stated that about 75% of shoulder pain is related to rotator cuff pathology. In fact, the diagnosis of rotator cuff damage is primarily clinical and due to the fact that in our context of developing countries we have a limited technical platform that does not allow access to the latest techniques of paraclinical exploration of the shoulder (arthrography, MRI). The treatment of our patients was essentially based on analgesics, in particular the combination of level I and II in 52.1% of cases, and physical therapy in 62.7% of cases for pathologies of abarticular and mechanical origin. For patients whose pain was of inflammatory origin, we combined analgesics, corticoids, antibiotics and colchicine or an immunosuppressant depending on the aetiology. For shoulder pain of neurological origin, we combined analgesics with tricyclic antidepressants.

Adhesive capsulitis (frozen shoulder) was our second most common diagnosis in 51 patients of whom 35 were diabetic.

The functional disability of our patients was evaluated by the Constant score with a mean of 76.69. Azanmasso *et al* [13] reported a mean score of 72.4 ± 18.87. There is a correlation found between age and the Constant score (P value = 0.01). The older the patient, the greater the impact of pain on quality of life.

Our study is one of the few studies to focus on shoulder pain in our context. Based on the frequency of consultation and the clinical characteristics of shoulder pain, it has allowed us to have a better knowledge of the pathologies involved and the therapeutic attitude to adopt in the face of shoulder pain. However, it must be emphasized that the relatively short duration of the study did not allow for the follow-up of patients over time and the evaluation of long-term therapeutic effectiveness.

Conclusion

This study showed that shoulder pain was frequent in the elderly, with a predominance of the female sex. It is often intense of mechanical type evolving most often towards chronicity and accompanied by a functional impotence, the treatment remains conservative associated with the taking of analgesic with a favorable evolution in the major part of the cases.

Declaration of interest

The authors declare that they have no conflict of interest.

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