work up showed the following: 1. x-rays of knees and femur—skip lesions in the right femur, one sclerotic in the middle shaft with heavy perielastic reaction and another one mainly lytic with destruction of the cortical bone and periostial reaction. Magnetic resonance imaging showed skip lesions localised in the middle third of diaphysis and in the distal metaphysis of the femur. The lesions destroyed the cortical bone, infiltrated the bone marrow, and produced a perioestal reaction without extension to the soft tissues or in the epiphysis. These lesions were indicative of a possible bone solid tumour—that is, osteoscarcoma or Ewing’s sarcoma. However, a thallium scan was not indicative of malignancy. Her haematological and biochemical findings, including alkaline phosphate and lactate dehydrogenase, were also within normal limits. An open bone biopsy was then performed and ruled out the chance of malignancy; it showed aseptic necrotic lesions in the femur. The case is presented because of the unusual presentation and imaging appearance of the aseptic necrosis.

8.2 Disabemlent without untreated systemic juvenile idiopathic arthritis

K BUCHNER, T SAURENMMANN
Department of Immunology, University Children’s Hospital, Zurich
Backhground—We commonly only know the final state of systemic juvenile idiopathic arthritis (sJIA) from pictures in medical textbooks. Nowadays effective drugs exist which can stop the inflammation preventing disability.

We present an 8 years 3 months old girl who had had sJIA since the age of three. Case report—Personal history: 1994 diagnosis of sJIA. 1995 begin treatment with non-steroidal anti-inflammatory drugs, 1996 additional treatment with steroids. 1996/97 tapering of steroids and discontinuation in November 1998. January 1998–99 treatment with growth hormone because of impressive growth retardation. January 1999 exacerbation of sJIA. A trial of treatment with methotrexate was discontinued after two weeks. Since then only homeopathic treatment has been given by the parents. Clinical examination December 1999: bad health, all joints are extremely swollen, very painful on movement and palpation, severe limitation of motion, and functional loss in every joint. The girl can nearly walk; she cannot stand up or sit down or lie down when in sitting position. She is not able to lie flat on her back or to dress or undress, her neck is fixed in a flexion contracture and she cannot look up or turn her head at all. Growth retardation, retardation of development. A Ray: very severe destruction with loss of joint space, erosions, and signs of aseptic necrosis. Possible instability of the atlanto-occipital joint.

Conclusions—sJIA is a JEA with a chronic illness, which untreated can lead to most severe destruction despite its mostly favourable prognosis. In most cases sJIA can nowadays be treated effectively with drugs to prevent disability. Children with sJIA therefore must be treated effectively and in time.

8.3 Pain in arms and legs in childhood

C GONZALEZ ESPINOSA, B GONZALEZ ALVAREZ, R MIRALLES CHICHIULLA
Paediatric Unit, University Hospital of Canary Island, Tenerife, Spain
Objective—To describe the different causes and characteristics of pain in children with referred pain in the arms and legs.

Materials and methods—We studied, from 1995 to 1999, 207 school age children from Tenerife island, with referred pain in arms and legs. The diagnosis was made from clinical history, physical examination, blood tests, and radiological study in all of them; additional tests were need for some of them (bone gammagrapy, computed tomography, or magnetic resonance imaging).

Results—Of the 207 children, 102 presented organic causes and 106 were diagnosed as growth pains. In the group with organic pains, 38 were diagnosed as arthritis (17 were septic arthritis and 21 juvenile chronic arthritis, 12 oligoarticular, and 9 polyarticular), and 64 as myositis. In the group with arthritis the joints most commonly affected were the knee (55 children were affected; left knee in 47 and right knee in 6). In the group with myositis 80% of the children had had an enteric or upper respiratory infection previously. In the group labelled as growth pains, additional tests (bone gammagrapy, muscle enzymes) were carried out in 8 children to rule out organic causes. The course was favourable in all the patients with growth pains and myositis. In the arthritis group, treatment was started in all of them and the outcome was favourable in only 29.

Conclusions—Pain of arms and legs, particularly growth pain, in childhood is common, though few reports exist in the current literature. Moreover, they are an important cause of absence from school, causing concern to parents. The results of our study confirm this assumption.

8.4 Cementless total hip arthroplasty in juvenile idiopathic arthritis

T ODENT, C GLORION, P TOUZET,
Orthopaedic Surgery Unit, Hôpital des Enfants Malades, Paris, France
From 1975 to 1997 40 patients with juvenile idiopathic arthritis (JA) had 68 cementless hip replacements. Of these prostheses used were Zweymuller protheses. Autotopic bone grafts were used for important acetabular defects.

The average age of the patients at the time of surgery was 17.5 years (range 11–29). JA was systemic in 12 cases, polyarticular in 28 cases. Sixteen hips had had a surgical synovectomy with triamcinolone hexaconitate previously and JA was active in 16 cases. Functional results were evaluated according to the Postel Merle d’Aubechies classification.

Results for the hips were rated excellent for motion and pain. However, functional results observed were quite different because of the location of arthritis, and 8 patients needed another reconstructive procedure to recover good function. A radiographic review of good bone integration of the components despite early migration in cases of bad primary fixation. It showed the thickness of the femoral shaft bone around the femoral piece. Use of cementless prosthesis appears to be a good solution in this disease, preserving bone stock and showing good radiological and functional results.

9 Rare diseases

9.1 Urinary glycosaminoglycan in the course of FMF

B BASKIN, U SAACTCI, A BAKALOGLU, S OZEN, R TOPALOGLU, N BESBAS
Hacettepe University, Department of Paediatric Nephrology and Rheumatology, Ankara, Turkey
Familial Mediterranean fever (FMF) is characterised by recurrent fever and serositis. The most important complication of the disease is amyloidosis, which is diagnosed by biopsy. Cheaper and non-invasive methods would be important in the early diagnosis of amyloidosis. We have attempted to study the role of urinary glycosaminoglycan (GAG) in the early diagnosis of amyloidosis. The study group included 123 patients with FMF without attack and 11 patients with FMF secondary amyloidosis. Patients with acute attack were excluded. Eight healthy children and 10 patients with primary nephrotic syndrome served as controls. Microalbumin was also measured in patients with FMF. In patients with amyloidosis, urinary GAG levels were lower than in patients with FMF, those with nephrotic syndrome, and controls. In 49 patients with FMF with a low GAG level, urinary GAG levels increase significantly with incremental increase in the colchicine dose (p<0.05). In some patients with low GAG levels, microalbuminuria was also detected. In these patients, microalbuminuria also decreased along with the increase in urinary GAG, when the colchicine dose was increased. These results suggest that in patients with FMF, monitoring urinary GAG and microalbumin levels may be important in the regulation of the colchicine dose and prevention of amyloidosis. We suggest that effective colchicine dose may be monitored by following urinary GAG levels.

9.2 Epithelial cell-derived neutrophil activator (ENA-78) levels in patients with FMF

B BASKIN, U SAACTCI, S OZEN, R TOPALOGLU, A BAKALOGLU, N BESBAS, O KALAYCI
Hacettepe University Departments of Paediatric Nephrology, Rheumatology, and Immunology, Ankara, Turkey

The exact mechanism triggering acute attacks in familial Mediterranean fever (FMF) is unclear. Neutrophil is the effector cell of the inflammatory response at the serosal surface.

Epithelial cell-derived neutrophil activator (ENA-78) is a recently discovered chemokine, is one of the most important chemotactic cytokines for neutrophil chemotaxis. We have examined plasma ENA-78 levels in 63 patients with FMF. Thirty one patients had acute attacks and 32 patients had remission.

Mean (SD) ENA-78 levels were greater in patients with FMF than in patients with FMF, those with nephrotic syndrome, and controls. In 49 patients with FMF with a low GAG level, urinary GAG levels increase significantly with incremental increase in the colchicine dose (p<0.05). In some patients with low GAG levels, microalbuminuria was also detected. In these patients, microalbuminuria also decreased along with the increase in urinary GAG, when the colchicine dose was increased. These results suggest that in patients with FMF, monitoring urinary GAG and microalbumin levels may be important in the regulation of the colchicine dose and prevention of amyloidosis. We suggest that effective colchicine dose may be monitored by following urinary GAG levels.
fibrinogen levels. Our results suggest that ENA-78 may be an important factor in the pathogenesis and activity of FMF disease.

9.3 Five cases of juvenile idiopathic arthritis and the velocardiofacial (22q11) syndrome
K DAVIES, ER STIEHM, P WOO, KJ MURRAY
Department of Rheumatology, Great Ormond Street Hospital, London, UK

Introduction—The association between juvenile idiopathic arthritis (JIA) and the velocardiofacial syndrome (VCFS) has recently been described in several separate groups in a total of eight cases. We report a further five cases, all of whom have deletions at the 22q11 locus.

Results—All five patients had a history of congenital heart disease (CHD) and velocardiofacial insufficiency (VP). 4 have significant learning difficulties. None had a history of recurrent infections but two have a selective IgA deficiency and one has abnormal T cell function with a defective phytohaemagglutinin response. In all patients the arthritis is polyarticular onset or extended pauciarticular in nature, progressively requiring treatment with disease modifying agents and indistinguishable from true JIA. Three of our patients were diagnosed with VCFS in the first years of life as a result of the combination of CHD and VPI. In the other two the syndromic diagnosis was made at 17 and 21 years after rheumatology review. The immunological profiles of the 13 total cases of VCFS with JIA are reviewed: 5 are antinuclear antibody positive, 3 rheumatoid factor positive, 5 have T cell deficiencies, and 4 (2/5 of ours) have selective IgA deficiency. The increased incidence of both IgA deficiency and JIA in the 22q11 deletion syndrome provides further evidence for possible genetic factors in the pathogenesis of JIA. In addition, the presence of demonstrable T cell defects in 5/13 patients adds further weight to the hypothesis that JIA is a T cell related disease.

Conclusions—The severity of the arthritis in VCFS may reflect underrecognition of milder cases of joint disease in this syndrome and it is important for clinicians to be aware of the association. In addition, the possibility of VCFS should be considered in any patient with JIA in the presence of other features of the syndrome, such as CHD, speech problems, and learning difficulties.

9.4 Effects of colchicine on neutrophil adhesion molecules in familial Mediterranean fever (FMF)
R TOPALOGLU, E BASKIN, H OKUR, N BESBAS, U SAATCI, M TUNCER, A BAKKALOGLU
Departments of Paediatric Nephrology and Haematology, Hacettepe University, Ankara, Turkey

We aimed at elucidating the role of L-selectin (CD62) and β2 integrins (CD11b and CD18) and activated protein C (APC) in patients with FMF and determining the effect of colchicine treatment on these parameters. CD11b, CD18, and CD62 expression on lymphocytes and neutrophils was evaluated by immunofluorescence flow cytometry. Thirty one children with FMF during acute attack while receiving colchicine and 22 children during remission while receiving colchicine, together with 12 children with an acute attack who were not receiving colchicine were evaluated. The median level of neutrophil CD18 expression was significantly higher in patients with FMF in acute attack than in remission (p<0.05). Furthermore, patients with acute attack and receiving colchicine had a higher CD18 expression than those with acute attack but not receiving colchicine (p<0.05). No significant difference in CD62 and CD11 expression, both on neutrophils and lymphocytes, was seen between patients with acute attack and in remission and the patients not receiving colchicine. APC, which may upregulate the proinflammatory cytokines interleukin 6 (IL6) and IL8 in human endothelial cells, remained at normal levels both in patients with acute attack and those in remission. Our results suggest that as one of the neutrophil adhesion molecules CD18 appears to have an important role in the FMF attacks. Further studies are needed.

9.5 SAPHO syndrome and hemiparesis in a child
E VANIN*, P DRIGO*, G MARTINI*, MS STRAFELLA*, L MARCAZZO†, F ZULIAN*
*Department of Paediatrics, University of Padua; †Hospital of Arzignano, Italy

SAPHO syndrome is uncommon in children. It is sometimes associated with inflammatory bowel disease and ophthalmological conditions. We present the case of a child with acute transitory hemiparesis as presenting symptom of SAPHO.

An 8 year old boy was referred for a right flaccid hemiparesis and painful, warm, and erythematous mass over the right sternoclavicular joint. The past medical history included only primary enuresis. On admission, neurological examination showed decreased strength in the right upper and lower extremities, claudication but normal pain, thermal and light touch sensation. Laboratory tests showed erythrocyte sedimentation rate 47 mm/1st h, while C reactive protein, antinuclear antibody, rheumatoid factor, coagulation tests, and fungal, bacterial, and viral culture were normal. Standard x ray and computed tomography (CT) of the osteoarticular lesion were compatible with osteopetrosis. Cerebral CT and magnetic resonance imaging (MRI) were negative; MRI of the spinal cord showed thoracic syringomyelic cavity between D5-D6 and D10-D11. An open biopsy of the sternoclavicular mass showed fibroinflammatory tissue with rare lymphocytes and plasma cells. On follow up the neurological problems completely recovered in a few weeks while the sternoclavicular lesion persisted with intermittent symptoms of pain and swelling.

The diagnosis of SAPHO syndrome is supported by the sternoclavicular involvement, the insidious clinical course, and the histological picture. Skin lesions in children can be absent at onset or appear later on during the course of the disease. A neuropathic arthropathy has been excluded on the basis of the level and acute symptom of the syringomyelia, the preservation of pain, thermal sensation and cutaneous trophosis, and the histology. However, the coincidence between the onset of SAPHO syndrome and acute transitory hemiparesis is peculiar and not previously reported.

9.6 Puzzling problems for the diagnosis of inflammatory diseases
I KONÉ-PAUT*, B ROQUELAURE†, P MINODIER*, J SARLES‡, JR HARLÊ‡, JM GARNIER*, I TOUTOU†
*Department of Paediatrics, CHU Nord; †Department of Paediatrics, CHU la Timone; ‡Internal Medicine CHU la Conception Marseille; †Laboratory of Genetics, Hôpital A de Vileneuve, Montpellier, France

The diagnosis of inflammatory disorders remains a challenge for the physicians. Indeed, each separate entity can mimic another one clinically and there are few biological tests to help the diagnosis. Moreover, a number of these diseases may aggregate in the same patient or in the same family.

Case 1—A 6 year old girl with periodic fever syndrome and ulcerative gastroenteritis and vascular purpura (HLA-B51+), one mutation of the gene responsible for FMF (MEVFV: M694V), mother, grandmother: ulcerative colitis (HLA-B51+).

Case 2—An 11 year old Algerian boy with prolonged fever, myalgia, purpuric rash, and orchitis (2 MEFV mutations M694I, final diagnosis: prolonged febrile myalgia syndrome showing FMF.

Case 3—A 3 year old boy with recurrent fever, oral ulcers, oedemas, ulcers, and sacroiliitis (MEVFV: one L110P, 1 grandmother with Behcet’s disease (BD) and 7 other family members with incomplete BD.

Case 4—A 20 year old woman with periodic fever, complete BD features and antiphospholipid syndrome (MEVFV: one M694V).

This report suggests that a true genetic link may exist between inflammatory disorders. Inflammatory bowel diseases, PAN and BD have been reported in 1% of patients with FMF. We could document 2 MEFV mutations (true genetic FMF) in our case 2 (pseudo-PAN) that we consider as prolonged febrile myalgia syndrome. The presence of MEFV mutations in the other cases of BD’s syndrome (HLA-B51+), grandmother: ulcerative colitis (HLA-B51+).

Case 5—A 12 year old girl with recurrent fever, fever, complete BD features and antiphospholipid syndrome (MEVFV: one M694V).

Hyper-IgD syndrome (HIDS) is characterised by attacks of spiking fever, which last for 1–7 days preceded by chills and rigor and accompanied by a number of symptoms—lymphadenopathy, abdominal distress, skin manifestation, arthritis, splenomegaly, etc. In 1999 the gene for mevalonate-kinase was discovered as the gene responsible for HIDS. Our patient is a girl who came to our department with recurrent fever at the age of 4 years and 7 months. Her fever appeared every week and lasted for 3 days. It was accompanied with cervical lymphadenopathy, abdominal pain, arthralgias, and raised inflammatory proteins and erythrocyte sedimentation rate. Infection and malignancy were excluded. Repeatedly, the IgD level was over 140 mg/l. The patient was treated with prednisone and the fever disappeared. After 6 months of steroid treatment the fever appeared again and IgD reached its maximum—198 mg/l. The patient is now 9 years old, takes 2.5 mg prednisone daily, is without any symptoms, and her IgD concentration remains high.
Currently, DNA analysis for MVK gene is being performed.

9.8 Chronic joint pain in tricho-rhino-phalangeal syndrome type I

T HERLIN*, CA BRANDT*, H-J LÜDECKE†, J OSTERGAARD*, U FRIEDRICH*
*Department of Paediatrics and Human Genetic Institute, University of Aarhus, Denmark; †Human Genetic Institute, Universitätshimmen, Essen, Germany

Tricho-rhino-phalangeal syndrome type I (TRPS) is an autosomal dominantly inherited syndrome characterised by hypotrichosis of the scalp hair, bulbous tip of the nose and skeletal abnormalities including cone-shaped epiphyses of the phalanges and hip. Our patient is a girl, the first child of three healthy parents. No consanguinity. Gross motor development was slightly delayed, but intellectual development has been normal. She was bald until the age of two. She developed a facial impression of TRPS: the scalp hair was thin and sparse, protruding ears, a large broad philtrum, and a pear-shaped nose. Since reaching school age she has had frequent and often daily complaints of pain in the neck, back, and peripheral joints, especially hands, knees, and ankles. She has pronounced hypermobility in both small and large joints and laxity of the skin. She has swelling of the proximal interphalangeal joints of both hands with bilateral ulnar deviations in the middle phalanges of the index fingers. Radiological examination of the hands has shown cone-shaped epiphyses of both second indices. Bone age development is retarded. There are no malformations in the hips.

Combined conventional cytogenic banding analysis and molecular cytogenetic analysis disclosed a pathogenic aberration showing a complex, apparently balanced, translocation t(7;13)(p21;q21)q24.1. The breaking point on chromosome 8 (q24.1) has resulted in an interstitial deletion of at least 3 Mb covering most of the TRPS1 gene region that has recently been cloned.


9.9 X-linked lymphoproliferative syndrome with intracranial and pulmonary aneurysms

R VESELY, V VARGOVÁ
Paediatric Department Faculty Hospital, Medical Faculty UPJ, Košice, Slovakia

X-linked lymphoproliferative disease (XLP) is an inherited immunodeficiency to Epstein-Barr virus (EBV) infection that has been mapped to chromosome Xq25. The most common presentation is fulminant infectious mononucleosis (FIM), but more than 10% of boys have problems, usually infections or lymphoma without EBV infection. Our patient was born in 1985 as the second of three boys to healthy unrelated parents with negative family history. Both brothers died in early childhood after a short febrile condition resembling FIM. Our patient was well until 12 years when he started to have repeated respiratory symptoms and his x ray showed a swelling of the lung tissue and a progressive fibrotic process of both lungs. In November 1999 he was admitted to our hospital and during hyperventilation at functional pulmonary test he suddenly developed massive cerebral bleeding. Subsequent careful imaging showed excessive aneurysms all over his cerebral and pulmonary arterial system. DNA analysis confirmed diagnosis of XLP (mutation of C16ST in the second exon of the gene that causes an amino acid change in position 55—an Arg changes to a stop codon). This phenotype of XLP was new and we can only speculate about the vasculitic process causing multiple aneurysmatic changes. The patient is receiving corticosteroid treatment and recovering from the consequences of cerebral bleeding.

9.10 CINCA (chronic, infantile, neurological, cutaneous, and articular) syndrome: report on three new cases

A TOMMASINI, L LEPORE, E FRAGONAS, M LAZZERINI, V KIREN
Department of Paediatrics and Human Genetics, University of Trieste, Italy

We describe 3 patients with CINCA syndrome, a rare multisystemic inflammatory disease of unknown cause. In all cases the typical rash was present and/or within the first days of life; thereafter the disease progressively affected other organs.

In the first case the rash was associated with papillomela, epidermal atrophy, transfusion, and persistent lymphadenopathy, identified by biopsy as a reactive lymphadenopathy with mixed hyperplasia.

The second case showed recurrent arthralgia and patellar hypertrophy. At direct immunofluorescence examination, the skin biopsy showed an urticaria-like vasculitis affecting the small and medium vessels of the dermis with IgM and complement deposits.

None of our cases had mental retardation (though described as a constant feature). In all 3 cases laboratory findings showed leucocytosis, increased serum immunoglobulin levels, and raised C reactive protein and erythrocyte sedimentation rate.

In 2 cases the neutrophil activation markers were studied: CD11b and CD18 being greatly raised. These surface antigens have a role in the production of interleukin 8 and in the response to this cytokine. Chronic activation of both eosinophils and tissue neutrophils, suggesting a primitive defect of this cell line and of osteoclastic cells, which share the same staminal cells, may have an important role in the pathogenesis of CINCA.

9.11 Primary Sjögren’s syndrome (pSS) in children and adolescents: clinical, immunological, and immunogenetic characteristics

E KOSKOVÁ, M KRUPA, V BOSÁK, KOPECKÝ, J LUKÁČ, D MICEKOVÁ, J ROVENEŠK
Research Institute of Rheumatic Diseases, Piestany, Slovak Republic

We followed up five girls with age average 14.6 years (range 7–16). All patients had recurrent infections of upper respiratory tract and other somatic symptoms included arthritis (3/5), Raynaud’s Phenomenon (3/5), dental decay (3/5), hair loss (3/5), abdominal pain (3/5). Only two patients had sicca syndrome, detected by Schirmer’s test and stimulated parotid secretion. Immunologically, we found polyclonal hypergamaglobulinemia (4/5), positivity of rheumatoid factor (4/5), presence of antinuclear antibodies (3/5), anti-Ro/La antibodies positivity (3/5). Immunogenetic HLA typing showed that three of five patients had antinuclear antibodies B8/DR3, especially associated with anti-Ro/La antibodies. The association HLA-B8/ DR3 with pSS in adults and anti-Ro/La is typical for the Slovak population. All patients had serological changes typical for Sjögren’s syndrome.

Diagnostic criteria for adult pSS are not fully applicable in children and adolescents, because laboratory autoantibody positivity in these patients precedes signs of sicca syndrome. Although anamnestic data, clinical symptoms, and immunological changes may suggest a diagnosis of pSS, sialography may be decisive for the diagnosis in childhood.

9.12 Primary juvenile Sjögren’s syndrome: a rare disease in childhood

V PANAVIENE
Centre of Paediatrics Vilnius University, Lithuania

Primary Sjögren’s syndrome is rare in childhood. The disease affects mainly older women and only a few cases of primary Sjögren’s syndrome in children have been described.

We report the case of a five year old girl, whose initial manifestation of disease was Raynaud’s phenomenon. After 6 months, arthralgia and peripheral polyarthritus developed. Two years later recurrent swelling of the parotid glands (mainly right sided), dry cough, and vasculitis were additionally seen, detectable in cryoprecipitates. Progressed to severe involvement, erythrocyte sedimentation rate, positive rheumatoid factor test, positive antinuclear antibody test, pulmonitis shown by a chest x ray, osteosclerosis of distal phalanges in a hand x-ray were noted. An ophthalmologist showed conjunctivitis with lachrymal hypersecretion. In a biopsy of the salivary glands plasmatic cell infiltration in the glands and in hypertrophied epithelium of ductuli, paracollagenic amyloid concentration around collagen fibers and diagnosis of Sjögren’s syndrome with secondary amyloidosis was made. Corticosteroid treatment and basic treatment with Leukeran (chlorambucil) improved the general status of the patient. After 6 months of therapy, signs of inflammation, were found, but disorder of the peripheral blood circulation and acrocyanosis was present. Typical dry mouth and eye symptoms and symptoms of other systemic autoimmune disease did not develop during the period of the observation. This clinical case report suggests, that primary juvenile Sjögren’s syndrome can manifest without sicca features, typical in adults. Early diagnosis and treatment relieves the course of the disease and, probably, protects dysfunction of the exocrine glands.

9.13 Thrombosis associated with antiphospholipid antibody in paediatric systemic lupus erythematosus

M JAKUTOVIC, V PANAVIENE
Vilnius University Children’s Hospital, Vilnius, Lithuania

Antiphospholipid syndrome is a disorder of recurrent arterial or venous thromboses, thrombocytopenia, and the presence of circulating antiphospholipid antibodies. Recurrent fetal loss is a common manifestation of the syndrome and frequently occurs in women with no history of thrombosis. Thrombocytopenia occurring during the course of the
anti-phospholipid syndrome is usually mild. If the clinical syndrome occurs in a patient with systemic lupus erythematosus, or less commonly in other disorders, such as systemic sclerosis, rheumatoid arthritis, or Behçet’s syndrome, anti-phospholipid syndrome is regarded as secondary. In primary anti-phospholipid syndrome there is no evidence of other underlying disease.

We report the case of a 14 year old boy, whose initial manifestation of disease was arterial occlusions of major vessels of the legs with claudication and gangrene of digits. After several months, transient ischaemic attacks, due to thrombosis of intracerebral arteries, developed. The patient conformed to the American Rheumatism Association criteria for the classification of systemic lupus erythematosus with the presence of antiphospholipid antibodies in serum. Good results were achieved with long term treatment.

Antiphospholipid syndrome has proved beneficial. This led us to treat our patient with a monoclonal anti-TNFá antibody (anti-TNFá) (from PNET group malignancies) in a 16 year old girl. We observed a series of diaphyseal fractures, right humerus, left tibia, and right clavicle, a fracture of the right cervical vertebrae, and an exostosis of the right femur. The patient was treated with continuous PGE1 infusion with clinical benefit is causally related to its use. The most rare case of Askin’s tumour (a neurotropic fibrosarcoma) was seen. Side effects of treatment were pain and erythema on PGE1 infusion.

Conclusion—The diagnosis of antiphospholipid syndrome was caused by (a) pronounced rheumatological manifestations; (b) erroneous unification of different disorders under a single title; (c) an overestimate of the negative results of the previous diagnostic procedures. Our experience proves that in all doubtful cases differential diagnostic research should be continued.

9.17 Familial Mediterranean fever (FMF) presenting with unusual musculoskeletal manifestations

R BRIK
Department of Paediatrics and Paediatric Rheumatology Service, Rambam Med Ctr, Haifa, Israel

FMF is characterised by recurrent episodes of peritonitis, pleuritis, and synovitis. Although the most common musculoskeletal manifestation of the disease is acute recurrent monarthritis other manifestations have been described, including chronic joint disease, spondyloarthropathy, myopathy, and the “febrile myalgia syndrome”. The diversity and non-specificity of these clinical features are often an obstacle to the diagnosis of FMF. We describe a group of patients who displayed a variety of non-specific musculoskeletal symptoms and in whom genetic screening showed homozygosity for the FMF gene.

Ten patients were Sephardic Jews and 3 were Israeli Arabs. Nine were homozygous for the M694V mutation and the rest were compound heterozygous for one of the other 4 mutations (V726A, M680I, M694I, E148Q). Six patients had the “febrile myalgia syndrome”, 2 had recurrent episodes of calf pain and pretilial swelling, 2 had non-specific myopathy, 1 had recurrent episodes of thigh swelling, 1 had chronic knee arthritis without any other features of FMF, and 1 had spondyloarthropathy.

Conclusions—Our observations indicate that genetic screening for FMF should be included in an investigation of recurrent or unexplained episodes of musculoskeletal symptoms among children of Mediterranean extraction.

9.18 Treatment of hyper-IgD syndrome: a question unanswered

P PICCO, R MONTEVERDE, A BUONCOMPAGNI M GATTORNO, AM PRIEUR, M DI ROCCO
Department of Rheumatology, G Gaslini Institute, Genoa Italy, Department of Rheumatology, Hospital des Enfants Malades, Paris, France

A long term follow up of a child affected with hyper-IgD syndrome (3 years) is reported, with particular emphasis on the treatment of this disease. A male child, born on March 1996 from unrelated, healthy parents, developed recurrent fever spikes associated with chills, severe malaise, short term diarrhoea from December 1996. Between disease flare
ups, he was well. Three months later, a widespread enlargement of mesentric lymph nodes and a thickening of colonic walls were shown. In the following months we noted (a) high IgA plasma concentration (9.45 g/l); (b) increased mevalonate urinary excretion; (c) strongly reduced activity of mevalonate kinase (5.4 v 347 pmol/min/mg). Familial Mediterranean fever was ruled out by genetic analysis. On this basis, we suggested the diagnosis of hyper-IgD syndrome. The patient was treated with colchicine (1 mg/day con-
tinuously), prednisone (0.5 mg/kg), and naproxene (15 mg/kg) only at the beginning of flare up. Table 1 shows the results obtained.

Although our one case does not permit statistical analysis, our data seem to suggest that colchicine gives better disease control, reducing fever flare ups, whereas prednisone and naproxene sharply stop the fever attack at the beginning.

We thank RA Wanders for the mevalonate-kinase assay.

9.19 Joint involvement in eosinophilic gastroenteropathy in childhood

A BUONCOMPAGNI M GATTORNO, A BARABINO, P GANDULLIA, C MARINO, P PICCO

Department of Rheumatology, Gastroenterology and Pathology, G Gaslini Institute Genoa Italy

Eosinophilic gastroenteropathy (GE) is an uncommon disease characterised by eosinophil infiltration of the gut wall. The disease may have different clinical presenta-
tions. Joint involvement is likely an underesti-
mated complication of GE.

We report on 13 patients seen during the period 1992–99. Their mean age at the pres-
centation of the disease was 8 months (range 1–4). All patients underwent gut endoscopy with multiple biopsies. We considered the gold standard to be villous containing >20 eosinophils infiltrating the epithelium.

The heralding symptoms were severe iron deficiency anaemia in 5 patients, which was associated with oedema due to loss of protein through diarrhoea in a further 5 patients; and haematochezia in 5 patients. Two patients presented severe bloody diarrhoea. The remaining patient came to us because of exu-
dative ascites.

Four patients developed non-erosive ar-
thritids in both the knee (2) and at the tibiotarsal joints. This symptom occurred after 12–19 months from the diagnosis. Arthritis was treated with sodium naproxene in 2 patients and intra-articular steroid infiltration in 1 patient. Interestingly, 1 patient developed a good response to an exclusive mononuclear diet; when this schedule was modified arthritis flared up. No patient needed steroids or immunosuppressive drugs for the control of arthritis.

Our experience suggests that (a) arthritis is a relatively common complication of GE; (b) the feeding treatment using moneneric dietary schedule may be effective in the treat-
ment of GE related arthritis.

10 Scleroderma

10.1 Thermography in juvenile localised scleroderma assessment

G MARTINI*, KJ MURRAY†, KJ HOWELL*, P WOOD, F JHARRERS, D ATHERTON‡, CM BLACK*

*Centre for Rheumatology, Royal Free Hospital, London; Paediatric Rheumatology and Dermatology Units, Great Ormond Street Hospital for Sick Children, London, UK

Aim—To evaluate the clinical use of infrared thermography in localised scleroderma (LS) in disease activity assessment and manage-
ment.

Methods—We retrospectively reviewed ther-
mal images of children with LS obtained between 1993–2000. Thermographs were included only when a contemporary detailed clinical description of the lesion(s) was available. Lesions were classified as “active” (new or extended) or “quiescent” according to clinical description (colour, skin texture, measurements). Thermographs were consid-
ered positive when the area temperature was >0.5°C higher than the surrounding skin or the opposite site. Two clinicians (GM and KJM), blinded to the clinical description and thermography report, reviewed the ther-
mal images independently. Full agreement in scor-
ing was achieved in 86%, and discordant results were rescored by mutual examination.

Results—40 patients were included in the study (26 F, 14 M). The most common diagnosis was a combination of morphea and linear scleroderma (M+LS, 14 patients), fol-
lowed by isolated LS (11 patients), en coup de sabre (6 patients), and M (5 patients). 68 lesions were examined: 35 affecting the legs, 16 the arms, 10 the face/scalp, and 9 the trunk. We reviewed 130 separate thermal images, 34 lesions having multiple thermo-
graphic examinations.

There was complete agreement between the clinical description and thermography in all new lesions (table 1). Of the clinically inactive lesions positive on thermography, most were “old” lesions with the presence of severe atrophy and subcutaneous fat loss.

Table 1

| Lesion | Flare ups (days) Mean (SD) Follow up (months) Flare ups |
|--------|-------------|-----------------|-------------|
| No treatment | 17 (8.2) | 5 | 7 |
| Colchicine | 33 (25) | 15 | 15 |
| Prednisone | 14 (6.2) | 5 | 9 |
| Naproxene | 18 (7) | 3 | 3 |

Conclusions—Infrared thermography is a po-
tentially reliable tool for assessing the activity of LS lesions in conjunction with clinical activity, particularly for clinically suspicious new and extended lesions. Further evaluation is needed to determine whether ther-
mography can predict future progression of lesions, particularly those which are equivocal clinically.

10.2 An unusual type of scleroderma with neurological disease

F CORONA, M SCARAZATTI, A PETACCO, F ZIENZIOTTO, F BELTRAMELLI, M BARDARE, F CORONA, M SCARAZATTI, F BELTRAMELLI, M BARDARE

Paediatric Rheumatology Centre, I Paediatric Clinic, University of Milan, Italy

We describe the case of a 14 year old boy who started with a linear scleroderma and pre-
sented later a neurological disease.

At the age of 11 years the boy developed a marked hypotrophy and hypoplasia of the right forearm apparently owing to prolonged immobilation. Over a period of few months the disease progressed to affect the skin and muscles of the right arm, hand, and fingers with a sclerotic evolution. All laboratory and radiological examinations (x rays and mag-
netic resonance imaging (MRI) of the arms, x rays of the chest and of the gastrointestinal tract), spirometry, and a nailfold capillaroscopy were normal except for a high antinu-
clear antibody titre (1/1280).

Borrelia infection (IgM and IgG low titre) was suspected and the patient began treat-
mant with penicillin 15 000 000 U/d for 10 days, without any improvement.

Two years later he had uveitis and seizures (abnormal EEG, cranium asymmetry at x ray examination, microvascular ischaemia en-
cephalopathy at MRI, negative cerebral arte-
radiography).

Recently, facial hemiatrophy with a con-
tralateral hemisyndrome is evident and skin and muscle atrophy have worsened.

Whether this form is an evolution of linear systemic scleroderma or is linear scleroderma with neurological disease, which has already been described, cannot be stated for sure.

10.3 Efficacy and safety of autologous peripheral blood stem cell transplantation in three children with systemic sclerosis and progressive pulmonary disease

A MARTINI, R MACCARIO, A RAVELLI, D MONTAGNA, F DE BENEDETTI, F BONETTI, S VIOLA, M ZECCA, P DE STEFANO, F LOCATELLI

Dipartimento di Scienze Pediatriche, Università di Parma, IRCCS Policlinico S Matteo, Parma, Italy

Background—Autologous peripheral blood stem cell (PBSC) transplantation has been proposed as a treatment for autoimmune dis-
ases with fatal prognosis.

Patients—Three children with systemic scle-
rosis since the age of 4 (patient 1), 7 (patient 2), and 6 (patient 3) years had a severe disease course, with progressive cutaneous, articular, and pulmonary disease despite immunosuppressive treatment. Because pul-
monary fibrosis, once established, is progres-
sive, at the age of 11, 10, and 9 years, respec-
tively, they discontinued all drugs and received an autologous PBSC transplanta-
tion.

Transplantation procedure—After obtaining approval from the local ethical committee and parents’ informed consent the three chil-
dren were given CY (4 g/m²) followed by G-CSF (10 mg/kg/d) to allow the collection of PBSC. The conditioning regimen before transplantation comprised CY at a dose of 50 mg/kg from day 5 to day 2 and the monoclonal antibody Campath-1g at a dose of 10 mg/d for 2 days. The post-
transplantation period was uneventful in all patients.

Results—Two patients (patients 1 and 2) had a significant clinical benefit at 40 and 16 months, respectively, after transplantation, with improvement in growth rate and general wellbeing, and general skin softening. In both of them high resolution pulmonary computed tomography (HRCT) scan did not show any progression of fibrotic changes. At variance, in 1 patient (patient 3) the transplantation procedure did not affect significantly the skin

www.amrheumdis.com