

Slide 1 – August 2007 / Cycle 31

Microangiopathic haemolytic anemia

Please read this bit first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

FORWARD

This clinical page may not exactly match the slide due to the need to vary the clinical descriptions for CEU purposes.

Scanned and edited from Essential Haematology by Hoffman, Pettit and Moss. Blackwell. (2001).

Red cell fragmentation syndromes.

These arise through physical damage to red cells either on abnormal surfaces (e.g. artificial heart valves or arterial grafts) or as a microangiopathic haemolytic anaemia caused by red cells passing through fibrin strands deposited in small vessels. The latter may be caused by disseminated intravascular coagulation (DIC), malignant hypertension, the haemolytic uraemic syndrome, thrombotic thrombocytopenic purpura, pre-eclampsia or meningococcal sepsis. The peripheral blood contains many deeply staining red cell fragments (Fig. 5.11). Clotting abnormalities typical of DIC with a low platelet count are also present when DIC underlies the haemolysis.

March haemoglobinuria.

This is caused by damage to red cells between the small bones of the feet, usually during prolonged marching or running. The blood film does not show fragments.

Infections.

Infections may cause haemolysis in a variety of ways. They may precipitate an acute haemolytic crisis in G6PD deficiency or cause microangiopathic haemolytic anaemia, e.g. with meningococcal or pneumococcal septicaemia. Malaria causes haemolysis by extravascular destruction of parasitized red cells as well as by direct intravascular lysis. Backwater fever is an acute intravascular haemolysis accompanied by acute renal failure caused by *Falciparum* malaria. *Clostridium perfringens* septicaemia may cause intravascular haemolysis with marked microspherocytosis.

Chemical and physical agents.

Certain drugs, e.g. dapsone and salazopyrin, in high doses cause oxidative intravascular haemolysis with Heinz body formation in normal subjects. In Wilson's disease an acute haemolytic anaemia may occur as a result of high levels of copper in the blood. Chemical poisoning, e.g. with lead, chlorate or arsine, may cause severe haemolysis. Severe burns damage red cells causing acanthocytosis or spherocytosis.

Secondary haemolytic anaemias.

In many systemic disorders red cell survival is shortened. This may contribute to anaemia.

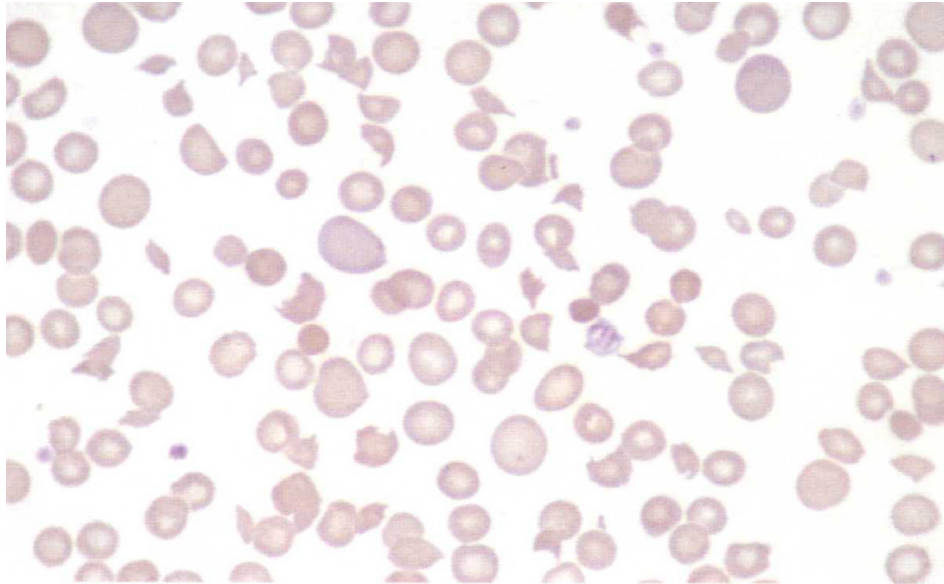


Fig. 5.11 Blood film in microangiopathic haemolytic anaemia (in this patient Gram-negative septicaemia). Numerous contracted and deeply staining cells and cell fragments are present.

QUESTIONS.

1. If Microangiopathic haemolytic anaemia is caused by DIC, what further abnormalities would you expect to find ?
2. List the various ways by which infections can cause haemolytic anaemia ?