Case 18.1 A mother infected with Listeria

A 22-year-old primagravida stayed on a small-holding in France for the last 3 months of the pregnancy. She had been well, apart from morning sickness during the first 4 weeks of gestation. In France, she had been drinking fresh unpasteurized milk and eating home-made cheeses for 3 weeks when she developed fever, vomiting and diarrhoea followed by headache, myalgia and low back pain which persisted for 5 days. Four weeks later, at 28 weeks' gestation, she went into premature labour and a still-born, jaundiced child was delivered after 36 h. At the baby's post mortem, there was evidence of hepatitis, purulent pneumonia, conjunctivitis and meningitis. Listeria monocytogenes was cultured from several sites and a diagnosis of fatal neonatal Listeria monocytogenes infection was made. The organism was sensitive to ampicillin and gentamycin and since there was no longer a teratogenic risk (the pregnancy being over), the mother was given a 4-week course of both antibiotics in case organisms were silently sequestered in her deep tissues. Pregnant women are now all advised to avoid unpasteurized products throughout pregnancy.

Case 18.2 Hypogammaglobulinaemia of prematurity

A normal infant girl was delivered by caesarean section at 30 weeks of gestation as her 35-year-old primagravida mother had severe pre-eclampsia. The infant weighed 0.75 kg, had no obvious congenital abnormalities and respiration was established quickly. In view of her young gestational age, cord blood immunoglobulin measurements and amniotic fluid lecithin/sphingomyelin ratio were obtained. Her gestational age was actually 26 weeks; her serum IgG level was 0.1 g/l (NR at birth is equivalent to that of the mother, i.e. 7.2–19.0 g/l). A diagnosis of hypogammaglobulinaemia of prematurity was made and her mother's serum levels were checked and found to be normal.

Nutritional support was given and an intravascular catheter inserted to enable blood sampling. On day 10, the infant developed apnoea, bradycardia and abdominal distension. Investigations showed a neutrophilia and raised C-reactive protein (CRP) and blood cultures grew Staphylococcus aureus. Intravenous antibiotic therapy was started for this neonatal staphylococcal infection; IVIG therapy was considered too, but the infant made a good recovery on antibiotics alone; she was discharged after 8 weeks (rather than on day 14 as hoped).

Case 18.3 Recurrent spontaneous abortion (RSA)

A 32-year-old woman, who had had three previous spontaneous miscarriages in the first trimester, sought advice from a specialist obstetrician. There was no history of infections in these pregnancies. Examination of the fetal products had not been done but there was no family history of genetic disease or recurrent fetal loss in close female relatives. She had been extremely well but she and her husband were anxious. She had no obvious rash, arthritis or bruising and appeared to have a normal uterus and cervix.

Blood tests were negative for cardiolipin, thyroid and antinuclear autoantibodies, and CRP and immunoglobulin measurements were normal. She was advised that she had no underlying cause for the recurrent abortions and that the chance of a successful pregnancy was 30%; she delivered a healthy, live female infant 11 months later.

Essentials of Clinical Immunology, Sixth Edition. Helen Chapel, Mansel Haeney, Siraj Misbah, and Neil Snowden.

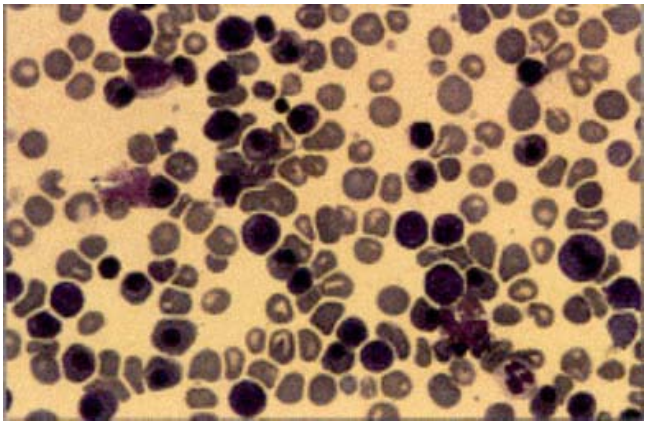
Case 18.4 Systemic lupus erythematosus

A 19-year-old girl had been diagnosed as having SLE 15 months earlier, following presentation with arthritis in her hands, a rash (livido reticularis) on her arms and considerable spontaneous bruising. She had had antinuclear antibodies of 1/320, C3 of 450 mg/l, C4 of 70 mg/l and a platelet count of 54×10^9/l at that time. Renal function was normal but she had both low-titre anticardiolipin antibodies and a lupus anticoagulant, though no antibodies to double-stranded DNA (dsDNA) at presentation. She consulted an obstetrician at 16 weeks into an unexpected pregnancy whilst in disease remission and on 5 mg of prednisolone daily; she had taken the message about possible difficulties in achieving a pregnancy too literally! She was seen every 2 weeks throughout the pregnancy to monitor activity of the SLE; regular full blood counts, C3, C4, creatinine, anticardiolipin and dsDNA antibody measurements were done as well as urine and blood pressure monitoring. These tests were unchanged throughout the pregnancy. A live, normal, male infant was delivered uneventfully by caesarean section at 38 weeks in view of her low platelet count. In the puerperium, she had a mild exacerbation of arthritis and rash for 6 weeks but without proteinuria, increase in serum creatinine or DNA antibodies. The infant remained well.

Case 18.5 Transient neonatal Graves' disease

A 32-year-old primagravida was seen in the obstetric clinic at 16 weeks of gestation, having suffered from severe morning sickness until the 14th week. She was now complaining of heat intolerance, weight loss, palpitations and fatigue. There was no past history of thyroid disease and no family history. On examination she had a marked tachycardia, was thin and there was a bruit over the thyroid. Thyroid function tests showed undetectable thyroid-stimulating hormone (TSH) and high levels of free T3 and T4. Levels of autoantibodies to thyroid microsomes were extremely high (1/400 000) and antibodies to TSH receptors revealed that she had Graves' disease. She was treated with carbimazole and the dose was kept to a minimum to keep the T3 in the high-normal range. Surgery was not required.

As the level of TSH receptor antibodies was still high at 36 weeks, it was no surprise when the cord blood from a female infant with normal-sized thyroid (delivered at 37 weeks) was found to have high T3 and T4 levels and positive TSH receptor antibodies. The neonatologist judged that no treatment was required and the parents were reassured that neonatal Graves' disease is transient. At 3 months the baby had normal thyroid function.



Case Figure 18.5 Haemolytic disease of the newborn – blood film in a newborn not treated in utero, showing immature (nucleated) red cells and grey tint to mature red blood cells indicating reticulocytes (polychromasia).