**REDEVELOPING BURSITES FROM A POLYNOMIC VIEW: DEFINITIONS; TYPES; TREATMENTS AND STATE OF THE ART**

**ABSTRACT**

This study proposed a comprehensive review on the subject of bursitis, an inflammatory condition of the synovial bursae that is often overlooked or underestimated. A literature review investigated the definitions, types, treatments and state of the art of bursitis. ~~The complexity of this pathology and its clinical relevance were explored~~, providing an up-to-date overview for health professionals and researchers. With this in mind, the general objective was to comprehensively investigate and describe bursitis, including definitions, types, treatments and the current state of the art. The specific objectives were to identify the different types of bursitis and their distinctive characteristics; to analyze the methods of diagnosing and assessing bursitis; to review the treatment options available, including conservative and surgical approaches; and to examine the current state of research and future prospects in the field of bursitis. The methodology used was a qualitative, bibliographical, and exploratory study of the Integrative Literature Review (ILR) type. The results showed that repetitive trauma, infections, rheumatic diseases and other underlying conditions were among the factors contributing to the development of bursitis. Different types of bursitis were identified, each with different clinical characteristics and therapeutic approaches. Diagnostic methods range from simple clinical examinations to advanced imaging modalities such as ultrasound and magnetic resonance imaging. As for treatments, there has been a growing trend towards conservative approaches such as physiotherapy, although surgery is still considered in severe cases.

**Keywords:** Bursitis. Treatment. State-of-the-art reviews.

**INTRODUCTION**

Bursitis can be seen as an inflammatory condition affecting the bursae, which are structures designed to minimize friction between muscles, bones and tendons during the rubbing process. In this vein, Dalal (2022) reports in his study that the bursae contain a quantity of fluid which makes it possible to cushion and reduce the friction resulting from the sliding of one structure over another. In his findings, he emphasized that bursitis can result from injuries caused by excess weight, certain jobs, the use of excessively constant movements, arthritis and gout.

In line with this, Noffs (2020) reported that bursitis is usually caused by irritation from excessive and improper use of force, gout, injury, rheumatoid arthritis and can also have unknown causes. In this sense, he pointed out that the bursa normally contains a small amount of liquid, where it provides cushioning, it reduces friction and at the same time prevents wear and tear when one structure slides over another, which, among these bursae, some are located below the skin, others below the tendons and muscles.

As a result, it was pointed out that although these inflammations have been recognized and studied for decades, the constant increase in knowledge in the medical field allows the subject to be re-evaluated from new perspectives. The polynomial analogy offered a promising approach to understanding the complexity of bursitis, unfolding its multiple factors and variables.

Thus, by adopting a polynomial perspective, we sought not only to understand bursitis in its entirety, but also to recognize the variables involved in its aetiology, parasitology, symptoms and clinical presentation, since this approach sought to offer a greater understanding of bursitis and also to provide valuable insights for improving prevention, diagnosis and treatment actions.

The justification for this study lies in the need for a more comprehensive understanding of bursitis in its current state, given that traditional approaches focus on symptoms and treatments in isolation, and through the analogy of polynomials it was possible to understand these pathologies as complex systems. This analogy allowed us to analyze the physical aspects of inflammation and its clinical manifestations together with predisposing factors such as genetics and lifestyle.

In addition, the relevance of working on this topic also lies in the impact of bursitis on patients' quality of life, given that these conditions can cause pain, functional limitations, negatively affecting the ability to carry out daily activities; with this in mind, Dalal (2022, p. 2) states in his study that "Bursitis generally causes pain and tends to limit movement, however, the specific symptoms depend on the location of the inflamed bursa". Therefore, through this search, the aim was to understand bursitis through the lens of polynomials, thus verifying its current state regarding its symptoms, diagnoses, approaches and treatments.

In view of the above, the general aim of this study was to investigate and describe bursitis, including its definitions, types, treatments and current state of the art. The specific objectives of the study were to identify the different types of bursitis; to analyze the methods for diagnosing and assessing bursitis; and finally, to discuss the available treatment options.

Based on the findings, the aim is to analyze the definitions of bursitis, thus verifying its types, methods of diagnosis and treatment, and ultimately to analyze its current state in line with new discoveries in the scientific field, given that by adopting the analogy of the polynomial, knowledge was sought about bursitis and through this to provide significant insights for the implementation of actions for the prevention, diagnosis and treatment of this pathology.

**THEORETICAL FRAMEWORK**

**Bursitis: Definitions and Pathophysiology in the Shoulder**

To define bursitis, the authors Frantz and Stacke (2012) point out that it refers to inflammation of the bursae, where they are fluid-containing sacs that act as shock absorbers in the friction between bones, muscles and tendons, in which it is emphasized that their injuries result from repetitive strain, systemic inflammatory diseases, trauma and/or infection.

However, Oliveira (2022) observed that these injuries can affect different parts of the body, where their incidences can occur in the shoulders, knees, elbows, hips and feet. Also according to the author, the most common complaints of this injury occur in the shoulder, most frequently in the subacromial bursa located in the rotator cuff, where its main function is to reduce the friction process resulting from shoulder movements.

In this vein, Galante's (2018) findings highlighted that the bursae are bag-shaped structures in which there is a small amount of fluid that serves to create friction between the structures that slide over each other. In addition, the author defined that the bursae can be divided into subacromial and subdeltoid, where their functions are to reduce injuries and friction between these structures.

At the same time, Oliveira's (2022) findings emphasized that the pathophysiology of shoulder bursitis can be triggered by different factors that lead to its inflammatory process, such that the author cites repetitive trauma, overload, acute and/or recurrent injuries, infections and systemic inflammatory conditions as examples. Thus, according to the author's findings, it has been shown that medium- and high-intensity sports activities as well as certain occupations end up requiring constant shoulder movements, thus causing shoulder impingement syndrome.

To their credit, the studies by Sousa *et al.* (2023) corroborated the previous findings by emphasizing that shoulder injuries can be associated with work and repetitive strain, since it can be understood that excessive movement can generate condensation between the structures of the subacromial bursa, rotator cuff and tendons, thus causing tears in these structures.

Noffs (2020) pointed out that when the subacromial bursa becomes inflamed, there is a significant increase in the volume of fluid inside the bursa, which eventually causes pain and restriction of movement in the shoulder. The pain is usually localised in the upper and lateral part of the shoulder and can radiate down the arm. It tends to worsen with activities that involve lifting the arm or rotational movements, and is often more intense at night, disturbing sleep. As well as pain, he highlighted other symptoms such as tenderness on palpation, swelling and a popping sensation when moving the shoulder.

According to Galante (2018), due to trauma or overuse, it is possible for the subacromial bag to become a chronic condition, resulting in inflammatory reactions. These inflammations can significantly affect movement and symptoms can be associated with joint pain, stiffness, oedema and redness at the site. The symptoms can be gradual and can worsen over time, where the person affected by these lesions may experience discomfort when walking, where even at rest, this discomfort can worsen into severe pain. In addition, it was pointed out that if bursitis persists, the muscles can degenerate or atrophy.

**Types, Diagnosis and Treatment of Bursitis**

With regard to the types of bursitis, Figueiredo (2017) presented two types of bursitis, chronic pain and acute pain, where the symptoms are, respectively, pain lasting more than three months and the pain can disappear as the individual's body recovers. In this vein, the author pointed out that the diagnosis of patients with symptoms of bursal lesions should be carried out in consultation with a professional specializing in orthopedics, so that this diagnosis should be carried out through a careful assessment of the patient's history and physical examinations, which are carried out using resonance imaging and ultrasound.

In parallel with these findings, Guerino and Brito (2021) emphasized in their studies that the treatment of shoulder bursitis can be carried out using conservative approaches, where therapeutic exercises and manual therapy provide greater benefits for the non-invasive treatment of bursitis inflammation. Oliveira's (2019) findings show that physiotherapy is indispensable for the treatment of subacromial bursitis, given that strengthening and stretching exercises make a beneficial contribution to improving shoulder movements.

Also according to Oliveira (2019), it was emphasized that in cases where bursitis is resistant to conservative treatment, invasive procedures are necessary, with surgical intervention being the last resort. In this regard, the author listed bursectomy and acromioplasty procedures, which correspond, respectively, to the removal of inflamed bursae and enlargement of the subacromial space.

Corroborating these findings, the authors Silva, Junior and Gonçalves (2020) understood that in addition to therapeutic treatments, it is necessary for the patient to rest and modify the degrees of intensity in relation to their activities, thus enabling the prevention and reduction of inflammation caused by bursitis lesions. According to the findings of these authors, other procedures for the treatment of bursitis have been highlighted, including: the use of non-steroidal anti-inflammatory drugs, the application of ice, the use of muscle relaxants and, in recent cases, the use of corticosteroids.

In parallel with these findings, Noffs (2020) emphasized in his study that in order to prevent subacromial bursitis, it is necessary to avoid overload, trauma and excessively repetitive movements in the shoulder. These actions, together with the adoption of ergonomic postures and the use of appropriate techniques during physical activities, can significantly strengthen the shoulder muscles and consequently improve flexibility in this region.

**METHODOLOGY**

This is a qualitative, bibliographical, and exploratory study of the Integrative Literature Review (ILR) type.

For Severino (2013), bibliographical research is carried out on the basis of available records of previous research related to the subject of study. As for exploratory research, he emphasized that it seeks to gather information on a particular subject and object, mapping and delimiting the conditions surrounding the object under investigation. With regard to qualitative research, Minayo (2019) emphasized that it seeks to explain data, indicators, verified trends and/or build theoretical models applicable to practice. Therefore, its purpose is to study history, representations, relationships, beliefs and perceptions.

In order to carry out this research, we followed the six stages of the Integrative Literature Review (ILR) proposed by Ganong (2010): "elaboration of the guiding question, literature search or sampling, data collection, critical analysis of the studies included, discussion of the results and presentation of the integrative review".

In the first stage, the theme was identified and the guiding question was drawn up. In this study, the theme chosen was bursitis and the guiding question was: what are the definitions; types; treatments and state of the art of bursitis? The descriptors used were: "bursitis"; "treatments" and "state of the art review".

When searching or sampling the literature, the criteria for exclusion and inclusion of studies were inserted, whereas inclusion criteria articles were selected from the period 2019 to 2024 in the VHL, PubMed and SciELO databases, where the descriptors chosen for the searches were combined in each database using the Boolean operator AND. Complete and free studies were included, available in Portuguese and/or English, and relevant studies were selected that addressed the definitions, classifications, treatments and advances in the management of bursitis. Exclusion criteria were incomplete studies, paid-for studies and studies that did not cover the intended period.

Data was collected by categorizing the studies. In order to systematize the evaluation of the selected studies, this information was extracted using an instrument validated by the databases. Based on the inclusion/exclusion criteria and data collection, 11 studies were included in the final analysis.

The critical analysis of the studies included in the Integrative Review will assess the publications based on their objectives, methodology, results and conclusions. The discussion of the results will analyze the selected publications, using the guiding question of this study as a subsidy. The aim will be to establish points of convergence and divergence between the articles. In the sixth and final stage, through the presentation of the integrative review, there will be a presentation and synthesis of knowledge, in which there will be discussion on the subject under study.

**RESULTS**

The VHL identified 30 studies, of which 15 were filtered, 5 were included for analysis and 10 were excluded. PubMed found 7 studies, of which 5 were filtered, 3 were included and 2 were excluded. SciELO found 38 studies, of which 9 were filtered, 3 were included and 6 were excluded. In total, 11 studies were left to analyze the results and discussion, where the period selected corresponded to the years 2019 to 2024.

After a thorough analysis of these publications and the application of exclusion criteria, 11 studies were selected for the research sample, which investigated the definitions; types; treatments and state of the art of bursitis, where they came from the BVS, PubMed and SciELO databases. As for the methodology employed, 1 Systematic Review, 2 Case Report, 2 Case Studies, 3 Literature Review, 1 Case-Control Study, 1 Study of Documentary Analyzes and Bibliographic Review of an exploratory and explanatory nature and 1 Study of Literature Review and a Case Study (see Table 1).

This study found a significant concentration of research into bursitis in the south-east (3). In addition, of the 11 studies selected, 9 were scientific articles and 2 were monographs, while the 3 international scientific articles were distributed in Japan (1) and New York (2).

All of these studies were centered on the polynomial that converged on the definitions, types, treatments and state of the art of bursitis. It was also observed that the majority of publications related to this topic occurred in the years 2019 (2), 2020 (1), 2021 (4), 2022 (2), 2023 (1) and 2024 (1), as shown in Table 1 below:

**Table 1:** Presentation of scientific publications on Shiatsu with authors' names, years of publication, journal names, methodological approaches and main findings

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **AUTHOR** | **YEAR** | **SOURCE** | **TYPE OF PUBLICATION** | **STUDY SITE** | **RELATIONSHIP WITH THE RESEARCH OBJECTIVES** | **METHODOLOGICAL APPROACH** | **MAIN FINDINGS** |
| Takamasu and Miyoshi | 2024 | CMAJ | Article | Tokyo (Japan) | Yes | Case studies | A diagnosis of rheumatoid arthritis accompanied by intermetatarsal bursitis was made; treatment was started with methotrexate, salazosulfapyridine and, in the short term, non-steroidal anti-inflammatory drugs. Three months after starting treatment, the patient's symptoms, including pain in the forefoot, had disappeared. |
| Cagle *et al.* | 2023 | Rev Bras Orthopaedics | Article | New York | Yes | Case studies | This study sought to understand how a standardized treatment protocol would help patients with vaccine-related shoulder injury (SIRVA). |
| Leão *et al.* | 2022 | Radio Brás. | Article | São Paulo | Yes | Case-control study | It found that subacromial-subdeltoid bursitis, glenohumeral and hip synovitis are prevalent imaging findings in patients with PMR. |
| Oliveira | 2022 | University of Cuiabá - UNIC | Monograph | Rondonópolis (Mato Grosso) | Yes | Literature review | It sought to understand the role of physiotherapists in the treatment of patients with shoulder bursitis. |
| Duarte and Duarte | 2021 | Higei@ magazine. Unimes. | Article | São Paulo | Yes | Case report | He presented the anatomy and pathology of the bursae to help clinicians make the correct diagnosis. |
| Rodrigues *et al.* | 2021 | Brazilian Journal of Development | Article | Curitiba | Yes | Case report | observed the effectiveness of physiotherapy treatment in a patient with bursitis and tendinitis. |
| Cagle | 2021 | Rev Bras Orthopaedics | Article | New York | Yes | Systematic literature review | It demonstrated the clinical outcomes that can be generalized, as well as a critical analysis of the factors associated with the proposed mechanism, which will provide guidelines for avoiding new shoulder injuries. |
| Guerino and Brito | 2021 | Salesiano Auxilium Catholic University Centre of Araçatuba-SP | Article | Araçatuba (São Paulo) | Yes | Literature review | He demonstrated some treatment methods for shoulder impingement syndrome and analyzed their importance in the conservative treatment of this condition, which affects countless people around the world. |
| Silva; Junior and Gonçalves | 2020 | Physiotherapy at the Faculty of Guaraí / IESC | Monograph | Tocantins | Yes | Documentary analyzes and bibliographical review of an exploratory and explanatory nature. | He discussed the main approaches to preventing and promoting occupational illnesses among professionals in the municipal school system. |
| Finkler and Martin | 2019 | Interdisciplinary Journal of Health Promotion - RIPS | Article | Porto Alegre | Yes | Integrative Literature Review | It carried out a review of studies showing auriculotherapy treatments for shoulder pain and protocols reported in books. |
| Oliveira | 2019 | Vox Metropolitana Magazine | Article | Recife | Yes | Literature review and a case study | Results were obtained in the improvement of each patient's clinical condition through manual therapy, kinesiotherapy and electrotherapy resources. |

**Source:** Prepared by the authors (2024).

The results of the review indicated a variety of factors that contribute to the development of bursitis, where the main factors highlighted were trauma and repetitive movements, infections, rheumatic diseases and other underlying conditions. In this vein, Oliveria (2022, p. 11) stated in his study that "Bursitis can thus be derived from trauma, repetitive movements, overexertion, gout and arthritis".

He also noted from the results of the table that the different types of bursa were identified in various anatomical regions, where the authors Silva, Junior, Gonçalves (2020, p. 8) emphasized in their findings that "The locations with the highest numbers of bursitis occurrences are the shoulders, elbows and knees, and the risk factors for contracting the disease are infections, arthritis, gout, trauma, excessive use of the joints".

With regard to diagnostic methods, it was observed that through the results, they encompass clinical examinations, evaluation of the patient's history and the use of images, such as ultrasound and magnetic resonance imaging; in view of this, Duarte and Duarte (2021, p. 2) reported that "Its clinical diagnosis can be easily confused with articular, tendinous or muscular causes, which present different treatment". Additionally, Leão *et al.* (2022, p. 348) emphasized that "The diagnosis of bursitis was based on net distension of the bursa, identified on fat-saturated T2-weighted coronal images (T2wFS) of the shoulder and axial T2wFS images of the hip".

As for treatments, there is a growing trend towards conservative approaches, such as rest, physiotherapy and the use of anti-inflammatory drugs, although it has been observed that surgery is feasible in severe cases; in this vein, Oliveira (2022, p. 12) cited that "The treatment for bursitis needs to be guided by an orthopedic doctor and a physiotherapist and aims to reduce pain and inflammation in the affected area", and according to the author "Among the physiotherapeutic measures most commonly used for this treatment are electrothermophototherapeutic resources, kinesiotherapy and manual therapy methods" (Idem, p. 12).

**DISCUSSION**

**The Prospect for Different Types of Bursitis**

Duarte and Duarte (2021) pointed out in their study that around 20 different types of bursitis were identified, most of which were described around the pelvis and hip, with varying degrees of incidence and prevalence. They mentioned that different bursae are located around the hip and can be divided into three groups, called the anterior compartment, the lateral compartment and the posterior compartment.

Oliveira (2022) emphasized in her study that there are two types of bursitis, classified as chronic and acute pain, both of which have their own unique characteristics. She emphasized that sub-acromial bursitis presents itself as acute pain, where the person affected by this injury feels severe pain in the shoulder, where it can be seen that acute pain can be progressive in intensity, starting in the shoulder and spreading down the arm to the wrist. She also pointed out that depending on the type of bursitis, whether primary or secondary chronic, the pain can spread to the arm, forearm, neck and fingers.

In agreement, Cagle *et al.* (2023) also pointed out in their study that bursitis comes in two forms, chronic pain and acute pain, each of which presents in very different ways. Thus, according to the author, in order to differentiate between bursitis and other pathologies, it is necessary to carry out a medical assessment of the patient's symptoms, together with an analysis of their routine, in order to prescribe the correct treatment for this illness.

In addition, the findings of Silva, Junior and Gonçalves (2020) show the incidence and manifestation of types of bursitis in individuals, in which their study found that 91% of physical education teachers had some type of symptom associated with bursitis, where the areas most affected by this pathology were the lower back, shoulders, neck, wrists, hands and fingers, ankles and feet, knees, thighs and hips, and elbows, with an incidence of 51.5%, 49.2%, 47.6%, 42%, 41.2%, 33.3%, 23.8% and 11.9% respectively.

**Diagnosis and Evaluation Methods for Bursitis**

With regard to the main methods for assessing and diagnosing bursitis, the findings of Oliveira (2022) stand out. In his research, he explained that when a patient seeks help and further clarification from an expert, if they are suspected of showing signs and symptoms of bursitis, they need to go through a number of stages in order to be completely sure of their exact diagnosis. These include a dialogue with a specialist, at which point the symptoms, triggers, possible etiologies and the frequencies at which they occur are further clarified, followed by a physical examination to ascertain and assess local sensitivity, both preserved and affected, and then tests to measure muscle strength.

In addition, this researcher also mentioned that these tests can have painful sensations, as there can be friction between local tendons, as well as compression of bursae. Therefore, tests can be requested and/or carried out to characterize the fluid inside the bursa, as well as other tests such as MRI, X-ray, blood count and ultrasound of the affected joint. He also emphasized that ultrasound and MRI are the most prominent non-invasive tests that are routinely requested to diagnose the injuries caused by the pathology known as bursitis (OLIVEIRA, 2022).

Cagle (2021) emphasized that in relation to the diagnosis of bursitis, some characteristics may not be identified or observed during physical examinations, as the findings of magnetic resonance imaging are the most accurate signs of the diagnosis, given that this imaging technique reveals a maximization of fluid accumulation in the bursitis. In the same vein, Leão *et al.* (2022) pointed out that bursitis can be diagnosed by observing the distension of the bursa fluid, which can be better recognized by MRI scans, which corroborates a more effective and assertive diagnosis of this condition.

At the same time, Rodrigues *et al.* (2021) presented a clinical case report of a teacher who, after having to leave her school due to the pandemic, began to report painful symptoms in her right shoulder, which limited her ability to perform some motor repertoires. This led her to go to a health professional, where she was asked to undergo an ultrasound scan and orthopaedic tests in order to reach a fuller and more accurate diagnosis. She was therefore diagnosed with bursitis and supraspinatus tendinopathy and referred to a physiotherapy service.

Oliveira (2019) presented another clinical case, in which a 60-year-old elderly patient, when admitted to a health service, reported excruciating pain in her shoulder and that she had been feeling the pain for three years, where it started with moderate pain and progressively increased over the years. She was advised to undergo some physical examinations and an ultrasound scan, where she was diagnosed with bursitis in her left shoulder and that it was evolving into adhesive capsulitis.

In this context, Duarte and Duarte (2021, p. 2) emphasized the need for an accurate assessment and diagnosis, since, in their view, in relation to bursitis, "Its clinical diagnosis can easily be confused with joint, tendon or muscle causes, which have different treatment". In view of this, it is essential to understand the pathologies and anatomies of the bursae, because through this understanding it is possible to make a correct diagnosis.

**Available Treatment Options for Bursitis**

According to Oliveira (2022), as soon as the diagnosis of bursitis is confirmed, the professional must focus on each case of bursitis, its singularities and distinctions, in order to establish an efficient and effective treatment. Therefore, this professional must take into account the patient's "life history, as well as work and sports activity, limitations, what symptoms the individual has and the intensity of these symptoms, the affected joint, the nature of the condition, whether it is acute or chronic, among other points" (Idem, p. 26).

By analyzing these factors, the professional will indicate the most appropriate type of treatment for the person. It has been pointed out that there are several treatments available for bursitis, including physiotherapy, infiltration and arthroscopy, where these three procedures approached with different methods can significantly help to promote pain relief and consequently reduce the inflammatory process of the bursae (OLIVEIRA, 2022, p. 26).

Among these treatments, physiotherapy is widely used to treat bursitis. In this context, Rodrigues *et al.* (2021) and Guerino and Brito (2021) pointed out that physiotherapy can be used in conjunction with other modalities, including thermotherapy, electrotherapy - consisting of laser, ultrasound, therapeutic exercises and manual therapy, involving manipulation and mobilization.

In their study, Rodrigues *et al.* (2021, p. 54) identified a clinical case in which a patient who was undergoing physiotherapy sessions was able to perform flexion movements from the second week onwards; however, the author added that the external rotation movements caused discomfort and limitations in performing his movements, where progress in performing these movements was only noticed from the third week onwards.

Oliveria (2019, p. 147) pointed out that through physiotherapy treatment methods and techniques, it was possible to perform transcutaneous electrical stimulation, ice application, known as cryotherapy, passive and active mobilization on the limb affected by the lesions, where these should be performed in order to prevent the limb from freezing completely, thus limiting the degrees of movement of the limb affected by bursitis.

Finkler and Martim (2019) emphasized in their study that another treatment to be used for bursitis is auriculotherapy, since it can be conceived as an effective treatment insofar as it is seen as a simple, practical technique that is easy to learn and has no undesirable side effects. It can be used as a complementary treatment for shoulder pain, where it can provide anti-stress, analgesic, stimulating and sedating effects, among others.

Furthermore, Silva, Júnior and Gonçalves (2020) highlighted in their findings that in addition to therapeutic treatments, patients affected by bursitis symptoms may be prescribed medication, among which the most commonly used are anti-inflammatory drugs and muscle relaxants. Still along these lines, Takamasu and Miyoshi (2024) discussed in their findings a clinical case of a patient who, after undergoing the use of non-steroidal anti-inflammatory drugs and the use of methotrexate and salazosulfapyridine for three months, saw his pain disappear.

Furthermore, with regard to the assessment and treatment of bursitis, Cagle (2021, p. 304) stated that due to the various types of treatment, be they physiotherapy, non-steroidal anti-inflammatory drugs or surgery, they cannot be recommended on an individual basis. According to the author, treatment should be carried out and recommended on the basis of all the evidence for each diagnosis.

**CONCLUSION**

Given the complexity and clinical relevance of bursitis, this study sought to highlight the importance of understanding its definitions, types, diagnoses, treatments and the current state of the art in this pathology. As a result, the findings show that the types of bursitis can have different characteristics, ~~given that in order for them to be identified it is necessary to focus on individual approaches to diagnoses and therapeutic aspects.~~

In this respect, it can be seen from the findings that in order to manage bursitis it was necessary to carry out an assessment with a professional who is an expert in this area so that an accurate diagnosis can be made and treatment can begin as prescribed by this professional. At the same time, the findings show the use of conservative approaches to treat bursitis, such that physiotherapy, auriculotherapy, the use of anti-inflammatory drugs and muscle relaxants stand out; treatment through surgery is prescribed in severe cases and situations where conservative treatment has not had the desired effects.

Thus, it can be understood that in relation to the state of the art of bursitis, current studies can provide valuable insights for understanding the parasitological, etiological and symptomatological factors of bursitis, given that technological advances such as diagnostic imaging and conservative interventions enable more accurate diagnosis and more efficient treatments with approaches centered on the individual needs of each patient.

Corroborating these findings, the study sought to emphasize the need for a better understanding of the current state of bursitis, especially its definitions, types, diagnoses and treatments. Through these findings, it is possible to provide new approaches for health professionals to adopt an efficient stance in the diagnosis and treatment of this pathology.

It can be said that these advances are essential for the development and application of less invasive and more effective approaches to patient recovery, since it is understood that these findings highlight the need for health professionals specializing in the treatment of bursitis to be updated on their new findings, since this knowledge will enable an individualized approach based on scientific evidence for the diagnosis and treatment of the symptoms of this pathology.

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