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# CLINICAL CASE: POSTSTREPTOCOCCAL ARTHRITIS ASSOCIATED WITH COVID-19

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**Abstract**

**Introduction:** Poststreptococcal arthritis associated with COVID-19 is a rare but severe inflammatory condition that arises following a prior COVID-19 infection, contributing to complications of a preceding streptococcal infection. It serves as an example of how COVID-19 may precede and trigger autoimmune diseases. In recent years, there has been an increase in cases associated with infections linked to COVID-19, highlighting the importance of studying the long-term health consequences of the pandemic and the rising incidence of infectious disorders.

**The purpose of the study:** To draw the attention of rheumatologists, general practitioners, and infectious disease specialists to the risks of developing autoimmune diseases following COVID-19 infection, as well as to emphasize the importance of early diagnosis, prevention, and comprehensive management of COVID-19 to minimize long-term complications, including autoimmune disorders.

**Materials and Methods:** To diagnose this condition, patient anamnesis and clinical-laboratory data were collected. Additionally, a review of global publications from the last five years was conducted, examining the role of COVID-19 as a precursor to autoimmune diseases and a predictor of complications from various infectious diseases that may lead to autoimmune pathology.

**Results:** Based on the anamnesis, clinical, laboratory, and instrumental data, a diagnosis of poststreptococcal arthritis associated with COVID-19 was established. The investigation results confirmed the presence of an inflammatory (streptococcal) process related to a previous COVID-19 infection, suggesting a possible link between past infection and the development of an autoimmune disorder.

**Conclusions:** COVID-19 causes a cytokine storm, leading to a decrease in T-lymphocyte levels, suppression of cellular immunity, and increased susceptibility to other infections. In this clinical case, poststreptococcal arthritis developed in a patient with laboratory-confirmed immune alterations following COVID-19. This case underscores the importance of primary and secondary prevention of infectious diseases, as well as the necessity of monitoring the immune status of patients who have recovered from COVID-19 to ensure timely detection and treatment of potential autoimmune complications.

***Keywords:*** *COVID-19, poststreptococcal arthritis, autoimmune diseases.*

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**Резюме**

# КЛИНИЧЕСКИЙ СЛУЧАЙ: ПОСТСТРЕПТОКОККОВЫЙ АРТРИТ АССОЦИИРОВАННЫЙ С COVID-19

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**Введение:** Постстрептококковый артрит, ассоциированный с COVID-19, представляет собой редкое воспалительное заболевание суставов, появляющееся на фоне предшествующей инфекции COVID-19, что привело в свою очередь к осложнению перенесённой стрептококковой инфекции. Данный момент показывает один из примеров того, что COVID-19 может быть предиктором аутоиммунных заболеваний. После пандемии за последние годы прослеживается уровень роста случаев инфекций, аутоиммунных заболеваний, связанных с COVID-19, что демонстрирует значимость изучения и наблюдения долгосрочных следствий.

**Цель:** Привлечь внимания ревматологов, врачей общей практики и инфекционистов к рискам развития аутоиммунных заболеваний на фоне перенесенной инфекции COVID-19, а также акцентировать важность ранней диагностики, профилактики и комплексного лечения COVID-19 с целью минимизации продолжительных осложнений, включая аутоиммунные расстройства.

**Материалы и методы:** Для диагностики данной патологии были собраны анамнестические и клинико-лабораторные данные пациента. Проведен обзор мировых публикаций за последние 5 лет, в которых рассматривается роль COVID-19 как предиктора аутоиммунных заболеваний и осложнений разнообразных инфекционных заболеваний, которые могут привести к развитию аутоиммунной патологии.

**Результаты:** На основании анамнеза, клинико-лабораторных и инструментальных данных был поставлен диагноз: постстрептококковый артрит, ассоциированный с COVID-19. Результаты обследования подтвердили наличие воспалительного процесса (стрептококкового), связанного с перенесенной инфекцией COVID-19, что показывает вероятную связь между перенесенной инфекцией и развитием аутоиммунного расстройства.

**Выводы:** COVID-19 вызывает цитокиновый шторм, что в свою очередь приводит к снижению уровня Т-лимфоцитов, угнетению клеточного иммунитета и повышенной восприимчивости к другим инфекциям. В данном клиническом случае на фоне перенесенного COVID-19 и снижения иммунной активности у пациента развился постстрептококковый артрит. Этот случай показывает важность первичной и вторичной профилактики инфекционных заболеваний, также необходимость мониторинга иммунного статуса пациентов, перенёсших COVID-19, для своевременного выявления и лечения возможных аутоиммунных осложнений.

***Ключевые слова:*** *COVID-19, постстрептококковый артрит, аутоимунные заболевания.*

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**Түйіндеме**

# КЛИНИКАЛЫҚ ЖАҒДАЙ: COVID-19- АССОЦИРЛЕНГЕН СТРЕПТОКОККТАН КЕЙІНГІ АРТРИТ

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**Кіріспе:** COVID-19-бен ассоцирленген стрептококктан кейінгі артрит, COVID-19 инфекциясы аясында стрептококк инфекциясының асқынуына алып келген, сирек кездесетін буындардың қабынулық ауруы. Осы клиникалық жағдай COVID-19 аутоиммунды аурулардың ізашарлығының бір мысалы. Пандемиядан кейінгі соңғы жылдар инфекциялардың, сондай-ақ COVID-19-мен байланысты аутоиммунды аурулардың өсуі байқалды, бұл өз кезегінде COVID-19-дың ұзақ мерзімді салдарларын зерттеу мен бақылаудың өзектілігін көрсетеді.

**Зерттеудің мақсаты:** COVID-19 инфекциясы аясында аутоиммунды аурулардың даму қауіптілігіне ревматологтардың, жалпы тәжірибелік дәрігерлердің, инфекционистердің назарын аудары, сондай-ақ COVID-19 нәтижесінде қалыптасатын ұзақ мерзімді асқынулар және аутоиммунды бұзылыстрады азайту мақсатында, COVID-19-дың ерте диагностикасына, профилактикасына, кешенді еміне аса жоғары мән беру қажет.

**Материалдар мен әдістер:** Осы патологияны диагностикалау үшін науқастың анамнездік және клиникалық-зертханалық деректері жиналды. Сондай-ақ, соңғы 5-жылдық әлемдік COVID-19 аутоиммунды аурулардың ізашары және аутоиммунды патологияның дамуына әкелуі мүмкін әртүрлі жұқпалы аурулардың асқынуларының болжаушысы рөлін қарастырылған соңғы 5-жылдағы әлемдік басылымдарға шолу жасалды.

**Нәтижелер:** Анамнезді, клиникалық-зертханалық және аспаптық деректерді бағалау негізінде COVID-19-бен аасоцирленген стрептококктан кейінгі артрит диагнозы қойылды. Зерттеулер нәтижелері COVID-19 инфекциясымен байланысты қабыну процесінің (стрептококктық) болуын растады, бұл бастан өткерген инфекция мен аутоиммундық бұзылыстың дамуы арасындағы ықтимал байланысты көрсетеді.

**Қорытындылар:** COVID-19 Т-лимфоциттер деңгейінің төмендеуіне, жасушалық иммунитеттің тежелуіне және басқа инфекцияларға сезімталдықтың жоғарылауына алып келетін «цитокиндік дауылды» тудырады. Осы клиникалық жағдайда COVID-19 және иммундық белсенділіктің төмендеуі аясында науқаста стрептококктан кейінгі артрит дамыды. Бұл жағдай жұқпалы аурулардың бірінішілік және екіншілік профилактикасының маңыздылығын, сонымен қатар COVID-19-ды басынан өткерген науқастардың иммундық жағдайын бақылау арқылы аутоиммунды асқынулардың уақытылы анықталуы мен емінің қажеттілігін көрсетеді.

***Түйінді сөздер:*** *COVID-19, стрептококктан кейінгі артрит, аутоиммунды аурулар.*

***Дәйексөз үшін:***

*Ногаева М.Г., Аташева А.А., Омарғали Қ.С., Нургалиева Б.К.* Клиникалық жағдай: COVID-19- ассоцирленген стрептококктан кейінгі артрит // Ғылым және Денсаулық сақтау. 2025. Т.27 (1). Б. 267-273. *doi 10.34689/SH.2025.27.1.029*

**Introduction**

Post-streptococcal arthritis is an inflammatory joint disease that develops after a streptococcal infection, most often after pharyngitis or tonsillitis caused by group A streptococcus (Streptococcus pyogenes). The development of the disease is associated with the body's immune response to streptococcal antigen, which leads to the formation of autoantibodies and activation of inflammatory processes in the joints. Clinically, PSA is manifested by pain and swelling in one or more large joints, such as the knee and ankle, and is usually self-limiting, disappearing after a few weeks [1,8,10,6].

The relationship between infections like COVID-19 and the emergence of autoimmune disorders has drawn the attention of the medical community in recent years. The SARS-CoV-2 virus causes coronavirus infection (COVID-19), which can cause damage to many organs and systems and range in clinical manifestation from asymptomatic to severe. Pathogenetically, COVID-19 causes endothelopathy, systemic inflammatory responses, and hyperactivity of the coagulation cascade, which can result in organ failure and micro- and macrothrombosis [2,3,4,11,12,5,13].

Recent research suggests that COVID-19 may be linked to the development of infectious diseases, including arthritis, after a streptococcal infection. Although there are studies on poststreptococcal arthritis, they don't look at how it relates to SARS-CoV-2. Poststreptococcal arthritis linked to COVID-19 is an uncommon clinical condition that has not received enough attention and requires more research, including thorough diagnostic evaluation and elucidation [8,2,9,3,4,11,5,7].

In this paper, we describe a case of PSA in a patient who had been infected with COVID-19, which apparently served as a trigger factor for the activation of inflammatory processes, followed by the development of persistent arthritis [2,9,4,12,7].

**Details of the patient:**

On November 8, 2024, a 37-year-old male patient named R. complained of upper and lower extremity joint pain, lower limb muscle pain, morning stiffness that lasted for up to two hours, nodular skin eruptions on the lower extremities (mostly on the thigh and varying in size), fatigue, fever up to 38.5°C, sweating, and weakness.

**Patient History:**

The patient was under the care of dermatologists since July 2024 for hidradenitis, which initially responded well to treatment. In August, he received a three-day course of antibiotics (Spiramycin 3 million IU once daily) for purulent tonsillitis, but he discontinued the medication prematurely. The patient claims that discomfort and swelling started to occur in August following a skin injury (following shaving) in the left axillary area, which led to a repeated visit to the dermatologist. After applying disinfectant ointments, the condition improved. Painful, tiny, reddish-tinted nodules first emerged on the left leg in September 2024. But it wasn't until October 2024 that the patient sought a rheumatologist's advice and had more tests: ASLO = 1404.83 U/ml, RF = 9.39 UI/ml, and CRP = 10.74 mg/L. Despite taking acyclovir, ibuprofen, and diclofenac as part of the suggested treatment, no improvement was seen. Then things got worse: the erythema got worse, and the temperature rose to 37.5°C. The patient was therefore reassessed by a rheumatologist in October 2024 and given antibiotic medication, which did not result in a favorable outcome. Over time, the condition further deteriorated, with the onset of pain in all joints, an increase in erythema size, prompting another rheumatology consultation. A preliminary diagnosis of Erythema Nodosum was made. Nonsteroidal anti-inflammatory drugs (NSAIDs), methylprednisolone pulse therapy at a dose of 250 mg × 3, and medicine that improves peripheral vascular system microcirculation were all part of the treatment plan, although they had little impact. The joint condition worsened, limiting movement, skin eruptions grew, and new painful erythematous lesions developed despite the continued medication. Additionally, the patient experienced crusting, nasal congestion, and axillary and cervical lymph node enlargement. When D-dimer levels reached 2700 ng/mL, the patient had to be admitted to the therapeutic unit. Further examinations revealed positive PCR for Epstein-Barr virus, positive ELISA for Epstein-Barr virus NA-IgG (2.133), CMV IgG (2.932), and SARS-CoV-2 IgG/IgM (223 AU/mL). A consilium was conducted with the participation of a therapist, hematologist, and infectious disease specialist, resulting in the diagnosis of reactive arthritis, cutaneous anginitis, long COVID-19, chronic Epstein-Barr virus infection, and chronic cytomegalovirus infection. Suspicion of lymphogranulomatosis, lymph node disease, viral infections, and possibly a special form of systemic vasculitis. Recommended: lymph node biopsy, antibiotic therapy (received three times) without positive effect. The patient was then consulted by an oncologist with suspicion of systemic vasculitis, who recommended a follow-up consultation with a rheumatologist. As a result, the patient was hospitalized in the Center for Internal Medicine of KazNMU named after S.D. Asfendiyarov in the somatic department (rheumatology profile) for verifying diagnosis and treatment planning.

**Based on the medical history of the patient:**

There were no chronic illnesses found. Any prior procedures or injuries are denied by the patient. Additionally, he rejects sexually transmitted infections, viral hepatitis, and tuberculosis. No noteworthy family medical history exists. The only noted harmful habit is smoking—up to one pack of cigarettes per day. No past infusions of blood. The patient has a history of chronic herpes infection, with frequent exacerbations manifesting as herpes labialis (cold sores on the lips).

**Epidemiological history:**

The patient and his spouse reside in a private home. He visited Turkey in August. He visited hot springs shortly before becoming unwell, during which he experienced hypothermia, which may have contributed to the deterioration of his health.

**Physical examination:**

The patient’s general condition was assessed as moderately severe, attributed to joint pain, overall pain syndrome, and signs of intoxication. Consciousness is clear, and he responds appropriately to questions. At the time of examination, body temperature was 37.1°C. Height: 189 cm, weight: 86 kg, BMI: 24.08 kg/m² (within normal range). Skin: On the right shin and forearms, there are hyperpigmented reddish rashes with subcutaneous

induration of various sizes, painless, with periodic localized temperature increases over the erythema. On the dorsal surface of the right hand and right foot, there are erythematous rashes with calloused edges, also painless. Lymph nodes: Enlargement of cervical and axillary lymph nodes on both sides, non-confluent, with the left axillary node being more prominent. Muscle tenderness in the lower extremities upon palpation.

**Musculoskeletal System:** Palpation reveals pain in the elbows, shoulders, knees, and ankle joints, though they are externally non-deformed. Grip strength is preserved in both hands. The palmar test and lateral compression test at the MCP, PIP, and wrist joints are negative. The elbow, shoulder, knee, and ankle joints appear normal externally. Crepitus is noted in the knees upon palpation. Range of motion is not restricted.

**Respiratory System***:* It is free to breathe through the nose. The chest moves symmetrically during respiration and has a normal shape without deformities. Vocal fremitus is symmetrically transmitted. Percussion reveals normal lung sounds across all fields, and lung borders are within normal limits. Auscultation detects vesicular breathing without rales. Respiratory rate: 17 breaths per minute.

**Cardiovascular System:** The heart and peripheral vessels appear normal. Borders of relative cardiac dullness: right at the sternal edge 4th intercostal space, left 1 cm outside the midclavicular line, and upper at the 3rd intercostal space. The apical impulse is localized. Heart sounds are muffled but rhythmic. Heart rate: 78 bpm. Blood pressure: 120/70 mmHg.

**Digestive System:** The tongue is coated with a whitish plaque. The abdomen is of normal size, soft, and painless upon palpation. The liver is at the costal margin. The spleen is not palpable. Bowel movements are regular, well-formed, and without pathological impurities.

**Urinary System:** There is no apparent change in the kidney area. Murphy's percussion test is negative bilaterally. Urination is free and painless.

*Table 1.*

**Laboratory data. On admission to the hospital.**

| Test | Laboratory Findings |
|---|---|
| CBC dated 07.11.2024 | Hemoglobin: 98 g/L (decreased), Erythrocytes: 3.35 × $10^6$/L (decreased), Hematocrit: 29.2% (decreased), WBC: 17.59 × $10^9$/L (elevated), Neutrophils: 77.6%, Basophils: 0.1%, Eosinophils: 0.2%, Lymphocytes: 14.3%, Monocytes: 7.8%, Platelets: 548 × $10^9$/L (elevated), ESR: 97 mm/h. **An increased ESR, leukocytosis, mild anemia, thrombocytosis** |
| General urinalysis dated 07.11.2024 | Color – yellow, transparent; Specific gravity – 1.030 (elevated); pH – 6.0; Protein – 0.1 g/L; Glucose – negative; Ketone bodies – negative; Bilirubin – negative; Urobilinogen – negative; Nitrites – negative; Leukocytes – negative; Blood – 0.3 mg/L; Ascorbic acid – 20 mg/dL. Microscopic examination: Squamous epithelium: <1 per field of view Transitional epithelium: 1 per field of view Renal epithelium: 0 per field of view Leukocytes: 2 per field of view Unchanged erythrocytes: 1 per field of view Granular casts: 0 per field of view Hyaline casts: 0 per field of view Mucus: +++ Phosphates: negative Oxalates: negative Urates: negative Bacteria: negative Fungi: negative Uric acid crystals: negative Notes: Parameters are within normal limits. Total urine protein – 0.36 g/day (within normal limits). |
| Biochemical blood analysis dated 06.11.2024. | **ALT - 74 U/L,** AST - 11 U/L, total bilirubin - 5.2 µmol/L, urea - 4.9 mmol/L, glucose - 5.9 mmol/L, creatinine - 70 µmol/L, CPK - 16 U/L (decreased), CPK-MB fraction - 17 U/L, LDH - 203 U/L, **CRP - 239.67 mg/L.** **Notes: Elevated ALT and CRP, decreased CPK**. |
| ASLO, RF, Ferritin dated 06.11.2024 | **ASO: 1348 IU/L (elevated).** RF from 05.11.2024: 10.71 IU/mL. Calcium: 2.04 mmol/L. **Ferritin: 943.73 mg/L (elevated).** |
| Protein fractions dated 24.10.2024. | **Total protein - 50.2 g/L (decreased),** albumin - 41.8%, alpha1-globulin - 11.1%, alpha2-globulin - 18.7% (increased), beta-globulin - 5.6%, beta2-globulin - 6%, gamma-globulins - 16.8%, albumin/globulin ratio - 0.72 (decreased), M-gradient - 0%. Notes: Hypoproteinemia, dysproteinemia. |
| Coagulogram dated 05.11.2024. | APTT - 26.5 sec, **D-dimer - 2419 ng/mL** (increased), TT - 17.0 sec, fibrinogen - 8.44 g/L (increased), TT - 14.5 sec (increased), PI - 62.6%, INR - 1.28 (normal), **D-dimer elevated.** |
| Tumor markers dated 22.10.2024: Immunoblot dated 06.11.2024. | In normal range<br>Negative |
| ELISA for quantitative determination of IgG/IgM antibodies to SARS-CoV-2 from 23.10.2024. | **223 AU/ml - positive.** |
| Bacterial culture from throat swab for microbiota dated 02.10.2024. | Dermacoccus nishinomiyaensis - $10^5$ CFU/mL.<br>Streptococcus parasanguinis - $10^5$ CFU/mL. |

*Table 2.*

**Visual diagnostics data: On admission to the hospital.**

| Methods | Results |
|---|---|
| Chest X-Ray in 2 projections | No focal or infiltrative changes were detected in the chest organs based on the X-ray findings. |
| ECG | Sinus rhythm, ventricular contraction rate of 85 bpm, horizontal position of the electrical axis. Diffuse myocardial changes. |
| Soft tissue MRI | Conclusion: MRI signs of moderate hyperplasia of the right lobe of the thyroid gland. |
| Color Doppler mapping and pulsed-Doppler imaging of the lower limb vessels. | No hemodynamic disturbances in the lower limb vessels were detected. |
| MRI of the nasal cavity and paranasal sinuses. | CT signs of a polyp in the left maxillary sinus, to be differentiated from a cyst with mucinous content. Mucosal hyperplasia of the right maxillary sinus, ethmoid air cells, and sphenoid sinus. |
| Color Doppler mapping and pulsed-Doppler imaging of the brachiocephalic vessels. | No hemodynamic disturbances in the lower limb vessels were detected. |
| CT scan of the abdominal organs with bolus contrast injection using an automatic injector. | No convincing data on pathological formations in the abdominal cavity and retroperitoneal space were detected on CT scanning. Hepatosplenomegaly. |
| CT scan of the pelvic organs with bolus contrast injection using an automatic injector. | At the time of the study, no convincing CT data indicating pathological formations in the pelvis were detected. CT findings suggest a formation in the roof of the left acetabulum, with an aneurysmal bone cyst not excluded. |
| Assessment of renal blood flow based on color Doppler mapping. Assessment of renal blood flow based on color Doppler mapping. | No hemodynamic disturbances in the renal vessels were detected. |

A specialist medical board consilium was conducted, establishing the diagnosis of post-streptococcal arthritis associated with COVID-19 was established. Pathogenetic therapy was prescribed, including glucocorticosteroids (methylprednisolone 20 mg per day), hydroxychloroquine 400 mg per day as a baseline therapy, a five-day course of antibiotics, immunomodulatory therapy (intravenous human immunoglobulin, Octagam, Bioven, three doses), protein preparations (albumin, three doses), and anticoagulant therapy (nadroparin calcium 0.4 mg subcutaneously).

*Table 3.*

**Clinical and laboratory parameters at discharge.**

| Test | Results |
|---|---|
| CBC dated 15.11.2024. | **HGB - 109 г/л**; RBC - 3.46 10*12/l; CI - 0.95 -; HCT - 31.1%; MCV - 89.8 fL; MCH - 31.4 pg; MCHC - 35.2 g/dL; **PLT - 435 10*9/l;** PCT - 0.378%; **WBC - 10.37 10*9/l;** RDW-SD - 50.4 fL; RDW-CV - 15.1%; MPV - 8 fL; PDW - 15.5%; **%NEUT - 68.6%;** NEUT - 7.11 10*9/l; %EOS - 0.2%; EOS - 0.02 10*9/l; %BAS - 0.6%; BASO - 0.06 10*9/l; %MON - 4.9%; MONO - 0.52 10*9/l; %LYM - 25.7%; LYMPH - 2.66 10*9/l, **ESR - 45 mm/hour**;<br>Note: Mild anemia, leukocytosis, neutrophilia, thrombocytosis. A trend toward a decrease in leukocytes, neutrophils, platelets, and ESR. |
| Biochemical blood analysis dated 15.11.2024. | Total protein - 71.9 g/L, ASO - 649 (trend towards decrease, initial level 1348 IU/mL), CRP - 18.2 mg/L increased (trend towards decrease, initial level 239.67 mg/L). |
| Coagulogram dated 14.11.2024. | APTT - 28.1 sec, INR - 1.15, Prothrombin time - 12.5 sec, Prothrombin index - 79%, Thrombin time - 36.2 sec increased, Fibrinogen - 4.8 increased.<br>Note: Increased thrombin time and fibrinogen. |
| D-dimer dated 15.11.2024. | D-dimer 718 ng/mL (normal: 0.00–680.00) increased (trend towards decrease, initial level - **2419 ng/mL**). |
| Ferritin dated 15.11.2024. | 581 mg/l (trend towards decrease, initial level - **943.73 mg/L**). |

**Throughout the ongoing therapy**

Improvements have been observed throughout the course of the treatment, including the lack of intoxication and joint and pain disorders. The stiffness in the morning has gone, and sleep is peaceful. The general state of wellbeing has improved. Overall state: satisfactory. In an active posture. The mercury was 36.4°C. Breathing through the nose is free. There is no enlargement of the peripheral lymph nodes. Hyperpigmented

brownish eruptions on the right shin and forearms have shrunk in size; they are palpably painless and do not cause a localized rise in temperature. The oral mucosa is clean, and the throat is quiet. No rales, vesicular breathing. Heart sounds are rhythmic and somewhat muffled. The BP is 110/80 mmHg. 81 bpm is the pulse rate. Soft and painless is the abdomen. Murphy's percussion test is negative bilaterally. The patient is discharged for further follow-up and treatment in outpatient settings at the place of residence. Recommendations are given.

**Upon discharge, the following treatment is recommended:** continuation of glucocorticosteroid therapy with methylprednisolone at 20 mg per day, maintenance therapy with hydroxychloroquine at 400 mg per day, bicillin-5 (benzylpenicillin) at 1.5 million IU once every two weeks until ASLO levels normalize, and clopidogrel at 75 mg per day until D-dimer levels normalize.

**Discussion**

Given the circumstances of the pandemic, this clinical case of post-streptococcal arthritis linked to COVID-19 poses a unique but noteworthy diagnostic difficulty. Due to several overlapping features, including symptoms of both post-COVID disorders and relapses of chronic infections, such as cytomegalovirus, Epstein-Barr virus, staphylococcal and streptococcal infections, the case demonstrates the difficulty of diagnosis [2,3,4,11,5].

Along with growing joint pain, signs of intoxication and inflammation, and symptoms indicative of chronic viral infections, the patient's overall health gradually declined. Since these symptoms are non-specific and can be linked to a number of illnesses, such as autoimmune diseases, viral infections, and inflammatory processes, they can make diagnosis more difficult. In this instance, prompt anamnesis collection and clinical evaluation were crucial in establishing a connection between the onset of post-streptococcal arthritis and the previous COVID-19 infection [8,9,3,10,4,12,6,7].

Comprehensive diagnostics, which include clinical and laboratory data, should receive special emphasis. In addition to confirming the existence of an active inflammatory process, the correlation of laboratory results such as CRP, ASLO, ferritin, D-dimer, and other indicators of inflammation and hypercoagulation also assisted in ruling out other potential diagnoses, such as sepsis or thrombosis. This emphasizes how crucial laboratory testing is for early detection and differential diagnosis, especially when it comes to COVID-19-related problems [1,10,6].

The diagnostic difficulty also stems from the fact that SARS-CoV-2 infection can result in post-COVID syndrome, which is characterized by a variety of long-term symptoms that continue after the acute phase of the illness. Similar to other autoimmune disorders linked to joint inflammation, arthritis in this instance most likely developed as a result of immunological dysregulation brought on by the prior COVID-19 infection, indicating a potential interplay between viral and infectious processes [2,9,3,4,11,12,7].

**Conclusion**

The correlation between COVID-19 and PSA emphasizes the necessity of closely monitoring patients who have recovered from the virus, particularly if joint symptom is present. The idea of an excessive immune response and the possible emergence of autoimmune illnesses in response to viral infections are also supported by this instance, highlighting the need for additional study to elucidate pathogenic pathways and create the best possible diagnostic and therapeutic approaches.

The significance of a thorough approach in the diagnosis and treatment of patients with post-COVID sequelae, especially uncommon inflammatory joint disorders, is thus underscored by this clinical example. It also emphasizes how important it is to raise doctors' knowledge of possible COVID-19 problems [4,7,13].

***Study Limitations:*** *The single-center nature of the study may limit its generalizability, and the absence of long-term follow-up data restricts the assessment of post-discharge outcomes.*

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