

Acute Ischemic Stroke In A 23 year Old Female With Pre-Existing Rheumatoid Arthritis: A Case Report

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I. Introduction

Stroke is a leading cause of disability worldwide, often presents with sudden onset of neurological deficits. The World Health Organization (WHO) emphasizes that the lifetime risk of experiencing a stroke has increased significantly, with 1 in 4 individuals expected to suffer from a stroke in their lifetime(1),the burden of stroke is particularly pronounced in lower and middle-income countries, where approximately 86% of stroke-related deaths occur(2).Acute ischemic stroke which account for about 80% of all strokes, results from the obstruction of blood flow to the brain, leading to potential permanent damage if not treated promptly(3).

This case report describes a 23-year-old female who presented with sudden onset of right-sided weakness, which was later diagnosed as an acute ischemic stroke. While strokes are more common in older populations, they can occur in younger individuals due to various risk factors as for this patient.

II. Case Presentation

A 23-year-old female, was admitted with one-day history of inability to use her right upper and lower limbs; the symptoms began when she woke up in the mid of the night and found herself unable to move her right arm while attempting to pull the bed sheet; shortly after, she noticed weakness in her right lower limb when trying to get out of bed. The weakness in the right arm was progressive with no improvement, while there was some improvement in the weakness of the right lower limb.

Prior to the onset of these symptoms, she reported a history of gradual onset of headache which was generalized, persistent, throbbing without any known relieving factors.

There was no history of fever, loss of consciousness, blurred vision, speech difficulties, numbness, or trauma. She has no history of hypertension, diabetes Mellitus or dyslipidemia.

Additionally, the patient had been presenting with 6 months history of joint pain on the proximal intralaryngeal joints which is dull aggravated by activities like writing or gripping and associated with stiffness more marked in the morning accompanied, by swelling and deformity of the affected fingers.No history of trauma on the affected fingers



On examination, the musculoskeletal system revealed visible swelling on the proximal interphalangeal (PIP) joints, deformity consistent with Boutonnière deformity, mild tenderness on flexion and extension of the PIP joints, and limited movement of the joint without crepitus. Nervous system suggested features of upper motor neuron lesions (UMNL)

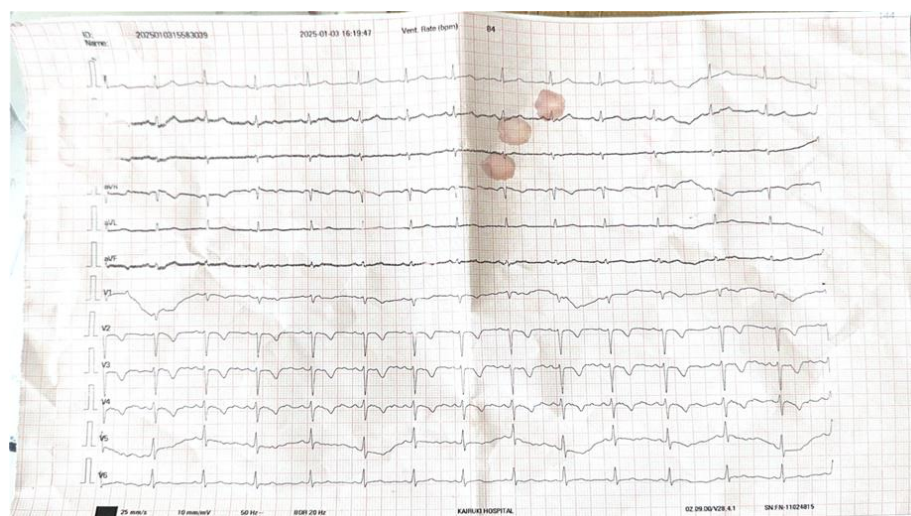
Laboratory and imaging findings

Laboratory tests showed a highly elevated Erythrocyte sedimentation rate (ESR) and a positive Rheumatoid factor. Full blood picture, serum creatinine, blood urea nitrogen and lipid profile were unremarkable. Additionally, she was found to have sickle cell trait (SCT) AS through Hb-electrophoresis.

Brain MRI findings were suggestive of an acute ischemic stroke in the left internal capsule (posterior limb) within the lenticulostriate territory

Echocardiogram (ECHO) was normal while Electrocardiography showed a low voltage

However, she met the criteria for diagnosing Rheumatoid arthritis according to American college of Rheumatology(4)



III. Discussion

This case highlights the presentation of acute ischemic stroke in a young adult with pre-existing musculoskeletal symptoms and signs. The sudden onset of weakness in one side of the body is a classic presentation of stroke, which can result from various events (5),(6).The location of the stroke in the left internal capsule is consistent with the patient's symptoms, and signs as this area is involved in motor control. The patient's findings such as Boutonnière deformity and positive rheumatoid factor suggest an underlying rheumatological condition which may be unrelated to the stroke but is noteworthy in the patient's overall clinical picture. Boutonnière deformity is typically associated with rheumatoid arthritis. However having SCT it has been noted that there is an increased risk for venous thrombosis with an approximately twofold increase in risk and sickle cell trait explaining 7% of thrombotic episodes in African Americans(7).In some but not all, recent prospective studies have found an association between SCT and IS. These studies focused on older populations and there is limited data on the association between SCT and early-onset of stroke (8)

IV. Conclusion

This case study underscores the necessity for heightened awareness and prompt evaluation of stroke features in young adults particularly those with pre-existing health conditions. Given the rising incidence of stroke among younger populations, clinicians should consider broad differential diagnoses that include both traditional risk factors and less common associations such as SCT. Future research should aim to clarify these associations and improve understanding of stroke mechanisms in younger patients to enhance prevention and treatment strategies.

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