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Achenbach Syndrome: A Case Report Highlighting Benign Course and Avoidance of Unnecessary Testing

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Abstract: ***Achenbach syndrome is a rare vascular condition marked by sudden finger discoloration and localized pain, often alarming patients and leading to unnecessary diagnostic procedures. This case report presents a 58-year-old woman with characteristic symptoms in her right fourth finger. Without any history of trauma or systemic illness, her symptoms resolved within four days following conservative management using ice and compression. The case highlights the importance of clinical recognition of Achenbach syndrome to avoid extensive testing and reassure patients about its benign nature.***

Keywords: Achenbach syndrome, finger dislocation, benign vascular condition, conservative management, case report

1. Introduction

Achenbach syndrome, also known as paroxysmal finger hematoma and blue-finger syndrome, was first described by Walter Achenbach in 1958. [1] It is a rare condition characterized by sudden and spontaneous discoloration of one or more fingers. The condition typically presents without any known association with temperature changes, trauma, medical history, or body habitus. The exact etiology remains unclear. Although the pathophysiology has not been definitively established, local vascular fragility, potentially related to age or minor repetitive trauma, has been proposed as a contributing factor. [2] A study involving 802 subjects demonstrated a higher prevalence in women, with cases occurring before the age of 40 being uncommon. The study also identified associations between Achenbach syndrome, Raynaud's phenomenon, and chilblains. Importantly, there is no evidence of increased morbidity or mortality associated with paroxysmal finger hematoma. [3]

2. Methodology

This case report describes the clinical course of a 58-year-old female who presented with spontaneous discoloration and pain in a finger. Data collection included patient history, physical examination, and symptom progression. No laboratory testing or imaging studies were performed, in keeping with the benign and self-limiting nature of the condition. Management was conservative and focused on supportive measures, with documentation of outcomes over a short follow-up period.

3. Results & Discussion

Case Presentation

A 58-year-old female with a medical history of gastroesophageal reflux disease (GERD), asthma, and endometriosis presented to her physician with concerns regarding the sudden onset of blue-black discoloration in the fourth finger of her right hand, which had begun three days earlier. The discoloration began on December 25, 2024, and was not associated with exposure to cold or heat. She did not recall any trauma to the affected finger and was not under any physical or emotional distress at the time of onset.

The patient reported a burning pain, rated 3/10 in intensity, that lasted approximately 30 minutes during the evening. The following day, she noticed blue-black discoloration involving the entire digit, accompanied by intermittent recurrence of the initial pain. (Figure 1 and 2) She also experienced tenderness to palpation, rated 1/10, which persisted until the discoloration resolved. Additional symptoms included episodic tingling and discomfort in the affected finger, which gradually improved over the course of three days. By the end of this period, the discoloration had fully resolved and was no longer visible on physical examination.

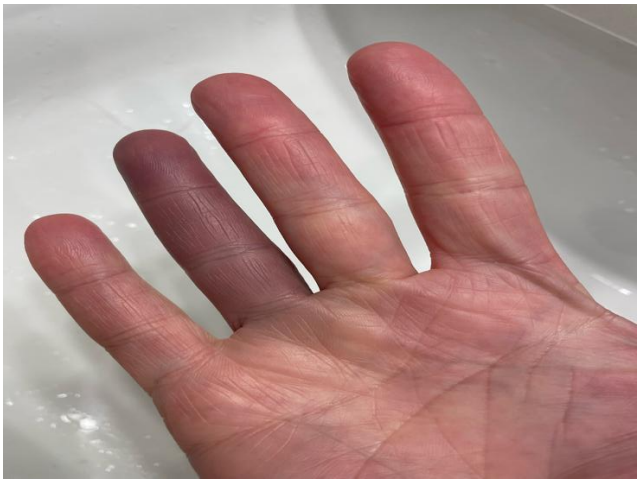

Figure 1: Palmar view of the right fourth finger at presentation, showing subcutaneous hematoma and characteristic discoloration of Achenbach syndrome

Figure 2: Volar view of the right fourth finger at presentation, showing subcutaneous hematoma and characteristic discoloration of Achenbach syndrome.

Her surgical history includes cholecystectomy, two umbilical hernia repairs, abdominoplasty, hysterectomy, and, most recently, right-sided rotator cuff and biceps tendon repair in May 2024. The patient is a non-smoker, consumes alcohol socially, and is employed in the medical field. She reported no relevant family history, including vascular disorders or similar episodes in relatives.

On physical examination, peripheral pulses were palpable, and capillary refill was intact in all extremities, including the affected finger. She reported no pain at rest or on palpation during the examination. No laboratory tests or imaging were performed during evaluation.

Differential Diagnosis

A thorough differential diagnosis for this patient's presentation includes several peripheral vascular pathologies. Potential diagnoses encompass Raynaud's phenomenon, acute ischemia, chilblains, acrocyanosis, Gardner-Diamond syndrome, and Achenbach syndrome, each capable of causing painful discoloration of the fingers, though with distinct clinical features.

Raynaud's phenomenon typically occurs in response to cold exposure or emotional stress. It is classically characterized by triphasic color changes (white, blue, and red) and numbness in the fingers or toes. Raynaud's is generally a chronic condition and recurs with exposure to cold environments.

Chilblains and acrocyanosis are also associated with cold exposure. Chilblains often present as erythematous to purplish maculopapular lesions, accompanied by itching or burning sensations, and significant edema. [4] Acrocyanosis, on the other hand, presents with persistent violaceous discoloration and coolness of the hands and feet, frequently associated with palmar or plantar hyperhidrosis. [5]

Gardner-Diamond syndrome, also known as psychogenic purpura, is a rare condition characterized by the development of painful, edematous skin lesions that evolve into bruising. These often occur after periods of physical and emotional stress and are often preceded by a prodromal phase involving malaise and fatigue. Lesions are usually multiple and may recur. [6]

Among the differential diagnoses, acute ischemia represents the most urgent condition, as it involves sudden arterial occlusion. It commonly presents with pallor, pulselessness, pain, paresthesia, and prolonged capillary refill. In this case, the patient demonstrated brisk capillary refill in all extremities, including the affected digit, making acute ischemia unlikely.

Given the presentation of isolated blue-black discoloration on the palmar and volar surfaces of a single digit, in the absence of trauma, systemic symptoms, or cold exposure, the findings are most consistent with Achenbach syndrome.

Management and Outcome

Achenbach syndrome is a benign, self-limiting condition. Patients should be counseled that the affected finger or fingers will return to normal color and that any associated pain, numbness, or tingling will resolve without medical intervention. Management is supportive and includes elevation, compression, and the application of ice. Analgesic therapy may be used if necessary, including non-steroidal anti-inflammatory drugs (NSAIDs) or acetaminophen.

In this case, the patient experienced complete resolution of symptoms within three days of onset. This included relief from pain both at rest and with palpation, as well as full resolution of the finger discoloration. The patient managed symptoms at home with compression, ice, and elevation. She contacted her physician after the incident to confirm the suspected diagnosis of a benign condition and received appropriate reassurance. No unnecessary diagnostic testing was performed.

4. Discussion

Achenbach syndrome is an exceedingly rare condition that may be difficult to distinguish from other acrosyndromes and vaso-occlusive disorders, such as Raynaud's phenomenon, chilblains, and acrocyanosis. The etiology and pathophysiology of Achenbach syndrome remain poorly understood.

It is important for medical practitioners to recognize that this condition is benign and self-resolving, and to be able to differentiate it from more serious vascular pathologies, such as acute ischemia. Accurate identification can prevent unnecessary diagnostic procedures and referrals while addressing patient concerns effectively. Because the presentation can be alarming to both patients and clinicians unfamiliar with the condition, it is imperative to provide clear communication and reassurance.

A proper understanding of Achenbach syndrome can reduce anxiety and avoid overtreatment for a condition that typically resolves without intervention.

5. Conclusion

This case highlights the importance of recognizing Achenbach syndrome as a benign, self-limiting vascular condition. Prompt identification can prevent unnecessary testing and alleviate patient anxiety while avoiding the costs associated with extensive diagnostic evaluations. Clinicians

should be aware of its characteristic presentation and provide reassurance, supportive care, and education to patients experiencing this alarming but harmless syndrome.

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