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Resurgence of acute rheumatic fever: Diligent history taking

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Abstract

Acute rheumatic fever (ARF) is still one of the most common cause of acquired heart disease in school age group children. Though there has been a decline in the past few decades, resurgence of ARF cases have been noted in developing countries. We are hereby reporting a 7 year old male child who presented to us with ARF without any cardiac complications and absence of any serological evidence of recent streptococcal infection. The child however had a history of throat infection prior to joint involvement with this case we want to emphasize the importance of history taking and the fact that even if there is no serological evidence of streptococcal infection, the case has to be treated as ARF with the fulfilment of major and minor criteria to prevent mortality due to cardiac complications.

Keywords: Rheumatic fever, Jones criteria, Pediatrics, Beta-streptococcal infection

Introduction

Acute Rheumatic Fever (ARF), the commonest cause of heart disease in school - age children, is an acute inflammatory disease affecting the joints, heart, skin, subcutaneous tissue and nervous system after a bout of group A beta-haemolytic streptococcal (GAS) infection^[1, 2]. Acute Rheumatic Fever is generally believed to be more severe in India and neighbouring countries than it is in the West^[3, 4]. Cardiac complications are significant in absence of secondary prophylaxis and culminate into chronic and life threatening valvular heart disease^[5]. ARF is widely prevalent in under privileged and over populated developing countries in 5-14 years of age group. However, there has been a decline of ARF cases in the past decade, hence we are reporting a case of a 7-year-old male child with migratory arthritis.

Case Report

A 7-year-old male child born of 3rd degree-consanguineous marriage, hailing from Navi Mumbai, India presented to a tertiary care hospital with complaints of multiple joint pain and swelling, exertional breathlessness and high-grade fever since 10 days. Joint pain was acute, migratory, involving the hip, knee, elbow and ankle. Pain was associated with swelling, redness and severe tenderness restricting child's daily activities. Fever was high grade, intermittent with chills. There was no history of trauma, early morning stiffness and small joint involvement. Child did not present with skin rash or chore form movements. There was no history of palpitations/syncope/easy fatigability/orthopnoea or paroxysmal nocturnal dyspnoea. Child had history of throat infection a month back with no similar history of joint pains in the past.

Child was conscious and cooperative, averagely built and nourished. On examination temperature was 98.2 F with heart rate of 96/min low volume, irregular with respiratory rate of 20 cycles per minute, blood pressure of 90/50mm Hg. All the peripheral pulses were well felt with no signs of congestive cardiac failure. Child presented in the 25-50th percentile with no signs of palpable subcutaneous nodules or erythema marginatum.

Examination of the joints revealed redness, warmth, swelling and tenderness with restriction of both active and passive range of movements of the right ankle joint with severe excruciating pain at the end of the joint motion (Fig 1).



Fig 1: Clinical picture showing swollen Rt Ankle

No murmurs or pericardial rub was heard and spleen was not palpable. A diagnosis of Acute Rheumatic Fever was made with no Carditis, Congestive Cardiac Failure and Infective Endocarditis.

Investigations revealed haemoglobin 13gm/dl, total leucocyte count 13,000/cm neutrophils 53%, lymphocytes 38%, eosinophils 1.2% and platelets 3,91,000. ESR -70mm at the end of 1 hour and reduced to 49mm at discharge. ASO, throat swab and electrocardiogram were normal. 25(OH)-Vitamin D level 6.9 ng/ml (deficient) and Chest X-ray was normal.

Diagnosis of Rheumatic fever was made on the basis of Revised Jones criteria (presence of polyarthrits, fever, raised ESR/ CRP, arthralgia) with preceding history of throat infection.

However, serological evidence of antecedent streptococcal infection (documented by elevated/rising ASO titres or throat swab culture for GAS) were negative. Child was administered aspirin along with benzathine penicillin prophylaxis. Child responded to aspirin within 48hrs. Child is doing well on follow up.

Discussion

Resurgence of ARF has prompted the medical community to delve into the details of history taking and clinical examination. ARF is majorly diagnosed on clinical grounds with the revised Jones criteria (2015) [6]. It is pertinent to make an early diagnosis so as to detect signs of carditis, failure, valvar affection, chorea and infective endocarditis. Serological diagnosis of ARF is limited to the detection of an increase in anti-streptolysin O (ASO), marker of recent group A streptococcal infection, although the absence of these antibodies does not necessarily exclude this disease [1]. A simple ESR test with weekly monitoring would aid in diagnosing and monitoring this condition.

Throat culture for GAS are positive in only about 25% of the patients and ASO titres remain negative in 20% of the cases [7]. A negative ASO titre does not exclude the diagnosis of ARF [8]. However, the evidence of previous streptococcal infection has been given special consideration in the diagnosis of ARF.

Hence in our case we have 1 major (migratory polyarthrits) and 3 minor (arthralgia, fever, and elevated ESR/CRP) criteria which is essential for the diagnosis of Acute Rheumatic Fever.

The age-old criteria of 2 major, 1 major 2 minor or 3 minor would suffice in the developing countries with resource poor setting for diagnosing ARF at an early date and prevent

cardiac morbidities. Simple weekly ESR monitoring would aid therapy. Penicillin prophylaxis (3 weekly) should be ascertained and regular follow up would be mandatory [9, 10]. Hence the importance of pertinent history taking and clinical examination are bench marks for diagnosing ARF and instituting appropriate, time bound therapy to avoid complications.

Conclusion

Acute Rheumatic Fever can be diagnosed by simple history taking and clinical examination. Cost effective ESR test would be adequate for diagnosing and monitoring the condition. High index of suspicion would ascertain early diagnosis and appropriate prompt therapy thereby preventing cardiac morbidity. Fulfilment of major and minor criteria and therapeutic response would suffice to establish the diagnosis of ARF.

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