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Hereditary Spherocytosis or Immune Haemolytic Anaemia? A Diagnostic Dilemma

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ABSTRACT

Hereditary spherocytosis and immune haemolyticanaemia are two different entities, with different modalities of management. However, in the early stages, both these condition may present in a similar fashion, both in terms of clinical picture and laboratory results. Since treatment for each of the two conditions varies widely, it is essential to be absolutely certain of the diagnosis. This case report highlights one such case, wherein the diagnosis posed a great hurdle in managing the patient effectively.

Keywords: Coombs test, Jaundice, Haematology, ANA, Splenectomy

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INTRODUCTION

Hereditary spherocytosis (HS) is a familial condition that presents as haemolyticanaemia, jaundice and splenomegaly [1]. HS is a membrane defect of the red cells, most commonly due to a deficiency of spectrin. Spectrin is a protein that is responsible for the normal shape and structure of red cells. This deficiency leads to abnormally shaped red cells, which showcase decreased flexibility and a shorter life span (as opposed to the normal life cycle of about 120 days). The patient presents with haemolyticanaemia and its associated features like cholelithiasis and hyperbilirubinemia. Splenectomy is considered to be almost mandatory in almost every patient. This procedure is performed so as to reduce the destruction of red cells, thereby reducing the symptoms in the patient [2]. However, milder forms have been treated with folate supplements, without splenectomy [3].

Immune haemolyticanaemia (IHA), as the name suggests, arises to destruction of RBCs by antibodies directed against them. IHA is mostly due to autoantibodies against the RBCs, called as autoimmune haemolyticanaemia (AIHA). It may also be drug-induced or infection-induced in a few scenarios. However, in most clinical situations, IHA is idiopathic. The clinical presentation is similar to that seen with any other haemolyticanaemia. Treatment includes immunosuppressant drugs, immunoglobulins and splenectomy [4, 5].

The following case report shows the difficulty in distinguishing between the above-mentioned conditions, as the presentation clinically is similar in both.

Case Report

A 35-year-old lady was referred to our hospital as a case of hereditary spherocytosis (HS) and haemolytic crisis, secondary to sepsis. The patient had no past history of anaemia, jaundice or blood transfusion. There was no family history of congenital haemolyticanaemias as well. Clinical examination revealed moderate pallor, mild jaundice and moderately palpable spleen (about 6cm below the costal margin). The patient was febrile, but the other vital signs were within normal limits.

The patient had been evaluated thoroughly, and her laboratory investigations were suggestive ofhaemolytic anemia (Haemoglobin of 8 g/dL), with increased reticulocyte count (of 18.2), high LDH level (550 U/L), indirect hyperbilirubinemia (4 mg/dL). Peripheral blood smear revealed numerous spherocytes. Osmotic fragility was increased and since Coombs test was negative, she was diagnosed to have HS, probably unmasked now due to sepsis, leading lo haemolytic crisis. Repeat lab investigations at our hospital also showed similar results withanaemia (Haemoglobin of 6.9 g/dL), increased total leucocyte count (15,800 cells/cu.mm.) and high reticulocyte count (of 18.6), increased LDH level (600 U/L), indirect hyperbilirubinemia (4.2 mg/dL), increased osmotic fragility and a negative Coombs test.

However, her diagnosis was relooked upon, as the following features are not commonly associated with HS.

a) Her age
b) Unremarkable past history
c) Uneventful pregnancies (Two in number)
d) Elevated erythrocyte sedimentation rate (ESR) of 120 mm/hr
e) Increased red cell distribution width (RDW) of 18.6
f) Marked anisocytosis in the peripheral blood smear

So, after consultation with a haematologist, a repeat Coombs test was ordered, which revealed Direct Coombs test positivity. ANA ordered to rule out secondary immune haemolyticanaemia also turned out to be positive, pushing the diagnosis towards immune haemolyticanaemia (IHA). The patient was then started on steroids, and her condition improved.

DISCUSSION

When a patient presents to the clinic with a triad of anaemia, indirect hyperbilirubinemia and reticulocytosis, he/she has to be evaluated for haemolysis. Two important causes for the same include

hereditary spherocytosis and immune haemolyticanaemia. Although the clinical picture is the same in both of them, and since both conditions present with spherocytes in the circulation, the major clinching point is the positivity to direct Coombs test in IHA (which is negative in HS) [6]. But, as evidenced in the current case, Coombs test was negative, although the final diagnosis turned out to be in favour of IHA. However, there have been a few reports of seronegative non-spherocytic AIHA as well [7].

Another important differentiating feature may be proper elicitation of family history, as HS is genetic in nature [6]. But, this may not be always possible in poorly developed nations, owing to the extent of the ignorance on the patient's perspective.

There is an almost unanimous consensus on the management protocols for the two conditions, HS and IHA, as mentioned earlier in the article. Splenectomy is indicated in almost 100% of cases of HS, whereas not in all cases of IHA. Splenectomy, by itself, poses issues like susceptibility to infections, making it essential to confirm the diagnosis of HS before going ahead with the surgery. Histopathology of splenic tissue might be of help in diagnosis, though it is not commonly performed [8].

Hence, diagnosis and differentiation between HS and IHA is important, especially in the early stages of the condition, as it may save the patient from unnecessary surgeries and risk of life-threatening infections.

CONCLUSION

HS may mimic IHA in terms of the clinical presentation, especially in the early stages of the condition. Direct Coombs test may be negative in the initial stages, which may further dampen or slow down the diagnosis of IHA. This case report highlights the significance of repeating tests whenever in doubt. Simple tests like ESR and RDW may help in differentiating the two conditions mentioned above. Also, the patient who was initially considered as a candidate for splenectomy, turned out to be responsive to steroids due to the change in the diagnosis.

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