CASE STUDY

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A case report study - Seronegative Rheumatoid Arthritis in an elderly patient with anemia

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ABSTRACT: Anemia is a reduction in the proportion of the red blood cells. Anemia is not a diagnosis, but a presentation of an underlying condition. Seronegative Rheumatoid arthritis had been recognized as a phenotype of RA without the presence of Rheumatoid factor. However, seropositive and seronegative RA seems to 'behave' differently during the course of illness and in various ways. Initially, anemia was linked to chronic infections and autoimmune diseases, but in recent years, it has been found to be associated with other diseases, such as cancer and congestive heart failure. Rheumatoid arthritis (RA) is one of the most common autoimmune inflammatory diseases, primarily affecting synovial tissue in the small joints of the hands and feet; however, extra-articular manifestations can also be present. Inflammation can be improved by treating the underlying disease. Take complete bed rest. Low impact physical activities like walking, mild exercise pave way to ease arthritis pain and are safe for most adults.

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INTRODUCTION:

Anemia is a reduction in the proportion of the red blood cells. Anemia is not a diagnosis, but a presentation of an underlying condition. Whether a patient becomes symptomatic or not, depends on the etiology of anemia, the time of onset, and the presence of other comorbidities, especially the presence of cardiovascular disease. Most patients experience some symptoms related to anemia when the hemoglobin drops below 7.0 g/dL.

Erythropoietin (EPO) is a glycoprotein hormone, naturally produced by the peritubular cells of the kidney that stimulates red blood cell (RBC) production. Renal cortex peritubular cells produce most EPO in the human body. PO_2 directly regulates EPO production. The lower

the PO_2, the greater the production of EPO. Erythropoietin stimulating agents (ESA) are recombinant versions of EPO produced pharmacologically. Examples of ESAs are epoetin, darbepoetin and methoxy polyethylene glycol-epoetin beta. ESAs are generally indicated in conditions where there is impaired red blood cell production.

Normal Hemoglobin (Hgb)-specific laboratory cut-offs will differ slightly, but in general, the normal ranges are 13.5 to 18.0 g/dL in men, 12.0 to 15.0 g/dL in women, and 11.0 to 16.0 g/dL in children. The blood sugar level varied in pregnancy depending on the trimester, but generally greater than 10.0 g/dL.

Seronegative RA had been recognized as a phenotype of RA without the presence of Rheumatoid factor. However, seropositive and seronegative RA seems to 'behave' differently during the course of illness and in various ways [1]. Published studies support different disease mechanisms in seropositive vs seronegative RA, with different genetic and environmental risk factors. Management of underlying disease is essential for treating anemia associated with chronic inflammation [2]. Initially, anemia was linked to chronic infections and autoimmune diseases, but in recent years, it has been found to be associated with other diseases, such as cancer and congestive heart failure. The objective of the study is to analyze the case using relevant theoretical concepts and to describe the individual's clinical situation in detail.

CASE PRESENTATION:

In Female General Medicine department – 65 years old female was admitted in the hospital with complaints of multiple joint pain / body pain for past 3 months. History of leg pain, shoulder pain, morning stiffness, pain gets aggravated after wake up, pain was relieved by taking medications. After admission, patient was undergone general physical examination: General appearance of the patient shows was alert, awake, afebrile, conscious, oriented.

TREATMENT:

Initially the child was treated with Inj. Vitamin B12 dose – 1 g, route – IM , frequency OD, Inj. Diclofenac dose – 1cc , route – IM , frequency – BD, given for 5 days. T. Paracetamol 500 mg oral BD, T. Ibuprofen 200 mg oral BD, C. Omeprazole 20 mg oral BD, T. Calcium carbonate 300 mg oral BD, T. B- Complex 30.5 mg oral OD, given for 7 days.

Outcome and follow-up:

Patient condition was stabilized with supportive management with precaution. Patient was advised to review after 1 month in Outpatient department.

DISCUSSION:

Rheumatoid arthritis (RA) is one of the most common autoimmune inflammatory diseases, primarily affecting synovial tissue in the small joints of the hands and feet; however, extra-articular manifestations can also be present [3].

Rheumatoid arthritis (RA) is a chronic disease that affects ~1% of the population. RA is classified according to seropositivity for rheumatoid factor (RF) and anti-citrullinated protein antibodies (ACPA). Although seronegative RA (SNRA) appears to be less severe in its presentation and clinical course than seropositive RA (SPRA), there are still controversies because there are studies in which these differences do not exist. Furthermore, 20 to 30 % of RA patients do not have ACPA and RF, and erosive RA can occur without these antibodies [4].

RA-related autoantibodies such as rheumatoid factors (RF), anti-citrullinated (ACPA), and anti-carbamylated Protein (anti-CarP) antibodies can be found in sera many years before RA development [5]. However, the transition from systemic autoimmunity to joint inflammation is so far poorly understood. All of these stages do not have to occur in all patients who eventually develop RA and do not necessarily occur in the same order.

Patients with clinical features of rheumatoid arthritis (RA) but negative rheumatoid factor (RF) present a diagnostic challenge. The seronegative spondyloarthropathy (SNSA) syndromes, previously believed to be "rheumatoid arthritis variants," e.g., Reiter's syndrome and psoriatic arthritis, are now considered to be genetically separate from RA and have been shown to be closely associated with HLA-B27. This syndromic discrimination has raised question as to the validity of RF negative RA (i.e., seronegative RA).

Demographic, clinical features of seronegative RA and SNSA are compared. Also, more common diagnoses that are similar to seronegative RA are outlined according to onset age of arthritis. Recent concepts of RF positivity and HLA-DR4 correlations are reviewed. Multiple unknown factors contribute to the currently recognized syndrome of RA. Its diagnosis continues to rest on an aggregate of host, clinical, immunologic, and radiologic features.

Table 1. The vital sign of the blood test report of the child patient.

Parameters	Observed value	Normal value
Hemoglobin	9.4 ↓	13-17 g/dL
Total RBC count	5.0 ↑	3.8 – 4.8 millions /mm^3
WBC count	12000 ↑	4000 – 10000 cells / mm^3
PCV	34.1 % ↓	40 – 50 %
Platelet count	3.4	2.0 – 4.0 lakhs /mm^3
RBS	114	70-140 mg/dL
Urea	24	15 – 40 mg/dL
Creatinine	0.7	0.5 – 1.2 mg /dL
Sodium	140	135 – 150 mg/dL
Potassium	3.8	3.5 – 5.0 mmol/L
Chloride	110 ↑	95 – 105 mmol/L
RA Factor	Negative	--

PROPOSED TREATMENT:

Medications including non-steroidal anti-inflammatories (NSAIDs), disease-modifying anti-rheumatic drugs (DMARDs), and steroid shots. Physical therapy to help with moving around, range of motion, and pain. Low impact exercise to build strength and lower stress. Surgery if you need joint replacement or reconstruction.

CONCLUSION:

We report a case of Seronegative Rheumatoid Arthritis in an elderly patient diagnosed with anemia. The treatment of RA with Inj. Vitamin B12, Inj. Diclofenac, T. Ibuprofen, T. B-Complex, T. Calcium improved anemia and reduced inflammation. Take complete bed rest. Low impact physical activities like walking, mild exercise ways to ease arthritis pain and are safe for most adults. These forms of exercise can also improve joint function. However, if the nutritional status is poor before the start of treatment, anemia may temporarily worsen. Older adults and patients with dementia may not complain of symptoms, and anemia may be aggravated without being noticed. More attention should be paid to physical examination.

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