

Anserine bursitis among patients with knee osteoarthritis

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ABSTRACT

Objective: Anserine Bursitis (AB) is often associated with Knee Osteoarthritis (OA), and if identified can be easily treated. The objective of this study was to determine the percentage of patients with painful OA knees having accompanying, clinically diagnosed AB.

Methodology: This case series was conducted at Division of Rheumatology, FMH College of Medicine and Dentistry, Lahore from September 18th, 2009 to February 28th, 2010. Sixty consecutive rheumatology out-patients meeting the American College of Rheumatology (ACR) criteria for the diagnosis of OA knees. Patients with rheumatoid arthritis, other inflammatory arthritis and trauma were excluded. Patients with OA were examined specifically for any tenderness on the upper medial aspect of the tibia. Radiographic severity of OA knees was scored for each patient by a rheumatologist on a standing X-ray of knees in antero-posterior view. The Kellgren-Lawrence (K-L) grading scheme was used to score the severity of OA.

Results: In these 60 patients, AB was clinically present in 23(38)%. Females were 57(95%). The mean age of patients with AB was 58.6 ± 8.1 years whereas it was 57.9 ± 9.2 years in patients without AB (p-value 0.66). The mean BMI was 30.6 ± 4.9 in patients with AB whereas it was 30.0 ± 4.9 in patients without AB (p-value 0.64). K-L score ≥ 3 was present in 61% of the patients with AB Vs 78.4% of the patients of OA without AB (p-value 0.06).

Conclusion: Anserine Bursitis was present in about one third of patients with painful OA knees and its presence was found to be un-related to age, weight and severity of OA.

KEY WORDS: Knee pain, Osteoarthritis Knees, Anserine Bursitis.

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INTRODUCTION

Osteoarthritis (OA) is a degenerative joint disease having variable prevalence and pattern amongst different populations.¹ A study conducted in the Northern part of Pakistan showed a prevalence of OA as 37 per 1000.² The cause of knee pain in patients with OA remains unclear, because hyaline cartilage has no innervation.³ However, the pain may come from the associated biomechanical dysfunction leading to stress on the ligaments, tendon insertions and inflammation in neighboring bursa. Therefore, patients with OA knees are vulnerable to peri-articular pathology, which can cause knee pain. A wide range of peri-articular lesions occur around the knee joint.⁴ Anserine Bursitis (AB), which is inflammation of anserine bursa, is also associated

with knee OA and may be the cause of knee pain in patient with knee OA.⁵ Unfortunately, AB is one of the ignored causes of knee pain despite the fact that it is easily treatable. Brookler and Morgan reported radiographic changes of osteoarthritis in 83.3% of their patients with anserine bursitis.⁶

Anserine bursa lies under the conjoined tendon of the Sartorius, Gracilis and Semitendinosus muscles at their insertion into the medial aspect of the tibia, approximately 5 cm below the medial joint line.⁷ AB is predominantly seen in overweight middle aged women.⁸ AB is entirely a clinical diagnosis based on history of knee pain characteristically worse on descending or climbing stairs and upon rising from a chair and on examination, presence of tenderness at the site of bursa.⁶ There had been several reports of association of OA knees with AB.⁹ The exact incidence of AB is unknown. In one study conducted on 600 consecutive patients referred to a rheumatology outpatient clinic, 108 received the diagnosis of "soft tissue rheumatism"; among those, 40% had a diagnosis of anserine bursitis.¹⁰ In a study from Korea, it was seen in 46.8% of patients with OA. In the same study 91.6% of the patients who received a local injection of methylprednisolone plus lidocaine at the anserine bursa had relief of pain.¹¹

To our knowledge no study has been done on association of AB in Pakistani patients with OA of knees which is a treatable cause as the pain due to its inflammation can be alleviated with a minimal intervention in the form of a glucocorticoid injection in the bursa.¹² To highlight the importance of recognizing this treatable cause of knee pain, we conducted a cross-sectional descriptive study to determine the percentage of patients with painful OA knees having accompanying, clinically diagnosed AB.

METHODOLOGY

This descriptive, case series was conducted at the Division of Rheumatology, out-patient department, FMH College of Medicine and Dentistry, Lahore from September 18th 2009 to February 28th, 2010. The study was approved by the Institutional Review Board of Fatima Memorial Hospital. Patient sampling was non-probability, purposive, so all consecutive patients diagnosed with OA knees were enrolled over a period of six months. Informed consent was obtained from all patients as per Good Clinical Practice (GCP) guidelines. All patients were diagnosed according to American College of Rheumatology (ACR) clinical and radiographic

criteria of Primary OA Knees. As per criteria all had Knee pain and at least one of the three, 50 years of age or older, stiffness lasting less than 30 minutes or crepitus plus osteophytes on standing X-ray Knees antero-posterior view.¹³

Patients with Rheumatoid arthritis, other inflammatory arthritis and trauma were excluded. Patients with OA were examined specifically for any tenderness on the upper medial aspect of the tibia 5 cm below the joint line. The pressure applied by the examining rheumatologist was sufficient enough to blanch the nail bed i.e. equivalent to 4 kg. Radiographic severity of OA knees was scored for each patient by a rheumatologist on a standing antero-posterior view by Kellgren-Lawrence (K-L) grading scheme (a scale of 0, representing normal, to 4, representing most severe).¹⁴

Statistical Analysis was done on SPSS V.17. All the qualitative variables were presented as percentages and quantitative variables as means and standard deviations. Differences between the patient's demographic variables and radiographic severity in patients with or without AB were determined by calculating p-values by EPI INFO 6.0. T-test was applied for means and SD and chi-square test for percentages. P-value of ≤ 0.05 was considered significant.

RESULTS

Over the six months study period, all the consecutive 60 patients meeting the ACR criteria for the diagnosis of OA were enrolled from the out-patient clinic. Anserine Bursitis was clinically present in 23(38.3%) patients and out of this 95.8% were females. The mean age of the patients with AB was 58.6 ± 8.1 years whereas it was 57.9 ± 9.2 years without AB. The mean weight was 77.8 ± 8.1 kg and mean BMI 30.6 ± 4.9 in patients with AB whereas it was 75.3 ± 11.3 kg and 30.0 ± 4.9 respectively in patients without AB.

Out of 23 patients with Anserine Bursitis 14 (60.9%) and out of 37 patients without AB 29(78.4%) had OA grade 3 or more as per Kellgren-Lawrence grading scheme. The mean K-L score in patients with AB was 2.7 ± 0.9 and in OA patients without AB it was 3.1 ± 0.7 (p-value 0.059). Bilateral AB was seen in 12 (52%) out of 23 patients. Varus deformity was reported in 9 (39%) patients with AB and 14 (38%) patients without AB.

For comparison of demographic data and radiographic severity of the knee OA in Patients with and without AB see Table-I.

Table-I: Comparison of Demographic Data and Radiographic Severity of the Knee Osteoarthritis (OA) in Patients with and without Anserine Bursitis (AB).

	OA with AB (n=23)	OA without AB (n=37)	P-Value
Age (Years). Mean \pm SD	58.6 \pm 8.1	57.9 \pm 19.2	0.660
Female n (%)	22 (95.8%)	35 (94.6%)	0.670
Weight (Kg). Mean \pm SD	77.8 \pm 8.1	75.2 \pm 11.2	0.338
BMI. Mean \pm SD	30.6 \pm 4.9	30 \pm 4.8	0.642
Radiographic Severity* Mean \pm SD	2.7 \pm 0.9	3.1 \pm 0.7	0.059
Patients with K-L score \geq 3	14 (60.9%)	29(78.4%)	0.143

*By Kellgren-Lawrence (K-L) grading scheme (0= normal to 4 = most severe)

DISCUSSION

In this study, we found a significant proportion of patients with OA knees, also had AB. Larsson and Baum observed that several patients referred to a tertiary rheumatology outpatient clinic with articular degenerative disease and knee pain also had AB.¹⁰

Pain and tenderness in the medial compartment of knee joint may cause diagnostic confusion and patients may undergo unnecessary surgical interventions. This is especially true for medial meniscal lesions and medial compartment OA, so as per protocol for diagnosing AB, we specifically looked for tenderness 5 cm inferior to the joint line on upper medial aspect of tibia. It has been reported in literature that in some cases, these different disorders can coexist.¹⁰

In a similar study from Korea on 62 patients with knee osteoarthritis, the diagnosis of AB was verified by clinical examination only. They found AB to be present in 46% of the patients with OA, which is slightly higher than our figure of 38%.¹¹ Most of the patients in this study were females. The same female predominance has been observed in other studies as well.⁹

The mean age and BMI in our patients with AB was 57.9 \pm 19.2 and 30.6 \pm 4.9 respectively, however in our study there was no statistically significant difference in mean BMI in patients of OA knees with or without AB. In earlier reports it was classically described to be a disease of middle aged obese females with heavy legs.¹⁰ (See Table-I).

Regarding the severity of OA the mean K-L score for patients with AB in our study was rather lower as compared to patients with OA alone. As per a review article by Alvarez there are knowledge gaps in its pathogenesis and the role of predisposing factor like severity of OA needs to be assessed.¹⁵

In a study by Gibson et al about prevalence of knee pain amongst affluent and poor in Karachi,

showed that knee pain was reported up to 17% in affluent population older than 55 years, and knee pain was found to be more common in females.¹⁶ Approximately in half of these cases, there were characteristic varus deformity but in our clinic based study we found varus deformity present in 38.3% patients with painful knee OA.

To date, the diagnosis of AB is clinical so we didn't use any ultrasound or MRI to confirm the diagnosis of AB. Moreover it has been reported that in majority of the cases, ultrasound and MRI studies do not confirm the clinical diagnosis.¹⁷

One of the limitations of our study is that for K-L grading for severity of OA, all the radiographs were read by the rheumatologists and discussed with radiologist if deemed necessary, but inter-observer as well as intra-observer variability was not calculated. Secondly we didn't calculate WOMAC (Western Ontario and McMaster Universities) index in our patients as the study was not designed to address intensity of symptoms and functional outcomes. Thirdly we didn't use Dolorimeter to calibrate finger pressure for palpation as was done by Hill et al in their study on detecting peri-articular lesions around the knee joints.¹⁸

This study though small, highlights that clinicians taking care of patients with OA knees should be aware of this associated condition. They should specifically look for tenderness at the anatomical site of anserine bursa while examining the patients with knee OA. It is imperative to identify these patients as minimal intervention in the form of local corticosteroid injection, can alleviate the pain due to the AB.¹⁹ This not only would improve their functional outcome and quality of life but also help in decreasing the indiscriminate use of Non-steroidal anti-inflammatory drugs (NSAID's) especially in elderly patients having co-morbidities like coronary heart disease, renal insufficiency and peptic ulcer disease.

CONCLUSION

Anserine Bursitis was present in about one third of patients with painful OA knees, highlighting that clinicians treating patients with OA should be aware of this treatable cause of knee pain. In our case series AB was found to be un-related to age, weight and severity of OA. Association of anserine bursitis with the gender needs to be further evaluated in a more controlled study design.

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Author's contribution:

All authors were involved in conceptualizing, study designing, acquisition of data and data interpretation. Article was drafted by author MAS & MRH and critically revised by author NMA & SF for important intellectual content.