COMMON SKIN LESIONS IN CHILDREN
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Red Skin Lesions in Children

- Spider Naevi
- Salmon Patch
- Port-wine Stain
- Haemangiomas
- Spitz Naevi
Spider Naevi

- 10 - 15% children
- Common on the face and upper chest.
- Central red papule with feeding capillary 'legs'
- Compressing the central point will blanche the arcade of vessels
- Usually resolve spontaneously
CAPILLARY VASCULAR MALFORMATIONS

- Malformed dilated blood vessels
- Always present at birth

Two common capillary vascular malformations:

Salmon Patch

Port wine stain
SALMON PATCH

• Very common – 40% of all newborns

• Small flat patches of pink or red skin with poorly defined borders

• Nape of neck (Stork Bite), on the forehead between eyebrows (Angel’s Kiss) or on the eyelids.

• Most lesions spontaneously disappear within first year of life

• Stork bites tend to be more persistent and remain unchanged in 50% of cases
PORT WINE STAIN

- Less common – 0.3% of newborns
- Large flat patch of purple or dark red skin with well-defined borders
- Flat at birth – becomes raised with time
- Face more commonly affected
- Some fade, some deepen in colour
- Most remain unchanged
- Respond to pulsed dye laser – 45% improve by at least 75% after 5-25 treatments
STURGE-WEBER SYNDROME

- Capillary vascular malformation affecting the skin supplied by one branch of the trigeminal nerve
- Defects in underlying tissues:
  - Cerebral atrophy
  - Calcification of skull
  - Epilepsy
  - Meningeal angioma
  - Glaucoma, optic atrophy
HAEMANGIOMAS

• Present at birth or shortly after
• 10% infants affected
• Formed from proliferating endothelial cells
• 80% occur on head and neck
• Most of the growth is in first 3 months
• Most stop growing at 5 months
HAEMANGIOMAS

Predisposing Factors

- Low birth weight
- Prematurity
- Females
- Caucasians
- Multiple births
- Advanced maternal age
- Family history of Infantile Haemangiomas
ERUPTIVE NEONATAL HAEMANGIOMATOSIS

- Multiple infantile haemangiomas present at birth or within early neonatal period
- Benign eruptive neonatal haemangiomatosis – if only skin involved
- Disseminated eruptive neonatal haemangiomatosis - when lesions present on internal organs (GI tract, lung, brain, eyes)
- Death occurs within first few months of life
- If a neonate has more than 6 haemangiomas should be further investigated.
REGRESSION

2 months

30% regress by the 3rd birthday

1 year

50% regress by the 5th birthday

2 years

70% regress by the 7th birthday

90% regress by the 9th birthday
WHEN IS TREATMENT NECESSARY?

• Very large and unsightly lesions

• Ulcerating haemangiomas (5–25%)

• Lesions that impair vision, hearing, breathing or feeding

• If they fail to resolve by school age
MANAGEMENT

• The majority of lesions need no treatment.

• Regular monitoring in Primary Care may reassure parents.

• Photographs at 6-12 month intervals are very useful
Which lesions should be referred?

- Interfering with breathing, feeding, or vision. Amblyopia can occur within 10 days of lesions interfering with vision.
- Facial lesions.
- Lesions complicated by bleeding, ulceration or causing functional impairment.
- Lumbosacral lesions - up to 50% of such cases are associated with significant problems such as tethering or compression of the spinal cord, and external genital abnormalities. MRI imaging should be performed in such patients.
- Kasabach-Merritt syndrome (consumption coagulopathy) is an uncommon complication, mainly in larger lesions.
TREATMENT OF SEVERE INFANTILE HAEMANGIOMAS


**Mechanism of action:** inhibits the growth of blood vessels and constrict existing blood vessels within the haemangioma. It acts on beta adrenergic receptors to decrease the release of blood vessel growth-signalling molecules (VEGF) and (BFGF) and by triggering programmed cell death.
Indications for Propranolol

- **High risk sites** where they may interfere with normal function such as breathing, feeding, vision and hearing.

- Within the airway
- Around the eye
- Around the mouth or on the lips
- Within the ear canal
- On the tip of the nose
- Large lesions on the face
- Napkin area
- Skin creases
- Multiple haemangiommas including visceral (internal) lesions.
How effective is Propranolol?

- Most effective when started during the growth phase of the haemangioma, in infants up to 6 months of age.

- They may begin to respond within 24 to 48 hours. The haemangioma softens (decrease in volume) and darkens in colour.

- The optimal duration of treatment is yet to be established, though most reports are of use for 3-12 months. Rebound growth may occur on cessation and gradual weaning may be required.

- NEJM 2015 – 460 infants studied 88% of treated group showed improvement at 5 weeks compared to 5% in control group.
Side Effects of Propranolol

- Hypotension
- Bradycardia
- Hypoglycaemia
- Bronchial hyper-reactivity
- Restless sleep
- Cold extremities
- Constipation
TREATMENT OF INFANTILE HAEMANGIOMS

- Small lesions
- No treatment
- Very potent topical and or intralesional corticosteroids
- Topical beta blockers
- Lasers
TOPICAL BETABLOCKERS

• Timolol maleate (Timoptol –LA gel 0.5%)
• Apply once a day
• Treatment is usually for six months
• Side effects are very rare – bradycardia, hypotension, bronchospasm, hypoglycaemia, sleep disturbance, peripheral vasoconstriction
Topical Timolol for Infantile Haemangiomas

A. before timolol  B. 2 weeks of timolol  C. 4 weeks of timolol  D. 16 weeks of timolol
Topical Timolol for Infantile Haemangiomas
SPITZ NAEVUS
(Juvenile Melanoma)

- Well-circumscribed, smooth surfaced, firm, dome-shaped pink to dark brown papules and nodules
- Head, neck and limbs
- 2-20mm diameter
- 70% < 2 years
- Commoner in fair skinned
- Grow rapidly over first 3-6 months
- Remain static for years
- Spontaneously disappear
- Local excision with 2mm margin
- Benign
PURPLE SKIN LESIONS IN CHILDREN

• Pyogenic granuloma
PYOGENIC GRANULOMA

- Sudden in onset, grows rapidly and bleeds after minimal trauma
- Can arise on any part of the body but the most common sites are the fingers / hands, head and upper trunk
Dermoscopy Pyogenic Granuloma

- A distinct keratinised border or collarette.
- Vascular structures are usually present but there is no clear lacunar pattern.
- White linear 'rail lines' are often seen.
Management of Pyogenic Granuloma

- Excision may be required if lesion is bleeding or diagnosis is in doubt

- Recurrence rate is high – 15%

- Topical Timolol has been used
  7 cases – 6 topical
  All partial response by 2 months
  3 bleeding lesions – bleeding stopped
  No adverse events

Paediatric Dermatology 2014
Skin coloured lesions in children

- Viral warts
- Molluscum
- Pilomatrixicoma
- Epidermal naevus
- Dermatofibroma
- Granuloma annulare
VIRAL WARTS

**Common warts** – single or multiple flat-topped, skin–coloured hyper-keratotic lesions

**Plane warts** – slightly raised, circular or ovoid lesions on the face and dorsum of the hands

**Plantar warts** – hyperkeratotic lesions that are subject to constant pressure. Grow inwards and produce discomfort
TREATMENT OF WARTS

1. Nothing!
   - 50% warts disappear in 6 months
   - 90% warts disappear in 2 years
2. Occlusion – duct tape
3. Chemical treatments – salicylic acid, podophyllin, 3% formalin
4. Cryotherapy
5. Curettage and cautery
6. Imiquimod
7. Immunotherapy with DCP (diphencyprone)
MOLLUSCUM CONTAGIOSUM

- Common viral skin infection
- Pox virus
- Clusters of pink, white or brown papules in axillae, groin and behind knees
- Appear waxy and are umbilicated
- Spread by direct skin contact
- Commoner and more severe in atopic eczema and HIV
- May persist for months or years
MOLLUSCUM CONTAGIOSUM

Dermatitis

Scarring

Treatment

• Most cases no specific treatment is necessary
  • Surgery
  • Cryotherapy
  • Imiquimod
  • Salicylic acid or podophyllin
  • Crystacide – 1% hydrogen peroxide cream.
    Apply twice a day for three weeks
    In 2/3 patients, lesions had resolved
  • 5% Potassium Hydroxide
5% Potassium Hydroxide

- A double-blind, randomised, placebo-controlled trial of 20 children. In 70% of patients treated with potassium hydroxide the lesions cleared, whereas only 20% of the placebo group showed clearance of lesions. 
  Short et al. (2006).

- 20 children whose Molluscum contagiosum all cleared within 6 weeks using a 5% solution of potassium hydroxide
  Romiti et al. (2000)

- 29 children. 44% resolution after 2 months
  Ucmak et al 2014
Pilomatricoma

- Skin coloured, firm papule on head and neck usually
- Calcification within lesion – ‘tenting’ of overlying skin.
- Derived from hair matrix cells
Pilomatricoma Diagnosis

- Ultrasound shows a ‘doughnut’ in the dermis – a hyperechoic area with calcification within.

- Plain X ray
Pilomatricoma Treatment

- Treatment is surgical

- Lesions will not resolve spontaneously

- Very small risk of malignant change
Pilomatricoma Histology

- There are darkly stained ‘basophilic’ cells and ‘ghost’ cells with missing nuclei.
- Calcium deposits are found in most lesions.
EPIDERMAL NAEVUS

- 0.01% neonates
- Early lesions are macular
- Become hyperpigmented, papillomatous linear plaques
- Extensive lesions may be part of Epidermal Naevus Syndrome
- No treatment is required
- Excision is preferable to superficial treatments
- Malignant change is rare
DERMATOFIBROMA

- Firm, minimally elevated, pink to yellow brown papules or nodules
- 2mm to 20mm diameter
- Pinching of skin produces a ‘dimple’
- Benign tumour of dermal dendritic histiocytes
- Common on arms and legs at sites of minor injury i.e. insect bite
- Persistent
- Treatment is not usually required
GRANULOMA ANNULARE

• Skin-coloured or red, non-scaly, arciform or annular plaques with a beaded edge

• Ring can vary between 1 – 5 cm

• Single or multiple

• Dorsum of hands and feet common

• Develop slowly and persist for years

• Unknown aetiology

• Resolve spontaneously without scarring

• Generalised GA may be associated with diabetes mellitus

• Topical steroids may hasten resolution
Brown Skin Lesions in Children

- Benign naevus
- Becker’s Naevus
- Naevus Spilus
- Café au lait patch
CONGENITAL MELANOCYTIC
NAEVI

Multi – shaded pigmented patches, oval-shaped and uniform

Larger naevi have satellite lesions

Present at birth

Small – up to 1.5cm diameter

Medium – up to 10cm

Large – between 10 and 20cm

Giant – over 20cm – bathing trunk naevi

Common – 1 in 100 (small and medium)
RISK OF MELANOMA

- Small or medium naevi under 1%
- Giant Naevi – 5%
NEUROCUTANEOUS MELANOCYTOSIS

• Many congenital naevi with abnormal melanocytes in the central nervous system.
• Affects 10% patients with giant melanocytic naevi.
• MRI scan detects melanocytes
• Hydrocephalus
• Epilepsy
• Developmental delay
BECKER’S NAEVUS

• Solitary, unilateral
• Childhood, more prominent in adolescence
• Initial irregular macular pigmentation becoming darker and well demarcated
• Skin becomes thickened, hairy, comedones, papules and cystic nodules develop
• Upper quadrant of trunk or upper arm
• M:F 5:1
• Up to 15cm diameter
• Malignant transformation not reported
NAEVUS SPILUS

• A speckled lentiginous naevus with dark spots scattered on a flat tan background

• Occasionally occurs in neurofibromatosis

• Melanoma is rare – 1%

• Risk factors: >4cm diameter

• Present since birth
CAFÉ AU LAIT PATCHES

• Flat tan mark usually oval in shape
• Familial
• Six or more café au lait patches more than 0.5cm in diameter may indicate neurofibromatosis
Black Skin Lesions in Children

- Spindle cell naevus of Reed
- Melanoma
Spindle Cell Naevus of Reed

- Spindle Cell Naevus of Reed is a well defined heavily pigmented lesion.
- Often seen on the hands and feet.
Spindle Cell Naevus of Reed

- Dermoscopy:
  ‘Starburst’ pattern

- Histology:
  Characteristic nests of spindle-shaped cells with heavy pigmentation
Malignant Melanoma in Childhood

• Rare paediatric neoplasm
• 1 -3% of all childhood cancers
• 1 -4% malignant melanomas are in children and adolescents less than 20
• 7 x more frequent in 2nd than 1st decade
• Diagnosed at a thicker level than in adults – often a delay in diagnosis
• Same prognostic factors as adults
Blue Skin Lesions in Children

• Blue naevus
• Mongolian blue spot
• Blue rubber bleb syndrome
Blue Naevus

- Benign
- Blue because the melanocytes are deeper in the dermis
- Scalp, face, hands and feet
- Older children and adolescents
Dermoscopy Blue Naevus

- Uniform steel blue pattern
MONGOLIAN BLUE SPOT

• Blue–grey marking of the skin that usually affects the lower back and buttock region

• Few centimetres in diameter but can be larger

• Present at birth in more than 90% children of East Asians, Polynesians and Indonesians

• Aberrant Mongolian spots on face and limbs – can be confused with bruises

• Entrapment of melanocytes in dermis

• Usually disappear by the age of 4
Blue Rubber Bleb Naevus Syndrome

- Rare form of venous malformation with skin and gastrointestinal tract lesions
- Iron deficiency anaemia
- AD
- Compressible blue or purple rubbery nodules with a wrinkled surface
- Laser or sclerotherapy
White Skin Lesions in Children

- Milia
- Halo naevus
- Naevus depigmentosus
Milia

- Eyelids, cheeks, forehead and genitalia
- Histology: small epidermoid cyst coming from a vellus hair follicle.
- Resolve spontaneously - may take months
- Topical retinoids for widespread lesions, single lesions deroofed with sterile needle
Halo Naevus

- Autoimmune process against the melanocytes
- Older children
- Often multiple
- Trunk usually affected
- Central naevus disappears over months or years
- No treatment
Differential Diagnosis

**Halo naevus** – uniform depigmentation around benign naevus

**Regression in a melanoma**
- Irregular naevus with irregular depigmentation
Naevus Depigmentosus

- Well defined but irregular pale patch
- Usually noted at birth or early childhood
- Naevi remain stable over time.
- Trunk and limbs
- Cutaneous mosaicism
- Clone of melanocytes that are unable to form melanin
Yellow Skin Lesions in Children

- Sebaceous Naevus
- Mastocytoma
SEBACEOUS NAEVUS

- 0.3% neonates
- Solitary, yellowish, hairless, waxy, ovoid plaques on scalp
- 1-10cm diameter
- Thicken after puberty
- Basal cell carcinomas may arise
- Usually excised in early adulthood
MASTOCYTOMA

- Red, pink or tan nodules
- Up to 4cm in diameter
- Solitary or multiple
- May be pruritic and blister
- Increased mast cells in skin
- When rubbed produce an urticarial wheal – **Darier’s Sign**
- Resolve by adolescence
- **Urticaria Pigmentosa** – multiple mastocytomas
- Systemic mastocytosis is rare in children
Orange Skin Lesions in Children

- Juvenile Xanthogranuloma
JUVENILE XANTHOGRANULOMA

- Soft orange/pink dome shaped papules
- Head, neck, trunk and proximal limbs
- Single or multiple
- 15% present at birth
- 75% appear in first year
- Benign form of histiocytosis
- 0.5% have ocular involvement - glaucoma
- Resolve over 3-6 year period by puberty
- No treatment required
Juvenile Xanthogranuloma

- ‘Setting sun’ sign on dermoscopy
Which childhood lesions should be referred to secondary care?

• Any changing lesion
• Haemangiomas – ulcerated, bleeding or obscuring vision, hearing
• Port-wine stains
• Pyogenic granulomas
• ?Spitz naevi
• ?Pilomatricomas
• ?Mastocytomas
• ?Juvenile Xanthogranulomas
• ?Spindle Cell Naevus of Reed
• More than six café au lait patches