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Interdisciplinary Clinical Management And Rehabilitation Of Prepatellar Bursitis: An Integrated Imaging, Therapeutic, Pharmacologic, Nursing, And Health Information Approach

Maryam Ali Mohamed Daffri[1], Ashwag Mohammed Ali Maashi[2], Osamah Saleh Mohammed Alateeg[3], Abdulmalik Ayad Alotaibi[4], Fahad Jawaed Helal Alotaibi[5], Amna Ali Mahnashi[6], Sharifah Ali Alshuqayfi[7], Amjad Ali Ageeli[8], Aeshah Ali Alshuqayfi[9], Ibrahim Bin Ferdous Al-Dosari[10], Naif Mohammed Jaber Kalufah[11], Abdulaziz Lafe M Aldhafeeri[12], Khalid Abdullah Khashman Aldhafeeri[13], Talal Awadh M Alsulays[14]

[1]Abo Arish General Hospital
[2]Abo Arish General Hospital
[3]Al-Quwayiyah General Hospital
[4]Third Health Cluster In Riyadh, Dawadmi General Hospital
[5]Third Health Cluster In Riyadh, Dawadmi General Hospital
[6]Primary Health Care Center In Al-Haklah
[7]Maternity And Children Hospital
[8]Maternity And Children Hospital
[9]King Khalid Hospital
[10]Prince Salman Bin Mohammed Hospital In Dalm
[11]Abu Arish General Hospital, Laboratory
[12]Ministry Of Health
[13]Ministry Of Health
[14]Al-Imamah Hospital

Abstract:

Background: Prepatellar bursitis is an inflammatory condition affecting the superficial bursa anterior to the patella, commonly caused by repetitive kneeling, direct trauma, infection, or systemic inflammatory diseases. Its superficial location predisposes it to mechanical irritation and septic complications, making timely diagnosis essential for preventing morbidity.
Aim: This study aims to integrate clinical, imaging, therapeutic, pharmacological, nursing, and health-information perspectives to provide a comprehensive, evidence-based approach to the evaluation and management of prepatellar bursitis.
Methods: A multidisciplinary review was conducted, examining anatomical characteristics, etiological factors, epidemiology, pathophysiology, clinical presentation, diagnostic tools, and treatment strategies. The study synthesizes current literature, imaging modalities such as ultrasound and MRI, fluid aspiration analysis, and conservative to advanced therapeutic interventions.
Results: Prepatellar bursitis is most frequently associated with mechanical trauma and occupational kneeling. Infection accounts for up to one-third of clinically presenting cases. Ultrasound proved valuable in differentiating bursitis from cellulitis, while aspiration remained the diagnostic gold standard in suspected septic cases. Most nonseptic cases responded to conservative management, whereas septic bursitis required antibiotics, repeated aspiration, and sometimes surgical drainage or bursectomy. Chronic or recurrent cases benefited from corticosteroid injection, sclerotherapy, or minimally invasive endoscopic excision.
Conclusion: An interdisciplinary management strategy significantly improves diagnostic accuracy, treatment outcomes, and prevention of complications. Early recognition, proper differentiation between septic and nonseptic etiologies, and individualized care optimize prognosis and minimize recurrence.

Keywords: Prepatellar bursitis, knee inflammation, septic bursitis, aspiration, ultrasonography, conservative therapy, bursectomy, occupational injury.

Introduction:
Bursitis refers to an inflammatory process affecting a bursa, which is a synovium-lined, fluid-containing structure strategically positioned to minimize friction between adjacent anatomical components such as bones, tendons, muscles, and ligaments [1]. Bursae are widely distributed throughout the body, particularly near joints exposed to repetitive motion or mechanical stress. When inflammation develops within these structures, patients may experience localized pain, swelling, warmth, and functional limitation, often prompting medical evaluation. Large joints, including the shoulder, hip, knee, and elbow, are frequently involved because of their biomechanical demands and exposure to repetitive loading. Within the knee joint, four principal bursae are anatomically recognized: the suprapatellar, infrapatellar, pes anserine, and prepatellar bursae. The prepatellar bursa is located superficially between the anterior surface of the patella and the overlying subcutaneous tissue. Its superficial position renders it particularly vulnerable to external mechanical forces. Among the bursae of the knee, the prepatellar bursa is the most frequently affected, and across the entire body, it represents the second most commonly inflamed bursa after the olecranon bursa. The anatomical placement of the prepatellar bursa predisposes it to irritation from prolonged or repetitive kneeling, a mechanism commonly observed in certain occupations and daily activities. This repetitive mechanical stress explains the historical association of prepatellar bursitis with specific professions, leading to its traditional designation as “housemaid’s knee” or “carpet-layer’s knee.” Beyond occupational exposure, everyday activities that involve sustained pressure on the anterior knee may similarly contribute to the development of inflammation. The clinical relevance of prepatellar bursitis lies not only in its frequency but also in its potential to progress to infection or chronic inflammation, underscoring the importance of early recognition and appropriate management [1].

Etiology
The structural characteristics of bursae, particularly their thin synovial walls, make them susceptible to inflammatory changes when exposed to mechanical or systemic insults. In prepatellar bursitis, acute direct trauma to the anterior knee, such as a fall or blow, can initiate an inflammatory cascade within the bursa. More commonly, repetitive low-grade trauma resulting from frequent kneeling leads to cumulative micro-injury, ultimately provoking inflammation and fluid accumulation. This mechanism is especially relevant in occupational settings that require sustained contact between the knee and hard surfaces. In addition to mechanical factors, several systemic conditions contribute to the development of prepatellar bursitis. Metabolic and inflammatory disorders such as gout and rheumatoid arthritis can lead to crystal deposition or immune-mediated synovial inflammation within the bursa. Infectious etiologies also play a significant role, particularly when bacteria gain access to the bursal sac through direct inoculation from overlying skin lesions, minor abrasions, or penetrating trauma. Septic bursitis represents a clinically important subset, as it is associated with increased morbidity and requires prompt antimicrobial intervention. Immunocompromised states further increase susceptibility to both aseptic and septic bursitis. Conditions such as diabetes mellitus, chronic corticosteroid therapy, and long-term hemodialysis impair host immune responses, facilitating inflammation and infection within the bursa. While chronic bursitis may arise from persistent repetitive trauma, this pattern is less frequently observed in the prepatellar bursa compared with other superficial bursae, such as the olecranon. The multifactorial etiology of prepatellar bursitis highlights the interplay between local mechanical stressors and systemic predisposing factors in its pathogenesis [2].

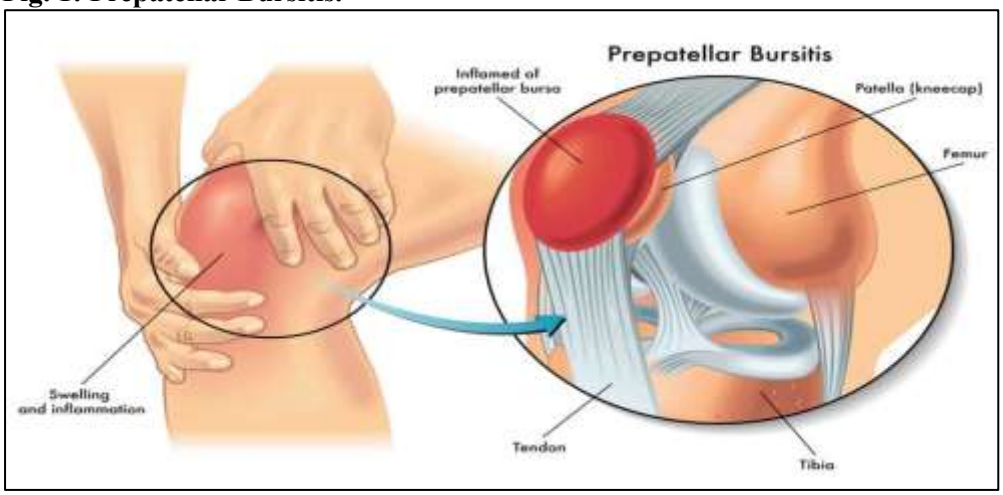
Epidemiology
Accurately determining the incidence of prepatellar bursitis remains challenging, as many mild or self-limited cases do not result in medical consultation. Conversely, cases that present for clinical evaluation often represent more severe or complicated forms, including septic bursitis. Despite these limitations, epidemiological estimates suggest an annual incidence of approximately 1 case per 10,000 individuals. Demographic patterns indicate a strong male predominance, with more than 80% of affected individuals being men between 40 and 60 years of age [2]. This distribution likely reflects occupational exposure and activity-related risk factors more commonly encountered in this population. Although most cases of prepatellar bursitis are non-septic, a substantial proportion may be complicated by infection. Up to one-third of clinically presenting cases are estimated to be septic, a finding associated with increased morbidity, prolonged treatment courses, and a higher likelihood of functional impairment [2]. Septic

bursitis appears to occur more frequently in pediatric populations, possibly due to increased susceptibility to skin trauma and hematogenous spread of infection. Prepatellar bursitis can affect individuals across all age groups, but the risk is notably elevated in those with chronic systemic illnesses. Patients with diabetes mellitus and other immunosuppressive conditions demonstrate a higher incidence of both aseptic and septic bursitis, reflecting impaired immune defenses and delayed healing. Occupational exposure, lifestyle factors, and comorbid disease states collectively shape the epidemiological profile of prepatellar bursitis, emphasizing the need for targeted preventive strategies in high-risk populations [1][2].

Pathophysiology

The pathophysiological process underlying prepatellar bursitis begins with an inciting insult that disrupts normal bursal homeostasis. Mechanical trauma to the bursa leads to increased local blood flow and enhanced vascular permeability, facilitating the migration of leukocytes into the synovial space. Simultaneously, synovial cells within the bursal lining increase fluid production, resulting in bursal distension and clinical swelling. These events collectively form the basis of the inflammatory response characteristic of bursitis. When infectious agents are involved, septic bursitis may develop through several mechanisms. Direct inoculation from penetrating injury or compromised overlying skin represents a common pathway. Alternatively, contiguous spread from adjacent soft tissue infections or hematogenous dissemination from distant sites may introduce pathogens into the bursal sac. Once infection is established, inflammatory responses intensify, leading to increased pain, erythema, and systemic signs of infection. Analysis of aspirated bursal fluid provides important diagnostic insight into the underlying pathophysiology. Microscopic examination may reveal monosodium urate crystals in gout, calcium pyrophosphate dihydrate crystals in pseudogout, or bacterial organisms in septic bursitis. At a molecular level, inflammatory fluid typically demonstrates elevated concentrations of mediators such as tumor necrosis factor-alpha, various interleukins, and cyclooxygenase-derived products, reflecting activation of both innate immune and inflammatory pathways [3]. These biochemical changes perpetuate synovial inflammation and tissue irritation, accounting for the clinical manifestations observed in prepatellar bursitis [1][2][3].

Fig. 1: Prepatellar Bursitis.



History and Physical

Bursitis may present as either an acute or chronic condition, with considerable variability in symptom severity and clinical manifestation. A thorough and structured history is fundamental to accurate diagnosis and appropriate management. Particular attention should be given to the patient's medical background, including conditions associated with immunosuppression such as diabetes mellitus, chronic corticosteroid therapy, renal failure, or other systemic illnesses that may predispose infection or delayed healing. Social and occupational histories are equally important, as repeated mechanical stress plays a central role in the development of bursitis. Occupations and activities involving prolonged kneeling, leaning, or direct pressure on joints, including housekeeping, carpentry, roofing, gardening,

and certain athletic pursuits, are strongly associated with superficial bursae inflammation, especially prepatellar bursitis. The temporal pattern of symptoms often provides valuable diagnostic clues. Acute bursitis typically develops over a short period and is frequently associated with recent trauma, direct inoculation, infection, or crystal-induced inflammatory conditions such as gout or calcium pyrophosphate deposition disease. In contrast, chronic bursitis usually evolves insidiously and is more often linked to repetitive microtrauma, overuse, or underlying inflammatory arthropathies. Patients with chronic disease may report intermittent swelling or fullness rather than pain, reflecting gradual bursal expansion over time [2][3].

Physical examination findings vary depending on the acuity and etiology of the condition. In acute bursitis, inspection and palpation commonly reveal localized swelling, erythema, increased warmth, and tenderness over the affected bursa. Pain may limit active and passive range of motion, although true joint restriction is typically absent unless adjacent structures are involved. In cases of chronic bursitis, the bursa may appear enlarged but is often non-tender, with preserved joint mobility, as the bursal sac has adapted to increased fluid volume. Careful evaluation of the overlying skin is essential in all cases. Signs of trauma, abrasions, puncture wounds, or cellulitis may suggest direct inoculation and raise suspicion for septic bursitis. Comparative examination of the contralateral, unaffected bursa can aid clinical judgment. Evidence suggests that a surface temperature difference of as little as 2.2 °C between the skin overlying the affected bursa and the corresponding area on the opposite side demonstrates both high sensitivity and specificity for septic bursitis [4]. However, localized warmth alone is not diagnostic, as it may also be present in noninfectious acute inflammation. Given the overlap in clinical features between septic and non-septic bursitis, particularly during initial presentations, physical examination findings must be interpreted in conjunction with the patient's history and risk factors. In individuals without prior similar episodes or with systemic risk factors, further diagnostic evaluation is warranted to exclude infection and guide timely intervention [3][4].

Evaluation

The diagnosis of bursitis is established primarily through clinical assessment, with emphasis placed on a detailed history and careful physical examination. In most cases, routine laboratory investigations offer limited diagnostic value and are not required for initial evaluation. Nevertheless, selected diagnostic modalities may serve as important adjuncts when clinical uncertainty exists or when alternative conditions must be excluded. Imaging studies, in particular, can assist in refining the differential diagnosis and identifying associated structural abnormalities. Plain radiographic imaging may be considered in the setting of acute trauma, especially when there is concern for an underlying fracture, calcification, or the presence of a retained foreign body. Although plain film x-rays do not directly visualize the bursa, they are useful for excluding osseous pathology that may mimic or coexist with bursitis. Ultrasonography has a more direct role in evaluation, as it allows real-time visualization of superficial bursae and surrounding soft tissues. This modality is particularly valuable in differentiating true bursal inflammation from cellulitis, where subcutaneous cobblestoning may be observed. Ultrasound also permits dynamic assessment of joint movement, which assists in excluding tendinous or ligamentous injury and provides practical guidance during needle aspiration procedures [5].

Magnetic resonance imaging is rarely necessary for routine diagnosis but may be employed when symptoms persist, presentations are atypical, or alternative diagnoses are strongly suspected. On MRI, prepatellar bursitis characteristically appears as an oval lesion with fluid signal intensity located between the patella and the overlying subcutaneous tissues, allowing for clear anatomical delineation [6]. This modality is particularly useful in distinguishing bursitis from soft tissue tumors, abscesses, or inflammatory joint conditions. Needle aspiration of bursal fluid represents a critical diagnostic step when the etiology of bursitis is unclear, particularly in cases where infection or crystalline disease is suspected. Aspirated fluid should undergo comprehensive laboratory analysis, including cell count with differential, Gram stain, culture, glucose measurement, and crystal examination. Crystal analysis is essential for identifying gout or pseudogout, as negatively birefringent crystals confirm monosodium urate deposition, whereas positively birefringent crystals are indicative of calcium pyrophosphate dihydrate deposition disease. Cellular composition further aids differentiation, as a predominance of polymorphonuclear leukocytes suggests septic bursitis, while mononuclear cell predominance favors noninfectious inflammatory causes.

Although leukocyte counts in bursal fluid are not entirely specific, levels exceeding 2000 cells per cubic millimeter demonstrate high diagnostic utility, with reported sensitivity and specificity for septic bursitis of 94% and 79%, respectively [7]. Measurement of glucose concentration within aspirated fluid also contributes diagnostically, as reduced glucose levels are commonly associated with infectious processes. Gram stain sensitivity varies widely, ranging from 15% to 100%, limiting its reliability as a standalone test [8][9]. Consequently, culture of bursal fluid remains the diagnostic gold standard for confirming septic bursitis and guiding appropriate antimicrobial therapy [10].

Treatment / Management

Management of prepatellar bursitis requires an individualized and systematic approach that accounts for the acuity of presentation, underlying etiology, and patient-specific risk factors. The condition may present in either acute or chronic forms, and effective treatment depends on addressing both symptomatic inflammation and precipitating causes. Underlying systemic conditions such as gout require targeted medical therapy, while septic bursitis necessitates prompt and appropriate antimicrobial intervention. Across the clinical spectrum, early recognition of the causative mechanism remains central to preventing complications and improving outcomes. Initial management of both acute and chronic prepatellar bursitis emphasizes conservative therapy. Rest, cryotherapy, activity modification, and nonsteroidal anti-inflammatory medications form the cornerstone of first-line treatment. These interventions aim to reduce inflammation, alleviate pain, and limit further mechanical irritation of the bursa. Aspiration may be incorporated into conservative management to relieve pressure, improve comfort, and facilitate diagnostic evaluation when infection or crystal-induced disease is suspected [11]. The majority of acute, nonseptic cases demonstrate favorable responses to these measures, often resolving without the need for invasive procedures. Chronic cases are managed similarly, although the prolonged inflammatory process may necessitate additional interventions to achieve sustained symptom control.

Corticosteroid injection may be considered in selected patients with chronic, noninfectious prepatellar bursitis who fail to respond to standard conservative therapy. This intervention aims to suppress persistent synovial inflammation and reduce recurrent fluid accumulation. Careful patient selection is essential, as corticosteroid use is contraindicated when infection is suspected. Early and accurate differentiation between septic and nonseptic bursitis therefore plays a pivotal role in management decisions. Although conservative measures benefit both groups, delayed recognition of septic bursitis can result in increased morbidity and prolonged recovery [2]. Structured patient care with close clinical follow-up is critical in reducing the need for hospitalization and minimizing long-term complications. Regular reassessment allows clinicians to monitor response to therapy, identify early signs of treatment failure, and adjust management accordingly [12]. Incision and drainage are infrequently required but may be indicated in traumatic or septic cases that fail to improve with aspiration and medical therapy [13]. Evidence suggests that oral and intrabursal antimicrobial therapies are generally ineffective for treating septic infrapatellar bursitis. In such cases, hospitalization with repeated needle aspiration and intravenous antibiotic therapy is recommended [13][14].

For patients with persistent or recurrent bursitis refractory to conservative measures, more advanced interventions may be considered. Sclerotherapy using agents such as polidocanol or hypertonic saline has been employed to obliterate the bursal space and reduce fluid reaccumulation in selected cases. Surgical options, including bursectomy, are reserved for recalcitrant disease or cases complicated by repeated infection [15]. In traumatic bursitis unresponsive to initial management, minimally invasive endoscopic therapies offer an alternative to open surgical approaches and may reduce postoperative morbidity [16][17]. Aspiration of the prepatellar bursa serves both diagnostic and therapeutic purposes and should be performed using strict aseptic technique. The site of maximal bursal distension is identified and marked to guide needle placement. After cleansing the area with an antiseptic solution, local anesthesia is achieved using a freezing spray or a small volume of injected anesthetic. A needle is introduced at the point of greatest fluctuance while maintaining gentle negative pressure on the syringe. If resistance is encountered due to contact with bone, the needle is withdrawn slightly and redirected. Complete evacuation of bursal fluid is facilitated by manually milking the contents toward the needle tip. To reduce the risk of reaccumulation, fenestration of the bursal sac through multiple needle passes may be performed. Application of a protective compression bandage further limits fluid recurrence, particularly in traumatic cases. Following aspiration, patients are encouraged to engage in gradual

mobilization, continue cryotherapy, elevate the affected limb, and use oral nonsteroidal anti-inflammatory medications. Aspiration is contraindicated in the presence of adjacent acute fractures, osteomyelitis, overlying skin ulceration, bacteremia, or osteochondral injury [15].

Surgical intervention is considered when conservative and minimally invasive measures fail. Traditional open bursectomy involves excision of the affected bursa through a transverse or longitudinal incision. However, the prepatellar region has limited vascular supply, increasing the risk of wound complications such as necrosis and dehiscence. Endoscopic excision has emerged as an alternative approach that minimizes soft tissue disruption while achieving effective removal of chronically inflamed tissue. The procedure involves irrigation of the bursa, drainage of purulent material when present, and excision of thickened synovial tissue. Following administration of local anesthesia, small anteromedial and anterolateral portals are created around the patella. A 2.7 mm, 30-degree endoscope and motorized shaver are used to excise the bursal sac. After debridement, portal sites are approximated with adhesive strips, and a loose dressing is applied, reducing the risk of wound-healing complications [16]. Hospitalization is indicated for patients with systemic infection, significant comorbidities, or immunocompromised states. In these individuals, intravenous antibiotic therapy is administered for 7 to 10 days, followed by an extended course of oral antibiotics lasting up to two weeks. Patients with mild to moderate septic bursitis may be managed on an outpatient basis with oral antibiotics for approximately two weeks, provided close follow-up is ensured. Surgical removal of the affected bursa is recommended in cases of refractory or recurrent septic bursitis, failure of drainage procedures, immunocompromised status, or critical illness [2]. Through timely diagnosis and a stepwise therapeutic strategy, effective management of prepatellar bursitis can be achieved while minimizing complications and recurrence.

Differential Diagnosis

The differential diagnosis of acute knee pain is broad and must be approached systematically, as multiple musculoskeletal, inflammatory, infectious, and referred conditions may present with overlapping clinical features. Prepatellar bursitis should be distinguished from disorders involving the patellofemoral mechanism, periarticular soft tissues, intra-articular structures, and adjacent joints. Careful attention to symptom onset, location of pain and swelling, functional limitation, and physical examination findings is essential to ensure diagnostic accuracy. Unlike intra-articular pathology, prepatellar bursitis typically presents with localized anterior swelling superficial to the patella, often with preserved joint range of motion except when limited by discomfort. Patellar subluxation or dislocation may mimic prepatellar bursitis, particularly in younger individuals, but is usually associated with a history of acute trauma, instability, or mechanical symptoms. Tibial apophysitis and patellar tendinitis are important considerations in adolescents and physically active populations, presenting with activity-related pain localized to tendon insertions rather than the prepatellar region. Patellofemoral tracking syndrome may cause anterior knee pain exacerbated by stair climbing or prolonged sitting, but it lacks the discrete superficial swelling characteristic of bursitis. Degenerative conditions such as knee osteoarthritis are common causes of knee discomfort, particularly in older adults, and are typically associated with stiffness, crepitus, and reduced joint mobility rather than focal bursal inflammation [15][16].

Inflammatory arthropathies, including reactive arthritis and rheumatoid arthritis, may present with knee pain and swelling, often accompanied by systemic features or involvement of multiple joints. Septic arthritis represents a critical diagnostic consideration, as it produces significant pain, restricted motion, and systemic symptoms, necessitating urgent intervention. Referred pain from hip pathology, such as hip fracture, hip osteoarthritis, or slipped capital femoral epiphysis, may manifest as knee discomfort, particularly in pediatric and elderly populations. Additionally, cellulitis and other skin or soft tissue infections overlying the knee may resemble prepatellar bursitis, underscoring the importance of assessing skin integrity and systemic signs of infection. Internal derangements, including meniscal tears and ligamentous injuries, as well as fractures of the tibial plateau, must also be considered. Inflammation of bursae other than the prepatellar bursa, such as the pes anserine or infrapatellar bursae, may also contribute to anterior knee pain and should be differentiated clinically [18].

Prognosis

The overall prognosis of prepatellar bursitis is highly favorable, particularly when the condition is identified early and managed appropriately. Most cases, especially those that are nonseptic and related to mechanical irritation or minor trauma, respond well to conservative management strategies and resolve without long-term sequelae. Symptom resolution is often achieved with activity modification, anti-inflammatory therapy, and short-term protective measures, allowing patients to return to normal function. The superficial location of the prepatellar bursa facilitates early clinical recognition, which contributes to the generally excellent outcomes associated with this condition. Despite the positive prognosis, the clinical course may be complicated by infection, which significantly increases morbidity and prolongs recovery. Septic prepatellar bursitis may require invasive interventions, prolonged antibiotic therapy, and, in some cases, hospitalization or surgical management. Delayed diagnosis or inadequate treatment of infection can result in persistent inflammation, recurrence, or progression to more serious systemic complications. Patients with underlying immunosuppression, such as diabetes mellitus or chronic corticosteroid use, may experience a more protracted course and are at increased risk for recurrence. Chronic prepatellar bursitis may also affect prognosis, particularly in individuals who are unable to modify occupational or recreational activities that involve repetitive kneeling. In such cases, recurrent inflammation can lead to bursal thickening, persistent swelling, and functional impairment. However, even in chronic or recurrent cases, appropriate escalation of care, including aspiration, injection therapy, or surgical intervention when indicated, generally results in satisfactory outcomes. Overall, with timely recognition, accurate differentiation between septic and nonseptic causes, and adherence to evidence-based management strategies, the long-term outlook for patients with prepatellar bursitis remains excellent [16][17].

Complications

Infection represents the most significant and clinically relevant complication of prepatellar bursitis. Septic bursitis may arise from direct inoculation through skin trauma, contiguous spread from surrounding soft tissue infection, or hematogenous dissemination. Once infection develops, patients may experience increased pain, erythema, warmth, systemic symptoms, and functional limitation. If not promptly addressed, septic bursitis can progress to severe local tissue damage or systemic illness, thereby increasing morbidity. Other complications are often related to therapeutic interventions rather than the disease process itself. Needle aspiration, while diagnostically and therapeutically valuable, carries a risk of introducing bacteria into the bursal space, particularly if aseptic technique is not meticulously observed. Repeated aspiration may also lead to the formation of a chronic fistulous tract between the bursa and the skin surface, resulting in persistent drainage and delayed healing. Corticosteroid injections, although beneficial in selected noninfectious cases, may cause subcutaneous fat atrophy, skin depigmentation, or localized tissue weakening when used excessively or improperly. Bleeding and hematoma formation may occur following aspiration or injection, especially in patients receiving anticoagulant therapy or those with underlying coagulopathies. In rare cases, structural complications such as patellar tendon rupture have been reported, typically associated with repeated injections or chronic inflammation. These potential complications highlight the importance of careful patient selection, adherence to procedural best practices, and close post-intervention monitoring to minimize adverse outcomes [17].

Consultations

Most cases of prepatellar bursitis can be effectively managed in primary care or outpatient settings; however, consultation with orthopedic surgery may be required in treatment-resistant cases. Patients who fail to respond to appropriate conservative therapy, aspiration, or medical management may benefit from specialist evaluation to determine the need for advanced interventions. Orthopedic consultation is particularly important when chronic bursitis leads to significant functional impairment or when recurrent septic episodes occur despite adequate antimicrobial therapy. Surgical consultation is also warranted when imaging or clinical findings suggest alternative diagnoses requiring operative management, such as structural knee pathology or complications related to infection. Collaboration with orthopedic specialists ensures timely decision-making regarding bursectomy or minimally invasive procedures, thereby optimizing patient outcomes and reducing the risk of prolonged morbidity.

Patient Education

Patient education is a central component of preventing both initial episodes and recurrence of prepatellar bursitis. Preventive strategies focus on minimizing mechanical stress and avoiding repetitive trauma to the anterior knee. Patients should be advised to limit frequent kneeling whenever possible and to incorporate rest periods into activities that place sustained pressure on the knee. For individuals whose occupations or daily activities require kneeling, the consistent use of protective equipment, such as padded knee guards, is strongly recommended. Education should also address early recognition of symptoms and the importance of seeking medical evaluation before significant inflammation or infection develops. In sports-related or recreational injuries, appropriate protective gear and adherence to safe training practices may reduce the risk of bursitis. Reinforcing these preventive measures empowers patients to participate actively in their care and reduces the likelihood of recurrent or complicated disease [18].

Enhancing Healthcare Team Outcomes

Optimal management of prepatellar bursitis is best achieved through an interprofessional healthcare approach. Simple, acute, and nonseptic cases can be effectively managed by a coordinated team that includes clinicians, nurses, radiologists, and pharmacists. Nurses play a key role in patient assessment, education, and monitoring response to therapy, while pharmacists contribute by optimizing anti-inflammatory and antimicrobial regimens and identifying potential drug interactions. Laboratory personnel are essential in analyzing aspirated bursal fluid, enabling accurate differentiation between infectious and noninfectious etiologies. In cases complicated by septic bursitis, severe sepsis, or septic shock, inpatient management may be required, with involvement from infectious disease specialists depending on microbial findings. Orthopedic surgeons become integral members of the healthcare team when surgical intervention is considered. Effective communication and collaboration among all team members enhance diagnostic accuracy, streamline treatment decisions, and improve overall patient outcomes by ensuring timely, evidence-based, and patient-centered care.

Conclusion:

Prepatellar bursitis represents a common yet clinically significant condition, largely influenced by mechanical stress, occupational exposure, and systemic disorders. Its superficial anatomical location increases vulnerability to both repetitive trauma and infection, emphasizing the importance of early clinical evaluation. The review highlights that while most cases are benign and respond well to conservative management—including rest, cryotherapy, NSAIDs, and activity modification—accurate differentiation between septic and nonseptic bursitis is essential. Septic cases demand timely aspiration, culture analysis, and appropriately targeted antibiotics, with surgical options reserved for refractory or recurrent infection. Chronic bursitis, particularly in individuals unable to avoid kneeling or repetitive stress, may persist despite standard therapy; however, interventions such as corticosteroid injections, sclerotherapy, and minimally invasive endoscopic bursectomy offer favorable outcomes with reduced complications. Preventive strategies, including knee protection and patient education, remain foundational in reducing disease recurrence. The interdisciplinary approach outlined—integrating clinical assessment, imaging, laboratory diagnostics, and coordinated care among physicians, nurses, radiologists, and pharmacists—ensures comprehensive management and optimal patient outcomes. With timely recognition and evidence-based intervention, prepatellar bursitis maintains an excellent overall prognosis.

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