Case Report

# Ectodermal dysplasia in a pair of siblings

SM Wong MBChB MRCP and LC Loh MBChB MRCP

Dermatology Unit, Department of Medicine
University Malaya Medical Center, Kuala Lumpur

**Correspondence**
S M Wong MBChB MRCP
Dermatology Unit
Department of Dermatology
University Malaya Medical Centre
Kuala Lumpur
Email: suming1@yahoo.com

Ectoderrmal dysplasias are a heterogenous group of disorders, in which more than 150 different syndromes have been identified. It is defined by primary defects in the development of two or more tissues derived from embryonic ectoderm, characterized by abnormalities in the skin, sweat glands, hair, teeth and nails. Other parts, including the lens of the eye, parts of the inner ear, or nerves, may also fail to develop normally.

## Case Report

We report a case of a pair of siblings, X and her younger brother Y, aged 10 and 6 respectively. They were referred to the dermatology clinic for dry skin and eczema.

X was born in Hospital Kuala Lumpur and Y was born in the University Hospital. Y was initially referred to the geneticist because the doctors noticed he had skin problems and that his sister also had similar problems with characteristic physical features.

On further questioning, they both gave a history of lack of sweating. They also had multiple hospital admissions in the past for recurrent respiratory tract infections and asthma. Diagram 1 shows their family tree. Their parents were of consanguineous marriage. They had two other older siblings who were normal.

On physical examination, both revealed dry, eczematous skin. The hair was thin and sparse and the teeth were peg-shaped and reduced in number. The nails were normal and examination of the cardiovascular, respiratory and gastrointestinal systems were normal. (see Picture 1 & 2)

Together with the clinical findings, equally affected male and female siblings and the presence of consanguinity supported the diagnosis of hypohydrotic ectodermal dysplasia with an autosomal recessive mode of inheritance.

## Discussion

Ectodermal dysplasias (ED) have long been recognized as distinct entities and the description of affected individuals were first described by Darwin. They have been defined by the clinical characteristics and mode of inheritance.

Many ED syndromes have been identified. The more common ones include hypohidrotic EC, hidrotic ED, ankyloblepheron-ectodermal dysplasia-clefting (AEC) syndrome, ectodermal dysplasia-ectrodactyly-clefting (EEC) syndrome, Rapp-Hodgkin and Tooth and Nail (Witkop) syndrome[1]. They each have their own mode of inheritance and clinical features.

Hypohidrotic ectodermal dysplasia (HED) is the most common ED. It is also known as anhidrotic ectodermal dysplasia and Christ-Siemens-Touraine Syndrome. The incidence is approximately 1:100,000 live births and it occurs in all races and ethnic groups.

ED are often inherited as an X-linked disorder (XLEDA), but autosomal recessive and dominant forms are recognized[2]. The appearance of affected males and females in autosomal recessive HED is clinically indistinguishable from that seen in males with X-linked HED. Children with ED may be diagnosed at birth. But more often diagnosis is delayed until the teeth fail to erupt at the expected age (6-9 months) or the teeth that erupt are conical in shape.

Ectodermal dysplasias are caused by genetic defects in the ectodysplasin signal transduction pathway. This pathway is utilized by epithelial cells in the development of tooth, hair follicles and eccrine sweat glands. Therefore, genetic defects in this pathway result in aplasia, hypoplasia or dysplasia of these structures.
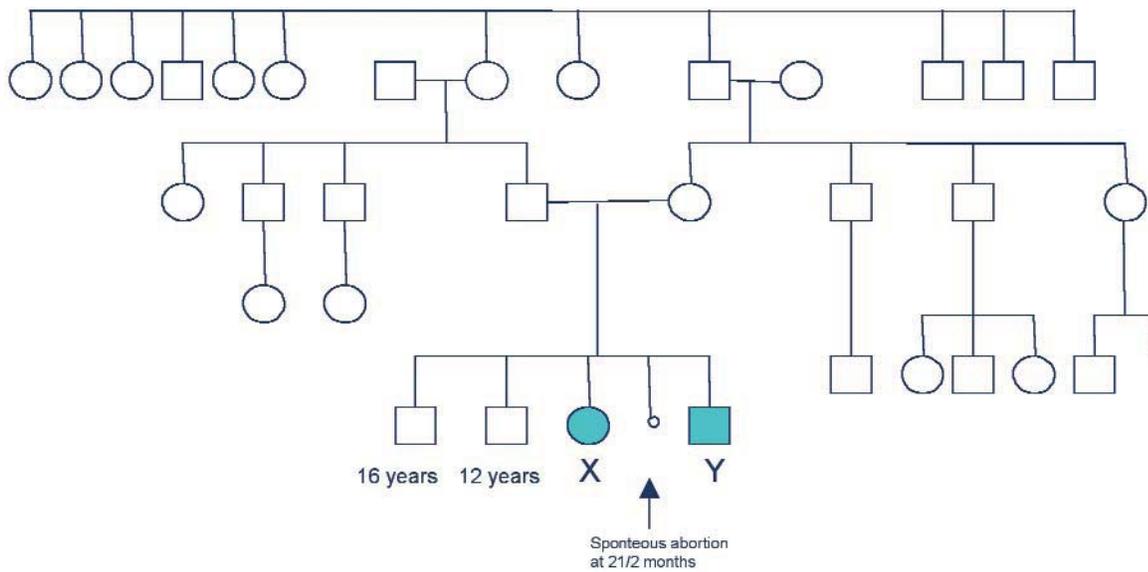
**Figure 1.**

**Figure 2.**



**Diagram 1.** Family tree



16 years    12 years    X    Y

Sponteous abortion
at 21/2 months

The genes involved, ED1 or EAD (which codes for the ligand, ectodysplasin) is associated with X-linked hypohidrotic ectodermal dysplasia (HED). It is located at Xq12-13 on the X chromosome[3]. 95% of individuals with HED have the X-linked form. The genes EDAR (ectodysplasin-A receptor) EDARADD (an intracellular adaptor protein), are associated with both autosomal dominant and recessive forms of HED. Mutation of these genes account for 5% of HED. In addition, defects in a gene NEMO (NF-__ essential modulator) is associated with HED and immunodeficiency[4].

Skin biopsy is not usually necessary for the diagnosis of HED. However, if biopsy were to be done, histologic findings would include a flattened and thinned epidermis, a reduction in hair follicles and sebaceous glands and eccrine glands which are incompletely developed or entirely absent.

The three cardinal features associated with ED include hypotrichosis (thin, sparse hair), hypohydrosis (absent or reduced sweating leading to inability to maintain core body temperature and consequently hyperpyrexia) and hypodontia (absent or reduced number of teeth). The teeth that are present are peg-shaped or conical. In addition, they may have dry skin and eczema, periorbital hyperpigmentation, saddle nose, frontal bossing5, full everted lips and brittle nails. They are also likely to have recurrent upper and lower respiratory tract infections due to thick nasal secretions. Hearing as well as ocular problems may also occur.

The management of patients with ED include taking a detailed medical history and family history. Careful examination of the affected individual, affected siblings and potential carriers for clinical manifestations of HED should be done. They should then be referred to a geneticist to aid in diagnosis and management.

Currently, no pharmacological treatment is available. The management of the affected individuals targets the three cardinal features and is directed at optimizing psychosocial development, establishing optimal oral function and preventing hyperthermia.

Wigs or special hair care formulas and techniques to manage dry, sparse hair may be useful. For hypohydrosis, ensure an adequate supply of water, and if possible, stay in a cool environment. This may mean being in an air-conditioned room, wearing a wet T shirt or having a spray bottle of water. For hypodontia, dental restoration, for example with dentures, should be offered, not only for good oral function but also for psychological and social reasons. They should be followed up by respiratory specialists and/or ENT specialists for asthma, recurrent infections and nasal concretions as well as getting appropriate dermatological care for dry skin and eczema. If appropriate, they should be linked with other individuals with ED and be referred to support groups where available.

## References

1. Bolognia J, Jorizzo JL, Rapini RP. Dermatology 2003 ed. Elsevier; p906-907.
2. Munoz F, Lestringant G, Sybert V et al. Definitive evidence for an autosomal recessive form of hypohidrotic ectodermal dysplasia clinically indistinguishable from the more common X-linked disorder. Am J Hum Genet 1997 Jul;61(1):94-100.
3. Mortier K, Wackens G. Ectodermal dysplasia anhidrotic. Orphanet encyclopedia. September 2004.
4. Wolff K, Katz LAG, Gilchrest BA. Fitzpatrick's Dermatology in General Medicine. 2008, 7th ed; p1339-1342.
5. Johnson ER, Roberts MW, Guckes AD et al.Analysis of craniofacial development in children with hypohydrotic ectodermal dysplasia. Am J Med Genet 2002;112:327-324.

## Case Report

# An unusual case of naevus of Ota and Ito associated with port wine stain

**Chong YT** MD, MRCP, **Tey KE** MD, MMed, MRCP **and Choon** SE MBBS, FRCP

Department of Dermatology
Hospital Sultanah Aminah
Johor Bahru

**Correspondence**
Dr. Chong YT, MD, MRCP
Department of Dermatology
Hospital Sultanah Aminah
80100 Johor Bahru, Johor, Malaysia
Email: cytusm@yahoo.com

Naevus of Ota is a dermal melanocytic pigmentary disorder that affects predominantly females. It occurs most frequently in Asian populations. Its association with naevus of Ito and a port wine stain is very rare. We report a rare occurrence of these three conditions in a male patient.

**Keywords** Naevus of Ota, Naevus of Ito, Port wine stain.

## Introduction

Naevus of Ota is a hamartoma of dermal melanocytes which appears clinically as a blue or grey discoloration on the face, occurring over the distribution of the ophthalmic and maxillary branches of the trigeminal nerve. Various benign cutaneous and leptomeningeal conditions, such as, naevus of Ito, phakomatosis pigmentovascularis, naevus flammeus, Sturge-Weber Syndrome, neurofibromatosis and leptomeningeal melanosis have been reported to occur in association with naevus of Ota.

We report a male patient with bilateral naevus of Ota and Ito in association with a port wine stain.

## Case Report

A 26-year-old Chinese man, with no previous medical problem, presented to our hospital with a complaint of frontal headache of two days duration. His blood pressure was found to be high during a medical check-up in a private clinic. He did not have any neurological symptoms such as dizziness, blurring of vision, vertigo, tinnitus, limb weakness or numbness. Systemic review was unremarkable. Clinically, his blood pressure was 180/110 mm Hg and his heart rate was 80 beats per minute. He had an ill-defined confluent bluish pigmentation on the face bilaterally in the distribution of the first and second branch of the trigeminal nerve. There was also a dark-red pigmented lesion noted over the left upper forehead, consistent clinically with port wine stain (fig 1). Dark brown discoloration was also noted over both sclera (fig 2). In addition, he has ill-defined bluish confluent pigmented lesion over the back of the shoulder

(fig 3). Cardio-respiratory, per abdomen and neurological examination did not reveal any significant findings. His visual acuity was good; however, detail eye examination was not done. His blood result did not reveal any abnormalities. Magnetic Resonance Imaging (MRI) and Magnetic Resonance Angiography (MRA) of the brain did not reveal any abnormalities either. He was diagnosed to have naevus of Ota and Ito with an associated port wine stain and no evidence of neurological involvement.

## Discussion

An oculodermal melanosis was first described by Hulkey in 1861[1], and similar lesion was also reported by Halbe in 1869[2,3]. In 1939, Ota further described several cases of pigmented nevus of the skin and eye and named them "nevus fuscoceruleus ophthalmomaxillaris of Ota"[4]. Nevus of Ota is a dermal melanocytic harmatomas that present as bluish or gray hyperpigmentation occurring along the ophthalmic (V1), mandibular (V2) and very rarely maxillary (V3) branches of the trigeminal nerve. The nevus of Ota occurs most frequently in Asian populations, with an estimated prevalence of 0.014-0.034%, as well as in Black persons and has a strong predilection to occur in females (male-to-female ratio of 1:4.8)[5,6]. In more than half of the patients, this condition is associated with "ocular melanocytosis" involving the conjuctiva, sclera, uveal tract and possibly the optic nerve[20]. Other extracutaneous involvement such as the oral and nasal mucosa, external auditory canal, tympanic membrane, meninges and the brain have been reported[7,8]. The dermal hyperpigmentation is usually noticed at birth, however, it may also develop or become noticeable only later in life. Hidano et al reported two peaks of onset, one during infancy and the second peak in the second decade[6]. Most cases of nevus of Ota are unilateral, although pigmentation is present bilaterally in 4-20%[1,9,14]. Tanino has further classified the nevus of Ota into four clinical types based on the distribution and various regions of involvement (table 1)[10].

**Figure 1.**



**Figure 3.**



**Figure 2.**



**Table 1.**   Types of naevus of Ota[1,10]

| Type 1 | IA. Mild orbital type: Distribution over the upper and lower eyelids, periocular and temple region. |
|--------|------------------------------------------------------------------------------------------------------|
|        | IB. Mild zygomatic type: Pigmentation is found in the infrapalpebral fold, nasolabial fold and the zygomatic region. |
|        | IC. Mild forehead type: Involvement of the forehead alone. |
|        | ID: Involvement of ala nasi alone. |
| Type 2 | Moderate type: Distribution over the upper and lower eyelids, periocular, zygomatic, cheek and temple regions |
| Type 3 | The lesions involve the scalp, forehead, eyebrow and nose. |
| Type 4 | Bilateral types: Both sides are involved. |

Nevus of Ito, initially described by Minor Ito in 1954, is a dermal melanocytic condition with similar feature as naevus of Ota, but it occurs over the shoulder, side of neck and supraclavicular areas in the distribution of the posterior supraclavicular and lateral cutaneous branchial nerves. The occurrence of both naevi of Ota and Ito in a patient is very rare[11]. There has been rare report of association of bilateral nevus of Ota with nevus of Ito[12].

Other cutaneous disorders and leptomeningeal conditions reported to occur in patient with nevus of Ota include phakomatosis pigmentovascularis, nevus flammeus, neurofibromatosis, leptomeningeal melanosis and Sturge-Weber syndrome[13].

Port wine stain is a capillary vascular malformation with an incidence of 0.3 percent[15]. Clinically, port wine stain appears as a pinkish red to deep purple homogenous congenital lesion with a geographic contour or a dermatomal distribution. Fifty percent of the capillary malformations are located in the face in the distribution of the trigeminal nerve[16]. Facial port wine stain is mainly unilateral and preferentially distributed over the maxillary branch of the trigeminal nerve[17]. Port wine stains of the eyelids, bilateral distribution of the birthmark, and unilateral lesions involving all three branches of the trigeminal nerve are associated with significant higher likelihood of having eye and/or central nervous system complications[18]. In combination with another vascular malformation, port wine stain can be part of a syndrome, such as Sturge-Weber, phakomatosis pigmento-vascularis, Klippel-Trenaunay or Servelle-Martorell[16].

Naevus of Ota, naevus of Ito and port wine stain can cause considerable cosmetic disfigurement to patients, occasionally resulting in emotional and psychological distress. There is a concern of elevated intraocular pressure and glaucoma in about 10% of patients with naevus of Ota[4,21]. Other risks include malignant melanoma[19,23] and meningeal melanocytoma[22].

The current treatment of choice for naevi of Ota and Ito is pulsed Q-switched laser surgery. It works by selective photodermal and photomechanical destruction of the dermal melanocytes and melanophages. Good success rate and minimal side effects have been reported with the Q-switched ruby, Q-switched alexandrite and Q-switched Nd:YAG lasers[24,25,26].

In summary, naevus of Ota occurs mainly in females, usually unilaterally distributed and is rarely associated with naevus of Ito or port wine stain. Our male patient who has all three features is extremely rare. Although port wine stain can be associated with other vascular malformation such as Sturge-Weber syndrome, we did not find any abnormality in his

central nervous system. However, he needs further eye evaluation to assess the extend of the ocular melanocytosis as well as periodic follow up to detect the possible association of increased intraocular pressure or glaucoma which can be as high as 10%.

## References

1. Sekar S, Kuruvila M, Pai HS. Nevus of Ota: A series of 15 cases. Indian J Dermatol Venereol Leprol. 2008; 74:125-8.
2. Hulke JW. Series of cases of carcinoma of the eye-ball (case 2), Ophthalmol Hosp Rep. 1861; 3:279-86.
3. Lee H, Choi SS, Kim SS, Hong YJ. A case of glaucoma associated with Sturge-Weber Syndrome and Nevus of Ota. Korean J Ophthalmol. 2001; 15:48-53.
4. Ota M. Nevus fuscoceruleus ophthalmomaxillaris. Tokyo Med J. 1939; 63:1243-1245.
5. Chan HH, Kono T. Nevus of Ota: clinical aspects and management. Skinmed. 2003; 2 (2):89-96.
6. Hidano A, Kajima H, Ikeda S, Mizutani, Miyasato H, Niimura M. Natural history of nevus of Ota. Arch Dermatol 1967; 95:187-195.
7. Bisceglia M, Carosi I, Fania M, Di Ciomo A, Lomuto M. Nevus of Ota. Presentation of a case associated with a cellular blue nevus with suspected malignant degeneration and revuew of literature. Pathologica 1997; 89(2):168-74.
8. Wilcox JC. Melanomatosis of skin and central nervous system. AJDC 1939; 57:391.
9. Teekhasaenee C, Ritch R, Rutnin U, Leelawongs N. Ocular findings in oculodermal melanocytosis. Arch Ophthalmol 1990; 108:1114-20.
10. Tanino H. Nevus fuscoceruleus opthalmomaxillaris Ota. Jpn J Dermatol 1939; 46:435-451.
11. Mukhopadhyay AK. Nevus of Ota associated with nevus of Ito. Indian J Dermatol Venereol Leprol 2004; 70:112-113.
12. Hidano A, Kajima H, Ikeda Y, Endo Y. Bilateral nevus of Ota associated with nevus of Ito. Arch Dermatol 1965; 91:357-9.
13. Recupero SM, Abdolrahimzadeh S, De Dominis M, Mollo R. Sturge-Weber syndrome associated with naevus of Ota. Eye 1998; 12(Pt 2):212-3.
14. Kaufmann R, Vranes M. Bilateral nevus of Ota, a case report. Z Hautkr 1986 Aug 15; 61(16):1152-8.
15. Jacobs AH, Walton RG: The incidence of birthmarks in the neonate. Pediatrics 58:218, 1976.
16. Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffel DJ. Fitzpatrick's Dermatology in General Medicine. McGraw-Hill, 7th ed., 2008;vol 2: page 1652-1666.
17. Bioxeda P, de Misa RF, Arrazola JM, Perez B, Harto A, Ledo A. Facial angioma and the Sturge-Weber syndrome: a study of 121 cases. Med Clin (Barc) 1993;101(1)1-4.
18. Tallman B, Tan OT, Morelli JG, Piepenbrink J, Stafford TJ, Trainor S, Weston WL. Location of port wine stains and the likelihood of ophthalmic and/or central nervous syytem complications. Pediatrics 1991;87(3):323-7.
19. Bisceglia M, Carosi I, Fania M, Di Ciommo A, Lomuto M. Naevus of Ota. Presentation of a case associated with cellular blue naevus with suspected malignant degeneration and review of the literature. Pathologica 1997;89(2):168-74).
20. Kono T, Kurome H, Shibuya Y, Hayasaka S. Ocular findings in Japanese women with naevus of Ota. Graefes Arch Clin Exp Ophthalmo 1995 Nov;233(11):667-71.
21. Liu JC, Ball SF. Naevus of Ota with glaucoma: report of three cases. Ann Ophthalmol 1991 Aug;23(8):286-9.
22. Rahimi-Movaghar V, Karimi M. Meningeal melanocytoma of the brain and oculodermal melanocytosis (naevus of Ota): case report and literature review. Surg Neurol 2003 Mar;59(3):200-10.

23. Patel BC, Egan CA, Lucius RW, et al. Cutaneous malignant melanoma and oculodermal melanocytosis (naevus of Ota): report of a case and review of literature. J Am Acad Dermatol 1998 May;38(5 Pt 2):862-5.

24. Watanabe S, Takahashi H. Treatment of naevus of Ota with the Q-switched ruby laser. N Eng J Med 1994 Dec;331 (26):1745-50.

25. Wang HW, Liu YH, Zhang GK, Jin HZ, Zuo YG, Jiang GT, Wang JB. Analysis of 602 Chinese cases of naevus of Ota and the treatment results treated by Q-switched alexandrite laser. Dermatol Surg 2007 Apr;33(4):455-60.

26. Chan HH, Leung RS, Ying SY, et al. A retrospective analysis of complications in the treatment of naevus of Ota with the Q-switched alexandrite and Q-switched Nd:YAG lasers. Dermatol Surg 2000 Nov;26(11):1000-6.

Case Report

# Lepromatous leprosy - The deceptive and the obvious

**Kader B Mohamed** MBBS Dip Derm

Department of Dermatology
Hospital Pulau Pinang
10990 Penang

**Correspondence**
Dr Kader B Mohamed
Department of Dermatology
Hospital Pakar Sultanah Fatimah
84000 Muar, Johor

Leprosy is a chronic granulomatous disease with which mankind has been struggling for thousands of years. It is a disease of the superficial nerves where the Mycobacterium leprae, the causative microbe, enters the Schwann cells and triggers a chain of immunological reactions. Although M. leprae was discovered by Armauer Hansen from Norway in 1872, we have yet to find a (in vitro) culture medium for its growth; we depend on animals such as mice, and armadillos for testing sensitivity pattern against antibiotics. If not detected early or reactions in leprosy are not identified promptly and managed adequately, patients can suffer severe deformities, disfigurement and be subjected to social stigma.

Awareness and suspicion are two elements necessary for early detection of leprosy. One patient who eluded the diagnosis of leprosy because of its resemblance to an important systemic disease and another with prominent clinical features walked around freely undetected in a busy metropolis are reported here to draw attention to this important chronic infectious disease.

## Case Report
### Case 1
A 45-year-old Chinese lady who was referred to us presented with an erythematous patch on the face for the past 1 year. The rash was bilateral, over the cheek, infraorbital and along the mandibular regious but not involving the nose (Figure 1). It was not itchy or warm. There were no pustules and the earlobes were seemingly normal. There were no systemic symptoms such as fever, fatigue, or myalgia. Since the rash was of 'butter-fly type'; she was extensively investigated for systemic lupus erythematosus (SLE) elsewhere with negative results. On examination, there was mild sensory impairment. The rash was mildly indurated. Slit skin smear for AFB was positive; B.I. 1.5+, M.I. 2.5% and skin biopsy confirmed lepromatous leprosy (LL). She also had thyroid enlargement and symptoms of thyrotoxicosis. Her thyroxine level was elevated. After checking for possible interaction between anti-thyroid and anti-leprosy drugs she was put on multidrug therapy (MDT) for multibacillary (MB) leprosy,

carbimazole and metoprolol. She was on combined follow-up with the medical unit for about 5 years when the smear became negative, thyroid function test were fairly restored and symptoms of target organs well under control. This patient was an example of non-noduler, diffuse infiltrated lepromatous leprosy.

### Case 2
A 50-year-old Chinese woman presented with indurated, nodular plaque-like lesions on the face of 2 years duration (Figure 2). The lesions were distributed over the chest, and lower limbs. The appearance was very suspicious of leprosy but sensation was intact. Slit skin smear for AFB was strongly positive. B.I. 2.5+, M.I. 3.5%. Fite-Faraco stain of the skin biopsy specimen showed the bacilli in globi. She was treated with MDT for MB leprosy.

## Discussion
A common misconception among the non-dermatologists is that in leprosy, there should be impaired or loss of sensation at the time of presentation. It must be emphasized here that in tuberculoid leprosy sensory involvement is early; in lepromatous type it is late and therefore in LL, in the early stage, cotton-wool and pin-prick tests may be normal. This author has reported few diseases which resemble leprosy such as granuloma multiforme, epidermolysis bullosa (dystrophic type), and mycosis fungoides (nodular type)[1]. In pre-senile hyperplasia of the sebaceous glands, the facial skin can be thrown into folds, ear-lobes red and thickened and fore-head in wrinkles resembling leonine facies[2]. Seldom do we see patients with leprosy who do not seek advice early, go into reactional state (upgrading) without treatment, with swelling of the lips face and the skin diffusely erythematous Sometimes, patients can present with a histoid type of leprosy (Figure 3). In lepromatous leprosy the lesions are more extensive, nodular and erythematous, since the immunity is low. But single lesion of lepromatous leprosy has been documented[3].

**Figure 1.** Facial erythema involving the right side. Note the ear-lobe



**Figure 2.** Nodular lesions of LL on the face. Note the thickened ear-lobe



**Figure 3.** Histoid leprosy. This patient with chronic renal failure presented with nodular lesions on the face, trunck and limbs. Smear for AFB was positive. Skin biopsy showed spindle-shaped macrophages arranged whorl pattern. This type of leprosy was described by Wade. Note the annular borderline lesion at the back of the left arm



Although the prevalence of leprosy has reduced, the dream of eliminating the disease is far ahead. One of the the greatest achievement of medicine is the eradication of small-pox. Can that goal be reached?

First of all we should expose medical students to this subject[4]. While patients resembling leprosy receive anti-leprosy treatment, patients with leprosy are not detected early and do not get the treatment. This paradoxical situation should change. In prevalent countries any patient with thickening of the ear lobes should evoke suspicion of leprosy; the other conditions which should be borne in mind are lymphoma and cutaneous leishmaniasis.

## References

1.  Mohamed KB. Dermatological disorders resembling leprosy. Sing Med J. 1989; 30:265 - 268
2.  Mohamed KB. Facial Lesions resembling leprosy. Int J Lep 2001; 71:35-37
3.  Mohamed KB. A dough-nut shaped facial lesion in lepromatous leprosy. Br J Dermatol 1998;138:560-561
4.  Kawuma JH. Reflections of Global Forum on Leprosy Control. Lepr Rev 2006;77:172-174

Case Report

# Cutis laxa associated with xanthogranuloma

KE Tey MD MRCP MMed AM and SE Choon MBBS FRCP AM

Department Of Dermatology
Hospital Sultanah Aminah, Johor Bahru

**Correspondence**
KE Tey MD MRCP MMed
Department Of Dermatology
Hospital Sultanah Aminah
Johor Bahru, 80100 Johor
Email: ketey08@yahoo.com

Cutis laxa (CL) is a rare inherited or acquired connective tissue disorder in which the skin becomes inelastic and hangs loosely in folds. Autosomal dominant, autosomal recessive and X-linked recessive forms have been described. In both the inherited and acquired types, the internal organs are frequently involved. We describe a 2-year-old girl with congenital cutis laxa, presenting with multiple xanthogranulomata.

## Case Report

A 2-year-old Malay girl was referred to us in August 2004 with multiple skin nodules of 2 months duration. She was delivered full term in the breech position, and was a product of a non-consanguineous marriage. Her birth weight was 2.6 kg , and she was hairless at birth. She was noted to have wrinkled skin since the age of seven months. Her motor developmental milestones were markedly delayed. She could only sit with support at the age of 14 months, and she could not even walk by the age of two years. She had failure to thrive, and experienced poor weight gain since birth. Her other family members, including a 3-year old sister were normal, but her paternal great-grandfather had multiple similar skin lesions during his youth.

Two months prior to referral, she developed multiple nodules on her abdomen, back and right cheek.

Examination revealed a thin and emaciated baby girl weighing only 5.6kg. She possessed sparse hair, with gross laxity of facial skin and sagging cheeks. Bluish discoloration of both nasal ala was noted. (Fig1). As a result of excessive wrinkling, she appeared older than her chronological age. There were crusted, moderate-sized discrete nodules on her right cheek, abdomen and back. Her skin was generally loose and inelastic, with excessive wrinkles. (Fig 2 ) Chest examination revealed pectus carinatum. On auscultation, crepitations and rhonchi were present, but no murmur was noted. She had bilateral inguinal hernia. She was maintained on continuous bladder drainage for urinary incontinence. Bilateral foot drop was noted.

She received an initial clinical diagnosis of Hutchinson Gilford syndrome with squamous cell carcinoma, with differential diagnosis of Cutis laxa and Ehlers Danlos syndrome. The differential diagnosis of skin nodules includes keratoacanthoma, dermatofibroma protuberance , squamous cell carcinoma and basal cell carcinoma.

Her blood count revealed mild anaemia with haemoglobin of 9.6 g/dl and leucocytosis. Chest x-ray showed pneumonic changes but no evidence of emphysema or bronchiectasis. Magnetic resonance brain imaging revealed generalized cerebral atrophy.

Other investigations including liver function test, renal function and serum cortisol were normal. Serology tests for syphilis, HIV, and Hepatitis B were non-reactive.

Skin histology from the wrinkled skin showed reduction and fragmented elastic fibres consistent with a diagnosis of cutis laxa. The skin nodules were excised, and histology was reported as xanthogranuloma. The excision wound healed with a normal scar (Fig 3). The parents were informed about the diagnosis. The patient died at home after discharge from hospital in December 2004.

## Discussion

Cutis laxa (CL) is an uncommon disorder of generalized elastolysis in which the skin becomes inelastic and hangs loosely in folds, resulting in the appearance of premature aging. It may be inherited or acquired. Inherited forms of CL are more common. Autosomal dominant, autosomal recessive and X-linked recessive forms have been described.

The autosomal recessive form is the most frequent and also the most severe. It is often associated with severe internal complications, such as genitourinary and gastrointestinal diverticula, diaphragmatic hernia, and emphysema leading to cor pulmonale and death in the first few years of life. Recently, a serine to proline amino acid substitution in the fibulin 5 (FBLN5) gene has been associated with problems in normal elastogenesis, resulting in a recessive form of CL in humans[1].

**Figure 1.** Sparse hair, gross laxity of facial skin with sagging cheek, bluish discoloration of ala nasi. Xanthogranuloma R cheek



**Figure 2.** Generalized loose , inelastic skin with excessive wrinkles



**Figure 3.** The excision wound healed with normal scar



Our patient presented as early as 7 months of age with excessively wrinkled skin, delayed developmental milestones, multiple xanthogranulomata, bilateral inguinal herniae and genitourinary system involvement. The severity of involvement and rapid progression of her disease resembled the autosomal recessive form of congenital CL. Her magnetic resonance brain scan revealed cerebral atrophy, suggesting probable cerebral dysgenesis. Although there was no consanguinity and no documented family history of similar disease, we postulated gene mutation as the cause for CL in this patient. Unfortunately, genetic studies of both parents and patient were unavailable.

The X-linked recessive variant of CL is rare, with skin laxity and skeletal and genitourinary tract abnormalities. X-linked CL is identical to Ehlers-Danlos syndrome type IX, and both conditions are now known as the occipital horn syndrome.

The autosomal dominant form of CL has a later onset than the autosomal recessive form. This runs a benign course; skin involvement is present, with few, if any systemic complications, and a normal life expectancy.

Our patient presented with features compatible with premature aging syndrome that led to the clinical differential diagnosis of Hutchinson Gilford syndrome, CL and Ehlers Danlos syndrome. Hutchinson Gilford syndrome presents with premature aging, sclerodermatous skin, hair loss and early development of multiple squamous cell carcinomata. The diagnosis of Hutchinson Gilford syndrome became unlikely in our patient as skin histology from the nodules was reported as xanthogranulomata. Patients with Ehlers Danlos syndrome have generalized loose inelastic skin which is fragile, easily bruised, and heal poorly. The excision wound in our patient healed nicely, which favored the diagnosis of CL clinically. This was finally confirmed with skin histology, which showed a reduction and fragmented elastic fibres.

Acquired CL often begins in adulthood . Fifty percent of acquired CL cases are associated with a preceding inflammatory eruption, such as eczema, erythema multiforme, urticaria or vesicular eruption, as well as reactions to penicillin or other drugs. The patient may have fever, malaise, and leukocytosis. The cutaneous laxity that follows is confined to areas of previous inflammation.

Patients with Wilson's Disease are at particular risk because of the elastolytic effects caused by long-term use of high doses of the copper chelation agent penicillamine[2].

Acquired CL can also occur in association with systemic lupus erythematosus, complement deficiency (C3 and C4), sarcoidosis[3], multiple myeloma[4,5,6], and systemic amyloidosis[7]. More recently, a case of CL has been associated with immunoglobulin G (IgG)-4 heavy-chain deposition disease of the kidneys[8]. Visceral involvement which includes the lungs, the gastrointestinal tract, the heart and the urogenital system, is common in acquired CL.

Recent studies have shown that several factors, including copper deficiency, lysyl oxidase, elastases and elastase inhibitors contribute to abnormal elastin degradation[9]. Lysyl oxidase, a copper-dependent enzyme, is important in the synthesis and cross-linking of elastin and collagen. Therefore, low levels of serum copper could lead to diminished elastin synthesis. However, only a few patients with CL have demonstrated low serum copper levels. Defective copper utilization may also lead to decreased activity of elastase inhibitor alpha-1 antitrypsin, resulting in destruction of elastic fibers.

No specific histological abnormality is seen on routine stains with hematoxylin and eosin. On elastic fiber stains, all types of CL show a reduction in the number of elastic fibers throughout the dermis, with remaining fibers being shortened, clumped, granular, or fragmented. In severe cases, no elastic fibers may be present, but only fine, dust-like particles scattered throughout the dermis can be seen. There is no effective treatment currently to prevent disease progression. Surgical correction of excessive skin folds, prolapses, or hernias produce only temporary benefit.

Botulinum toxin injections are being considered for improving the aged appearance and dysmorphisms seen in persons with CL[10]. CL increases the risk for aortic aneurysms, so regular cardiology follow-up is recommended to avert a potentially fatal aortic rupture.

## References

1.  Loeys B, Van Maldergem L, Mortier G, Coucke P, Gerniers S, Naeyaert JM, et al. Homozygosity for a missense mutation in fibulin-5 (FBLN5) results in a severe form of cutis laxa. Hum Mol Genet. Sep 1 2002;11(18):2113-8.
2.  Hill VA, Seymour CA, Mortimer PS. Pencillamine-induced elastosis perforans serpiginosa and cutis laxa in Wilson's disease. Br J Dermatol. Mar 2000;142(3):560-1.
3.  Lewis FM, Lewis-Jones S, Gipson M. Acquired cutis laxa with dermatitis herpetiformis and sarcoidosis. J Am Acad Dermatol. Nov 1993;29(5 Pt 2):846-8.
4.  Ting HC, Foo MH, Wang F. Acquired cutis laxa and multiple myeloma. Br J Dermatol. Mar 1984;110(3):363-7.
5.  McCarty MJ, Davidson JM, Cardone JS, Anderson LL. Cutis laxa acquisita associated with multiple myeloma: a case report and review of the literature. Cutis. Apr 1996;57(4):267-70.
6.  Gupta A, Helm TN. Acquired cutis laxa associated with multiple myeloma. Cutis. Feb 2002;69(2):114-8.
7.  Newton JA, McKee PH, Black MM. Cutis laxa associated with amyloidosis. Clin Exp Dermatol. Jan 1986;11(1):87-91.
8.  Tan S, Pon K, Bargman J, Ghazarian D. Generalized cutis laxa associated with heavy chain deposition disease. J Cutan Med Surg. Sep-Oct 2003;7(5):390-4.
9.  Khakoo A, Thomas R, Trompeter R, Duffy P, Price R, Pope FM. Congenital cutis laxa and lysyl oxidase deficiency. Clin Genet. Feb 1997;51(2):109-14.
10. Tamura BM, Lourenço LM, Platt A, Pertel P, Santos LF, Levites J. Cutis laxa: Improvement of facial aesthetics by using botulinum toxin. Dermatol Surg. Dec 2004;30(12 Pt 2):1518-20.

Case Report

# Pyoderma gangrenosum associated with malignancy: A report of three cases

**Huma K, KE Tey** MD MRCP MMed AM **and SE Choon** MBBS FRCP AM

Department Of Dermatology
Hospital Sultanah Aminah, Johor Bahru

**Correspondence**
Dr Huma Khurrum
Department Of Dermatology
Hospital Sultanah Aminah, Johor Bahru
Email : dr_hkaf4@yahoo.com

Pyoderma Gangrenosum (PG) is a rare, painful and often rapidly-progressive ulcerative cutaneous condition[1]. Fifty percent of cases are associated with underlying diseases[2].

The associated underlying disease may occur prior to, concurrently with or following PG. About 7% may have an associated underlying malignancy[5]. Leukemia, usually acute myeloid leukemia and chronic myeloid leukemia are the malignancies most commonly reported. Three cases of pyoderma gangrenosum associated with malignancies are described.

## Case Report

### Case 1
A 58-year-old Malay man, a chronic smoker, with no significant past medical history presented in June 1993 with a one month history of recurrent, multiple, non healing painful ulcers on both legs.

He did not have fever or other constitutional symptoms. He had no significant bowel or urinary symptoms or any weight loss. There was no history of trauma or insect bite. His family and social history were non contributory.

The initial skin lesion was a boil on the right leg which broke down rapidly and became ulcerated. Other similar lesions began to develop on his body subsequently. He was admitted to the ward several times for recurrent painful ulcers and has been treated with multiple broad spectrum antibiotics. On examination, there were multiple ulcerated plaques with red beefy base on the chest and arms (Fig 1). Cribriform hypertrophic scarring of previous ulcers were seen on both upper limbs and face. There was no lymphadenopathy or organomegaly.

Biopsy of ulcer showed non specific inflammation. There was no evidence of vasculitis although some perivascular inflammation was present (Fig 2). Cultures for mycobacterium and subcutaneous fungal infections were negative. Investigations including a full blood count, liver function test, renal profile, antinuclear factor, rheumatoid factor were normal. Serology tests for syphilis, HIV, and Hepatitis B and C were non-reactive. Screening for underlying malignancies including serial chest x rays, tumor markers, endoscopy, colonoscopy were unremarkable.

He was diagnosed to have pyoderma gangrenosum and treated intermittently with dapsone and prednisolone for each episode of eruptions. The ulcers healed with multiple disfiguring scars. In June 2004, he developed multiple ulcers on the chest wall. On repeated chest X ray in early 2005, an opacity was noted in right mid zone which was treated initially as pneumonia but the lesion did not resolve with antibiotics.

Subsequent chest X ray, done after two months showed the mass becoming more pronounced. CT scan thorax revealed a definite mass in right lateral segment of middle lobe, suggestive of carcinoma of the lung.

Histopathology of the lung tissue was reported as adenocarcinoma of lung. He was referred to the oncology team for further management.

### Case 2
A 58-year-old Chinese woman was referred to us by the Hematology Department in March 2005, for multiple skin lesions on both wrists and left ankle of one week duration. She was known to have myelodysplastic syndrome diagnosed in Feb 2005 and was on chemotherapy.

She presented with a one-month history of painful, enlarging ulcer on both wrists and left ankle. The skin lesion started as a small blister which rapidly enlarged and became ulcerated over two to three days. She was febrile, pale and emaciated. She had multiple cervical and axillary lymphadenopathy.

Three skin lesions were noted on the left ankle, and left and right wrists, measuring 7x6 cm, 5x4 cm and 5x5 cm respectively (Fig 3). Skin lesions were characterized by ruptured bullae and, ulcerated plaques with sloughing base. The edges were violaceous with surrounding erythema.

On histopathology, intraepidermal bullae, filled with nuclear debris and neutrophils were noted. The dermis was heavily infiltrated with neutrophils, some mononuclear cells and red blood cells. It was consistent with pyoderma gangrenosum.

She was treated with IV methylprednisolone 500 mg. The skin lesions improved after 2 weeks of high dose steroids, following which steroids were tapered.

**Case 3**

A 50-year-old Chinese man was diagnosed to have carcinoma of the lung in August 2002. Eight months later, he presented to us with pustular skin lesions on both wrists of one week duration. It evolved rapidly into ulcerated lesions. Examination revealed a thin, emaciated and pale gentleman with generalized lymphadenopathy. There was decreased breath sounds on the right side of the chest.

There were multiple ulcerated plaques with purplish edge and central haemorrhagic crusts, on the dorsal aspects of both hands. Other systems were unremarkable. On tissue histopathology, subcorneal bullae with underlying dermis containing areas of necrosis, debris and acute inflammatory cells were noted. The lower dermis showed presence of periappendageal and perivascular chronic inflammatory cells. There was no evidence of malignancy.

**Figure 1.** Pyoderma gangrenosum. Showing beefy red ulcers with hypertrophic margins



**Figure 2.** Histopathology of skin biopsy specimen
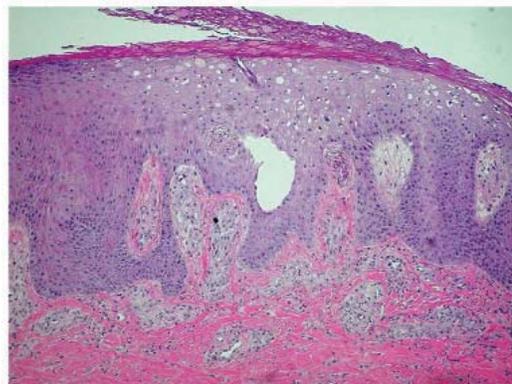
**Figure 3**.  Ruptured bullae, ulcerated plaques with slough  & violaceous undermined edges and surrounding erythema



He was diagnosed to have pyoderma gangrenosum. He was treated and responded well to a tapering dose of prednisolone.

## Discussion

PG was first described in 1930 by Brunsting et al[1]. Pyoderma Gangrenosum is a destructive necrotising, non infective ulceration of the skin which presents as a furuncle-like nodule, pustule or haemorrhagic bulla. Incidence is reported as 1 in 100,000 people/year in United States. Pathergy, induced by trauma to the skin of susceptible persons, is reported in 25% of patients[7]. It manifests clinically as deep painful subcutaneous nodule, pustules, ulcers or bullae.

Four types of PG have been described and this includes ulcerative, vegetative, pustular  and bullous type.

The cause is unknown. In half of the cases, it is reported as idiopathic[2], while in 50% of cases, it is associated with ulcerative colitis, Crohn's disease, rheumatoid arthritis, seronegative polyarthritis and monoclonal gammopathy. It is rarely associated with chronic active and persistent hepatitis, Behcet's disease and internal malignancies. It has been reported in patients with polycythemia vera, postoperative states, immunocompromised states and Wegener's granulomatosis[2].

The associated underlying disease may occur prior to, concurrently with or following PG.

The first case was followed up for about twelve years. He had multiple episodes of pyoderma gangrenosum before he developed the carcinoma of lung. Our second patient already had myeloproliferative disorder when she developed PG at the same time. Our third case was known case of lung carcinoma, developed PG after eight months of his primary illness. Therefore, it is quite interesting to establish the link between onset of PG and underlying disease in three of our cases.

There is 7% malignant disease association[5]. Leukemia, usually acute myeloid leukemia and chronic myeloid leukemia are the most commonly reported malignancies[6]. Bullous PG is the most commonly reported variety. Ulcerative type of PG is noted with myeloma (IgA type) and Walderstrom's macroglobulinemia. Other reported associations were myelofibrosis, lymphomas and solid tumours[5].

The diagnosis is made by exclusion. Histopathologic findings are not specific but crucial to rule out other causes of skin ulcers. Differential diagnosis can be infection, insect bite or contact dermatitis[8].

There is no specific treatment. In patients with an associated underlying disease, the effective therapy of the associated condition may be associated with a control of the cutaneous process as well[2,7]. No specific randomized clinical trial has been done but the gold standard in treatment is systemic corticosteroids. Steroid sparing agents such as dapsone, cyclosporin or azathioprine may be used. Local treatment includes corticosteriod (intralesional), cyclosporin (topical, intralesional), tacrolimus (topical, intralesional), macrophage colony stimulating factors (intralesional) and  skin grafts.

# References

1. Brunsting LA, Goeckerman WH, O'Leary PA. Pyoderma (ecthyma) gangrenosum: clinical and experimental observations in five cases occurring in adults. Arch Dermatol Syph 1930;22:655-680.
2. Schwaegerle SM, Bergfeld WF, Senitzer D, Tidrick RT. Pyoderma gangrenosum: a review. J Am Acad Dermatol 1988;18:559-568.
3. Fitzpatrick TB,et al sixth edition, chapter 98.
4. Von Den Driesh P: Pyoderma gangrenosum: A report of 44 cases with follow up. Br J Dermatol 1997;137:1000-1005.
5. Jacobs P, Palmer S, Gordon-Smith EC: Pyoderma gangrenosum in myelodysplasia and acute leukaemia. Postgrad Med J 1985;61:689-694.
6. Lewis SJ, Poh-Fitzpatrick MB, Walther RR: Atypical pyoderma gangrenosum with leukemia. JAMA 1978;239:935-938.
7. Powell FC, Schroeter AL, Su WPD, Perry HO. Pyoderma gangrenosum: a review of 86 patients. Q J Med 1985;55:173-186.
8. Weenig RH, Davis MD, Dahl PR, Daniel Su WP: Skin ulcers misdiagnosed as pyoderma gangrenosum. N Engl J Med 2002;347(18):1412-1418.

Case Report

# Incontinentia pigmenti: Report of 3 cases from Sarawak

**Leong KF[1]** MBBS MRCPCH**, Pubalan M[2]** MBBS MRCP **and Yap FBB[2]** MD MRCP

[1]Paediatric Institute, Kuala Lumpur General Hospital
[2]Department of Dermatology, Sarawak General Hospital
Jalan Hospital, 93586 Kuching, Sarawak

**Correspondence**
Dr Felix BB Yap
Department of Dermatology
Sarawak General Hospital

**Keywords** Incontinentia Pigmenti, X linked dominant, Blaschko's line

Incontinentia pigmenti, also known as Bloch-Sulzberger syndrome, is a rare X- linked dominant multisystem disease involving ectodermal structures namely cutaneous, ocular, dental, neurological and skeletal systems[1]. Mutation of the nuclear factor kappa B essential modulator (NEMO) gene in chromosome Xq28 is determined to cause this rare genodermatosis[2]. The cutaneous manifestations are the most characteristic features of this disorder[3]. We would like to report 3 cases of incontinentia pigmenti seen in the skin clinic, Sarawak General Hospital.

## Case Report

### Case 1
A newborn Malay girl was admitted to the nursery in 2005 with vesicular skin eruption distributed along the Blaschko's lines, more prominent on the left side of the body, sparing the nails and mucous membrane (Figure 1a). The lesions evolved into verrucous lesions and later into hyperpigmented macules few months later. At 18 months follow up, vertex alopecia and peg teeth were noted; without eyes or neurological abnormalities and normal developmental milestones. She has 3 elder sisters with similar skin lesions and dental abnormalities, with one having alopecia (Figure 1b). No parental consanguinity was noted. No skin biopsy was performed but we noted high blood eosinophils count in the first week of life.

### Case 2
A newborn baby girl was referred to the dermatology unit in 2006 for vesicular lesions along the Blaschko's lines bilaterally associated with hypereosinophilia. The lesions progressed to whorled, macular and linear hyperpigmentation in the next few months (Figure 2). She had no dental, neurological and opthalmological abnormalities at 8 months follow up. Her developmental milestones were normal. No skin biopsy was done.

### Case 3
A 3-month-old Iban girl was referred in June 2008 for vesicular and verrucous hyperpigmentation along the Blaschko's lines, predominantly right sided (Figure 3). She was born full term to a non-consanguineous parent and had bullous lesions since birth. No family history was elicited. Her mother never had any abortion or miscarriage before this. None of her other family members from both her maternal and paternal sides have these skin abnormalities. No skin biopsy was done for her. She also had hypereosinophilia.

## Discussion
Incontinentia pigmenti is an X-linked dominant genodermatosis seen almost exclusively in females. The mutation in the NEMO gene is lethal for affected males, usually resulting in abortion of male foetuses[2]. The affected females survive because of lyonisation[3]. Female carriers will usually have a distorted sex ratio of 2 females to 1 male offspring[2]. Up to half the cases are spontaneous mutation[4].
In 1993, Landy and Donnai recommended a diagnostic criteria for the disorder[5]. They recommended that for sporadic cases, a diagnosis of incontinentia pigmenti can be made if one or more of the three major criteria is present. The major criterias are typical neonatal vesicular rash with eosinophilia; typical blaschkoid hyperpigmentation in adolescence; and linear atrophic hairless lesions. For those with at least one positive first degree female relative, diagnosis can be made with minor criterias. The minor criterias include dental anomalies, alopecia and wooly hair. All three patients we presented fulfilled the criteria.

The cutaneous manifestations of incontinentia pigmenti are classically described in 4 sequential stages[1,3,4]. Stage 1 is the vesicular or inflammatory stage with linear vesicles, pustules and bullae along the Blaschko's line usually seen at birth. Stage 2 is the verrucous or proliferative stage characterised by warty keratotic papules and plaques usually seen between

**Figure 1a**



**Figure 1b**



**Figure 2**



**Figure 3**



the ages of 2 to 8 weeks. Stage 3 is the hyperpigmented stage manifested by macular hyperpigmentation in a swirled pattern along the lines of Blaschko seen between ages 12 and 40 weeks. The final stage, stage 4 is the hypopigmented stage characterised by hypopigmented streaks and patches and cutaneous atrophy seen from infancy through adulthood.

All these stages might occur simultaneously, in sequential order or overlap with each other. Any stage can present as an initial presentation1. In Singapore, 54% of patients had coexistence of 2 or more stages simultaneously and 14% had whorled pigmentation as the initial and solitary clinical presentation[3].

Case 1 illustrates the typical progression of the disease from the vesicular stage at birth progressing to the verrucous and later hyperpigmented stage. Case 2 did not have the verrucous stage. Meanwhile, case 3 presented with overlapping bullous and verrucous stage. All our cases have yet to manifest stage 4.

Hair abnormalities are noted in 40% of patients[1]. The most common anomaly is alopecia usually with scarring. Dental anomalies occur in 70% of patients, affecting both the deciduous and permanent teeth. The most common abnormalities include missing teeth, small teeth, abnormally-shaped teeth such as peg or conical teeth, and delayed eruption of both deciduous and permanent teeth. Case 1 and her siblings showed these anomalies.

Ocular anormalities is seen in one third of patients and includes retinal and nonretinal findings[1]. Nail dystrophy is seen in 40-60% of affected individuals[4]. Neurological abnormalities are the most disabling manifestation of incontinentia pigmenti. It is seen in 10% to 40% of patients. The manifestations include seizures, mental retardation, spasticity, hemiparesis, and encephalopathy[1,4]. We have yet to detect such anomalies in our patients and will vigilantly look for them during their subsequent follow up.

Blood investigations reveal eosinophilia in a third of cases[4]. Skin biopsy findings depend on the stage of the disease. Stage 1 shows eosinophilic spongiosis; stage 2 shows papillated epidermal hyperplasia; stage 3 reveals thickened papillary dermis, many melanophages, deposits of melanin in the dermis, and vacuolar alteration of epidermal basal cell layer; and stage 4 has increased melanin in the upper dermal layers, hyperkeratosis, acanthosis, atrophy, scarring, and an absence of skin appendages[1,4]. All our case had hypereosinophilia but did not have a skin biopsy.

No specific treatment is available for incontinentia pigmenti[1,3,4]. Prevention of infection in stage 1, good dental hygiene and meticulous dental intervention for dental anomalies and neurological consultation for patients with neurological complications is needed. Genetic counselling should be offered for affected families.

## References

1. Francis JS, Sybert VP. Incontinentia pigmenti. Semin Cutan Med Surg 1997; 16: 54-60.
2. Smahi A, Courtois G, Vabres P, et al. Genomic rearrangement in NEMO impairs NF-kappaB activation and is a cause of incontinentia pigmenti. The International Incontinentia Pigmenti (IP) Consortium. Nature 2000; 405: 466-72.
3. Chan YC, Giam YC. A retrospective study of incontinentia pigmenti seen at the National Skin Centre, Singapore over a 10 year period. Ann Acad Med Singapore 2001; 30: 409-13.
4. Chang CH. Incontinentia pigmenti. eMedicine 2007.
5. Landy SJ, Donnai D. Incontinentia pigmenti (Bloch-Sulzberger syndrome). J Med Genet 1993; 30: 53-9.

Case Report

# Primary cutaneous anaplastic large cell lymphoma in a young woman

**Yap FBB** MD MRCP **and Pubalan M** MBBS MRCP

Department of Dermatology
Sarawak General Hospital
Jalan Hospital, 93586, Kuching, Sarawak

**Correspondence**
Dr Felix BB Yap
Department of Dermatology
Sarawak General Hospital
Jalan Hospital , 93586 Kuching
Email: woodzlamp@yahoo.com

Primary cutaneous anaplastic large cell lymphoma (ALCL) constitutes around 1% of all cutaneous lymphomas[1]. It is defined as predominance (>75%) of large clusters of CD 30+ blast like cells in the skin biopsy with no clinical evidence of lymphomatoid papulosis, extracutaneous localization at presentation or previous or concurrent mycosis fungoides or other cutaneous lymphoma[2]. It is usually seen in males with a median age of 40 years[3]. It classically presents as a solitary ulcerated tumour on the trunk or extremities. Twenty two percent of cases are multifocal[3]. Extracutaneous dissemination occurs in approximately 10%, mainly to regional lymph nodes[3]. Skin restricted disease has an excellent prognosis with 96% 5 year survival[4].

Here, we report a case of primary cutaneous anaplastic large cell lymphoma (ALCL) in a 32-year-old woman.

## Case Report

A 32-year-old Chinese woman presented with one year history of an ulcerated nodular lesion on her right mid thigh. It started as a small papule which progressively enlarged and ulcerated. She was seen by her general practitioner who did a skin biopsy which was reported as pseudolymphoma. She failed to respond to topical corticosteroids. She was then referred to us for further management. There was no significant past medical history.

Examination of the skin showed an irregular nodular lesion on her right mid thigh measuring 16 x 13 cm with an overlying ulceration measuring 5 x 4 cm at one end, with a foul smelling discharge. There were satellite lesions measuring 1 x 1 cm surrounding the tumor (Figure 1). Two 3 x 2 cm erythematous plaque lesions on her left forearm and back were also noted. There was no significant lymphadenopathy.

A 6 mm punch biopsy done showed diffuse dermal infiltration by large neoplastic cells with no epidermotropism. These neoplastic cells had abundant eosinophilic cytoplasm with large horseshoe nuclei and prominent nucleoli (Figure 2 and 3). Frequent mitoses were noted. The whole dermis and panniculus were infiltrated by these cells. Immunohistochemistry showed prominent staining with CD 30 (80%) and Leukocyte Common Antigen (60%). Staining for CD3, CD8, CD 20, anaplastic large cell lymphoma (ALCL) tyrosine kinase (ALK) and epithelial membrane antigen (EMA) were negative.

Her blood investigations including HIV test were normal. Computered tomography (CT) scanning of the neck, chest, abdomen and pelvis showed no lymphadenopathy or organomegaly. Bone marrow was clear of the tumour.

She was thus diagnosed to have primary cutaneous ALCL Stage 1E (solitary or grouped lesions confined to 1 anatomic site less than 15 cm[2]). Her skin tumour responded to 22 fractions of localized radiotherapy but was complicated by worsening of the ulcer. Nevertheless, the ulcer responded to hydrogel and silver dressing.

## Discussion

Our patient is interesting because she is a woman in her early 30s. Bekkenk et al in the Netherlands found only 1 patient younger than 20 years old among 79 patients with primary cutaneous CD 30+ large cell lymphoma[3]. Most studies found the mean ages in the mid 40s[3,5].

The histological findings in our patient showed neoplastic CD30+lymphocytes with no predilection for either T (CD3 and 8) or B (CD20) cells. We suspect that she had null cell primary cutaneous ALCL, although CD43, another T cell marker was not done. Null cell primary cutaneous ALCL is rarely seen. Liu et al reported that 3 out of 25 patients with primary cutaneous ALCL in Stanford had null cell primary

**Figure 1.** Irregular nodular lesion on the right mid thigh with an overlying ulcer and multiple satellite lesions



**Figure 2.** Diffuse dermal infiltration by large neoplastic cells with no epidermotropism (H&E stain. X10 magnification)
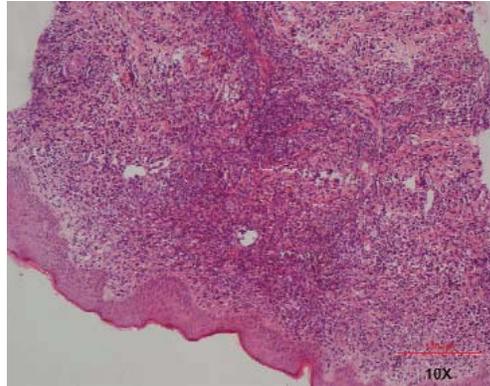


**Figure 3.** Large neoplastic lymphoid cells had abundant eosinophilic cytoplasm with large horseshoe nuclei and prominent nucleoli (H&E stain. X40 magnifications)
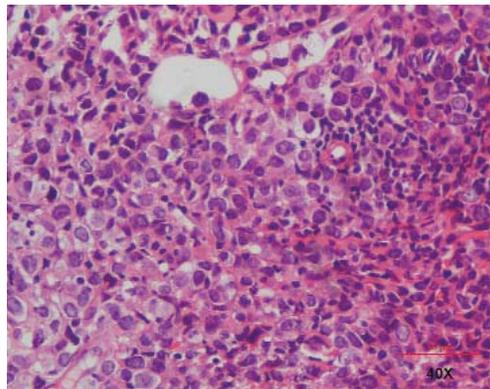


cutaneous ALCL[5]. The main differential diagnoses histopathologically are secondary cutaneous manifestation of systemic ALCL and type C lymphomatoid papulosis (LyP). In our case the infiltration of the neoplastic lymphocytes was until the level of the panniculus, ruling out LyP which does not infiltrate the subcutis. Moreover, the patient presented with tumoural lesion and not papular lesion as commonly seen with LyP. The absence of ALK and EMA staining in our case ruled out cutaneous involvement of systemic ALCL. De Coteau showed that systemic CD30+ ALCL express ALK and EMA whereas LyP and primary cutaneous ALCL lack these markers[6].

Another differential diagnosis to entertain is the large cell transformation of mycosis fungoides (MF). It is of utmost importance to differentiate the two because large cell transformation of MF has a more aggressive clinical course and warrants aggressive therapy[5]. Clinical presentation usually is helpful in differentiating the two entities.

Tumoural lesions developing within patches or plaques of MF favour large cell transformation[5,7]. Our patient presented with tumoural nodules without plaques or patches. This is more in keeping with primary cutaneous ALCL. Histopathologically, presence of small, intermediate, and large atypical lymphocytes in addition to the large anaplastic cells would favour large cell transformation of MF7. In our patient, the large neoplastic cells were prominently seen without presence of atypical lymphocytes favouring a diagnosis of primary cutaneous ALCL.

Stage 1E consisting of solitary or few localized lesions are treated with local radiotherapy or excision[3,4,5]. Multifocal disease is best treated with radiotherapy or low dose methotrexate[3,5]. Multiagent chemotherapy is only indicated in full-blown disease of lymph nodes involvements[3]. Our patient responded completely to the localized radiotherapy.

Liu et al in Stanford reported that their patients with null cell phenotype had a worse outcome compared to T cell phenotype[5]. They added that those with null cell phenotypes were more resistant to treatment. We would continue to follow our patient to monitor the progress of her disease.

## References

1. Zackheim HS, Vonderheid EC, Ramsay DL, LeBoit PE et al. Relative frequency of various forms of primary cutaneous lymphomas. J Am Acad Dermatol 2000; 43: 793-6.
2. Beljaards RC, Kaudewitz P, Berti E, Gianotti R et al. Primary cutaneous CD 30-positive large cell lymphoma: definition of a new type of cutaneous lymphoma with a favorable prognosis. Cancer 1993; 71: 2097-104.
3. Bekkenk MW, Geelen FAMJ, van Voorst Vader PC, Heule F et al. Primary and secondary cutaneous CD 30+ lymphoproliferative disorders: a report from the Dutch Cutaneous Lymphoma Group on the long-term follow-up data of 219 patients and guidelines for diagnosis and treatment. Blood 2000; 95(12): 3653-61.
4. Whittaker SJ, Marsden JR, Spittle M. Joint British Association of Dermatologist and U.K. Cutaneous Lymphoma Group guidelines for the management of primary cutaneous T-cell lymphoma. Br J Dermatol 2003; 149: 1095-107.
5. Liu HL, Hoppe RT, Kohler S, Harvell JD et al. CD30+ cutaneous lymphoproliferative disorders: The Stanford experience in lymphomatoid papulosis and primary cutaneous anaplastic large cell lymphoma. J Am Acad Dermatol 2003; 49: 1049-58.
6. De Coteau JF, Butmarc JR, Kinney MC, Kadin M. The t(2;5) chromosomal translocation is not a common feature of primary cutaneous CD30+ lymphoproliferative disorders: Comparison with anaplastic large-cell lymphoma of nodal origin. Blood 1996; 87: 3437-41.
7. Diamandidou E, Colome-Grimmer M, Fayad L, Duvic M et al. Transformation of mycosis fungoides/Sezary syndrome: clinical characteristics and prognosis. Blood 1998; 92: 1150-9.
8. Sheehan JM, Kalaaji AN, Markovic SN, Ahmed I. Management of multifocal primary cutaneous CD 30+ anaplastic large cell lymphoma. J Am Acad Dermatol 2004; 51(1): 103-10.
9. Beljaards RC, Kaudewitz P, Berti E et al. Primary cutaneous CD 30-positive large cell lymphoma: definition of a new type of cutaneous lymphoma with a favorable prognosis. Cancer 1993; 71: 2097-104.
10. Bekkenk MW, Geelen FAMJ, van Voorst Vader PC et al. Primary and secondary cutaneous CD 30+ lymphoproliferative disorders: a report from the Dutch Cutaneous Lymphoma Group on the long-term follow-up data of 219 patients and guidelines for diagnosis and treatment. Blood 2000; 95(12): 3653-61.
11. Whittaker SJ, Marsden JR, Spittle M. Joint British Association of Dermatologist and U.K. Cutaneous Lymphoma Group guidelines for the management of primary cutaneous T-cell lymphoma. Br J Dermatol 2003; 149: 1095-107.
12. Sagaert X, De Wolf-Peeters C. Anaplastic large cell lymphoma. Current Diagnostic Pathology 2003; 9: 252-8.

## Case Report

# Cutaneous tuberculosis confirmed by PCR in a patient with culture negative for mycobacterium tuberculosis

Lee YY[1] MD MRCP MMed, Loh LC[1] MBChB MRCP and SC Peh[2] MBBS MPath FRCPath FRCPA AM FAMM PhD

[1]Dermatology Unit, Department of Medicine
[2]Department of Pathology
University Malaya Medical Centre, Kuala Lumpur

**Correspondence**
Lee Yin Yin MD MRCP MMed
Dermatology Unit
Department of Medicine
University Malaya Medical Centre
Kuala Lumpur
Email: yleemd@yahoo.com

Cutaneous tuberculosis is an old and rare infectious disease. Laennec reported the first case of cutaneous tuberculosis in 1826 and *M. tuberculosis* was discovered by Koch in 1882[1].

Since then, many cases of cutaneous tuberculosis have been described and classified. The different forms of diseases correlate with the immunologic status of the host, host's prior sensitization, route of disease transmission, layer of skin primarily involved and rate of disease progression. Nevertheless, the most widely accepted classification is based on the mechanism of disease propagation which can be via direct inoculation, through contiguous infection or via hematogenous route[2]. Bacterial load has also been used to categorize this disease into multibacillary and paucibacillary forms.

Diseases under the multibacillary forms include primary inoculation tuberculosis (tuberculous chancre), scrofuloderma, tuberculous periofficialis, acute miliary tuberculosis and tuberculous gumma. Paucibacillary forms include lupus vulgaris, tuberculosis verrucosa cutis and tuberculids.

Strains of *M. Tuberculosis* complex that can be isolated include *M. tuberculosis*, *M. africanum*, *M. canetti* and *M. bovis*, *M. microti* and *M. bovis BCG*.

## Case Report

A 50-year-old Indian woman presented with a rapidly enlarging and painless plaque on her right knee of more than 3 years duration. She had a history of a small laceration at the same site thirty years ago, which did not heal completely. She is otherwise healthy, without any constitutional symptoms. She was previously employed as a clinic assistant more than ten years ago. Clinically, there was a firm, well demarcated, erythematous, scaly plaque on her right knee with raised, hyperkeratotic edge. (Figure 1)

Skin biopsies performed at two different occasions showed chronic granulomatous inflammation. (Figure 2a and 2b)

However, mycobacterium could not be seen or isolated by smear examination or conventional culture methods from the skin specimens.

Blood counts and biochemistry was unremarkable. Her ESR was 32 mm/hr and mantoux test was 30 mm. Her chest X Ray was normal

Her clinical features were highly suggestive of cutaneous tuberculosis, although cultures were negative. She was offered empirical treatment with anti-tuberculous therapy which she declined pending an absolute diagnosis.

We proceeded to PCR technique to detect M. tuberculosis DNA. The result was positive for detection of M. tuberculosis complex. She was subsequently initiated on intensive anti-tuberculous therapy consisting of oral Rifampicin 600mg daily, Pyrazinamide 1.5gm daily, Isoniazid 300mg daily and Pyridoxine 10mg daily for 2 months followed by maintenance regime for six months. This resulted in marked clinical improvement of her hyperkeratotic plaque.

## Discussion

The worldwide incidence of tuberculosis is on a steady rise in recent years. Cutaneous tuberculosis represents only a minute proportion of tuberculosis. Nonetheless, due to the high prevalence of tuberculosis particularly in developing countries, this small percentage becomes significant.

Effective management of cutaneous tuberculosis requires rapid detection and confirmation of the etiologic agent. Unfortunately, obstacles in the diagnosis of cutaneous tuberculosis arise due to varied clinical manifestations of the cutaneous lesions and also low culture yield for *M. tuberculosis*, especially from chronic lesions and in patients with a high degree of cell mediated immunity[3].

Traditionally, the accepted 'gold standard' laboratory methods for detecting and identifying *M. tuberculosis* in skin include direct acid-fast bacteria (AFB) smear with Ziehl-Neelsen (ZN) stain, Lowenstein-Jensen (LJ) based culture media, radiometric BACTEC system and histopathological examination.

Advances in research have led to the discovery of newer techniques including molecular diagnostic tests over the past two decades. Majority of these investigations focused on detection of nucleic acids (RNA and DNA), which are specific to *M. tuberculosis* by amplification techniques such as PCR.

Historically, investigators concentrated on the identification of purin and pyrimidine base content of mycobacterial genomes, which was followed by DNA re-association kinetics, restriction of endonuclease analysis and sequence-specific DNA hybridization with radioactively labeled probes[4]. This technique is further enhanced with the incorporation of PCR, which assisted in sequence-specific amplification of mycobacterium target sequence before their molecular analysis.

Amplified *M. tuberculosis* direct test (MTD) (Gen-Probe Inc., San Diego, CA, USA) is a rapid technique of nucleic acid amplification which can be used directly on processed clinical specimens. It is based on enzymatic amplification of ribosomal RNA via DNA intermediates. Detection of amplified product is then facilitated by an acridinium-ester-labeled DNA probe[5].

This kit is available under a special research purpose in the microbiology laboratory in 'Hospital Sungai Buluh'. An arrangement was made to send our skin biopsy sample there for further investigation. This proved to be a valuable experience for both our patient and ourselves when the report was positive for *M. tuberculosis* complex.

**Figure 1**.



**Figure 2a & 2b**. Epidermis show hyper- and parakeratosis. The subepidermal areas show granulomas composed of collections of lymphocytes, epitheloid cells and multinucleated Langhans' type giant cells. Special histochemical stains (Ziehl-Neelsen, Giemsa and Periodic Acid Schiff stains) do not reveal presence of acid fast bacilli or fungus
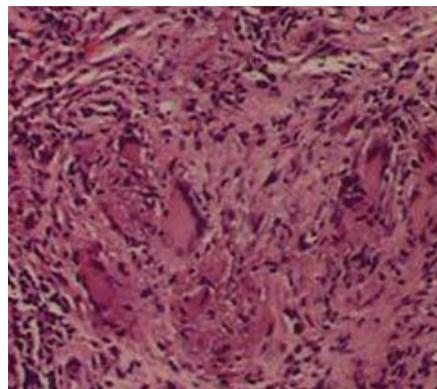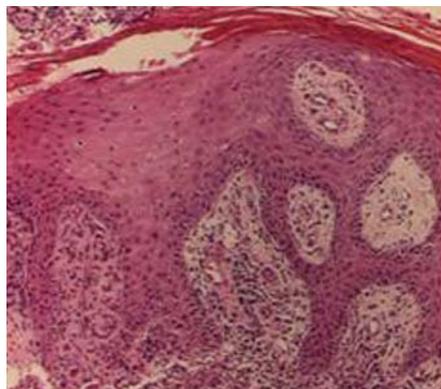
Detection of *M. tuberculosis* DNA by PCR in fresh tissue is a reliable method for diagnosis and confirmation of cutaneous tuberculosis, particularly when this microorganism is not detected by conventional methods.

Multiple trials have been conducted comparing conventional versus new diagnostic modalities. A comparative study of PCR, smear examination and culture for diagnosis of cutaneous tuberculosis conducted by Negi et al in 2005 found PCR to be more superior to other investigative modalities, with a sensitivity and specificity rates of 95.2% and 100% respectively[6]. PCR is also more superior due to its rapid detection of positive results, ie. 1 day for PCR, < 1 day for smear examination[23].42 days for BACTEC culture and 38.02 days for LJ culture.

Our patient is a classic example of a case of diagnostic dilemma that benefited from this rapid, sensitive and precise investigation. This enables us to initiate immediate treatment with tremendous clinical improvement after six months of combined anti tuberculous therapy.

We hope that this DNA amplification technique will be made readily available in our local setting to assist in providing a rapid and informative tool for detection and immediate initiation of appropriate treatment against *M. tuberculosis*.

## References

1. MacGregor RR. Cutaneous Tuberculosis. Clinics in Dermatology. 1995;13:245-255.
2. Bravo FG and Gotuzzo E. Cutaneous tuberculosis. Clinics in Dermatology (2007) 25, 173-180.
3. Farina M, Gegundez I, et al. Cutaneous tuberculosis: A clinical, histopathologic, and bacteriologic study. J Am Acad Dermatol. September 1995. Volume 33, Number 3.
4. Klaus, D. Detection of Mycobacterial DNA in the Skin: Etiologic Insights and Diagnostic Perspectives. Arch Dermatol. 1996;132:71-75.
5. Cho, SN and Brennan, PJ. Tuberculosis: Diagnostics. Tuberculosis. 2007:Aug;87 Suppl 1:S14-7.
6. Negi SS, Basir SF, Gupta S, Pasha ST, Khare S, Lal S. Comparative study of PCR, smear examination and culture for diagnosis of cutaneous tuberculosis. J Commun Dis. 2005 Jun;37(2):83-92.

Commentary

# Management of naevus of Ota

**HC Ting** MBBS MRCP

Ting Skin Specialist Clinic, Kuala Lumpur

**Correspondence**
Dr Ting Hoon Chin
Ting Skin Specialist Clinic
78A, Jalan Imbi
55100 Kuala Lumpur
Email: hoonchin@streamyx.com

Therapy with Q-switched lasers which can deliver light pulses with high fluences and very short pulse durations is the treatment of choice for naevus of Ota. The target of treatment is the melanosome and this has a thermal relaxation time of 0.5 - 1 microsecond. The pulse duration of the light from Q-switched lasers is in the range of 10-50 nanoseconds which is within the limits of this thermal relaxation time, thus allowing selective photothermolysis, with minimal injury to the surrounding tissue. Melanin has a broad absorption spectrum (from 250-1200 nm). The three Q-switched lasers known to be effective for naevus of Ota produce light with wavelengths within this absorption spectrum (Q-switched ruby 694 nm, Q-switched Alexandrite 755 nm and Q-switched Nd-YAG 1064 nm).

Of the three lasers the Q-switched Nd-YAG has the least absorption by melanin and is considered to be safer than the other two lasers for patients with darker skin types in whom the complications of hypopigmentation and hyperpigmentation are always a concern. However, there are only few reports in the literature on the use of Q-switched Nd-YAG in darker skin individuals. This retrospective study by Tang, Gangaram and Hussein shows that the use of Q-switch Nd-YAG laser produces good results with no complications and no recurrences in 50 patients with type IV and type V skin[1]. Previous studies from Hong Kong of patients treated with Q-switched lasers (Q-switched Nd-YAG alone, Q-switched Alexandrite alone or the 2 combined) have reported instances of hypopigmentation, hyperpigmentation, texture change and scarring, as well as recurrences[2]. Perhaps further studies on larger groups of patients, preferably prospective in nature, will clarify the issue with regard to complications and recurrences.

## References

1. Tang MM, Gangaram HB, Hussein SH. Treatment of naevus of Ota with Q-switched 1064nm Nd:YAG laser. Malay J Dermatol 2007: 21: 34-36
2. Chan HH, Leung RS, Ying SY, et al. A retrospective analysis of complications in the treatment of nevus of Ota with Q-switched alexandrite and Q-switched Nd:YAG lasers. Dermatol Surg 2000;26: 1000-1006.

# Correspondence

## Temptations of dermatologists

Dermatologists face temptations in the course of their work. I can think of a few areas where dermatologists have to thread cautiously so as to avoid regrets later or even for the rest of their lives.

1) When the clinic is busy and lesions look like fungal infections, it is very tempting to start antifungal treatment without mycological confirmation. But when lesions do not clear, we have a problem. Microscopic examination then usually is negative, which may mean it is not a fungal infection all along, or it may be negative because of suppression of fungus by the antifungal agents, which due to certain reasons, is unable to clear it.

Therefore, to avoid confusion, it is always safer to follow the golden rule of not starting antifungals without mycological confirmation.

2) All dermatologists know the name Tinea versicolor is a misnomer, but not all take the trouble to stop others from using it. Some may conveniently use it themselves. This may be costly to patients and health care providers since oral griseofulvin is often prescribed by non-dermatologists for 'Tinea' infections. I come across this error again and I am sure other dermatologists have come across it too. So let us set a good example besides teaching non-dermatologists to call it Pityriasis versicolor since it is a yeast infection which will not respond to griseofulvin.

3) Sometimes lesions are removed and discarded by confident doctors without taking the trouble to send them for histopathological examination. This can be dangerous since seeing can be misleading! Assuming our visions are perfect and we are not colour blind, lesions can still mimic one another. Research has shown that consultants perform better than junior doctors in clinically differentiating malignant skin lesions from benign ones. But neither groups can achieve a perfect score! They can still mistake malignant melanoma for seborrhoeic keratosis and vice versa. Pigmented basal cell carcinoma only adds to the uncertainty.

So, think twice before confidently and conveniently discarding tissues. Once gone, they cannot be recovered. And a later dispute may arise.

4) You may have heard this one. A doctor was heard asking a lawyer during a party, "How can I prevent people from coming to me for their medical problems in public places? "

"Very simple, just send them bills for consultation and they will stop bothering you" said the wise lawyer with a smile. "How come I have never thought of that" the doctor wondered.

"Don't worry, I'll send you the bill for this consultation soon." The lawyer said with a bigger smile.

The professional hazard of any dermatologist includes people coming to them in the corridor for consultation. Dermatologists are hereby warned to avoid entertaining the public by making "corridor diagnoses"! This is not just about money. Other reasons include:-

a) You cannot take a proper history with so many people in the hearing range whether they want to eavesdrop or not. Patients may later turn around and accuse you of embarrassing them by asking sensitive questions in the public, i.e. you are not professional enough to uphold professional secrecy!

b) You cannot possibly carry out any proper physical examination either. Without proper lighting, nursing assistance, privacy for patients to be adequately exposed for proper examination, you are doomed to make a blunder.

c) No medical records means no protection!

d) More people will line up for your "mobile charity clinic "once you start with the first patient.

Remember, resist making a corridor diagnosis at all costs. It may be more costly if you neglect this advice!

Dr Ong Cheng Leng MBBS, MRCP

Consultant Dermatologist
Kuantan General Hospital, Kuantan

## Cutaneous manifestations of lymphomas: Report of 3 cases

Lymphomas are malignant disorders of the lymphoid tissues which arise either from B or T lymphocytes. Skin is an important organ where early symptoms of the disease manifest and prompts investigations. Three disorders, Hodgkin's disease (HD), Non-Hodgkin's lymphoma (NHL) and Mycosis Fungoides (MF) seen by the author over the past several years are reported and their unique presentations discussed.

**Figure 1.** HD. Tumours, ulcerative lesions over the thigh



**Figure 2.** Pautriers microabscesses (H&E X 400)
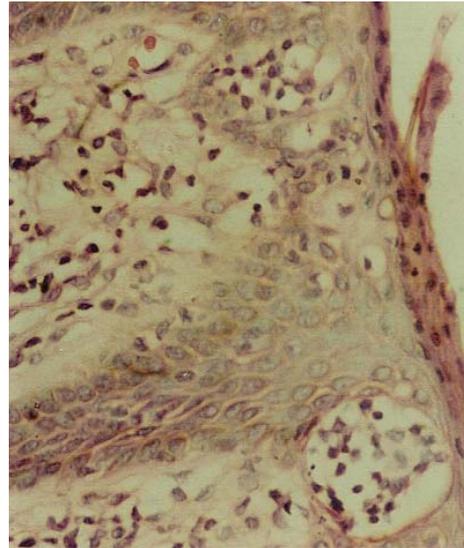


## Case Reports

### Case 1

A 61-year-old Chinese man presented with a large tumour, ulcerative plaque and multiple nodular lesions over the left thigh of insidious onset (Figure 1). There was no history of weight loss, fever or pruritus. The spleen was not palpable and there was no significant superficial lymphadenopathy. A skin biopsy showed features of Hodgkin's disease, lymphocytic predominant with dense mononuclear cells in the dermis with few diagnostic binucleate (mirror-image) Reed-Sternberg cells. He was referred for staging of the disease and further treatment but he died two months later.

### Case 2

A 56-year-old Chinese woman was seen with nodular lesions on the lower leg for the past 6 months. She experienced mild itch. She had no other constitutional symptoms. Her inguinal lymph nodes were enlarged but non-tender. A skin biopsy showed lymphoid cell which were immature with ovoid nuclei surrounding the blood vessels and skin appendages. Histochemical tests showed the cell were LCA and L 26 positive. Patient was referred for chemotherapy and responded well.

### Case 3

A 40-year-old Malay woman presented with a large tumour over the left axilla and diffuse plaques over the abdomen and chest associated with pruritis for the past 6 months. She had taken some traditional medicine but was of no help in the progress of the disease. A skin biopsy showed polymorphic infiltrate consisting of lymphoid cells, histiocytes in the dermis seen marching towards and

invading the epidermis forming collections of Pautrier's microabscess which consists of a small group of mononuclear cells surrounded by halo-like clear space (Figures 2). Patient was ill and did not survive long.

The cutaneous manifestations of lymphoma may vary from pruritus and pigmentation to ulcerative plaques and nodules. The lymphomas arise in the lymph nodes or in the lymphoid tissues of the parenchymal organs such as the gut, lung or skin. Ninety percent of HD originate from the lymph nodes and 10% are of extra-nodal origin. Primary cutaneous HD is rare but has been well documented. In 1832, Thomas Hodgkin of Guy's Hospital, London described the autopsy findings of 7 patients who died of generalized lymphadenopathy and splenomegaly. The histopathological features of HD was described by Greenfield in 1878. In 1892, Sternberg described the characteristic giant cells and areas of necrosis. The recognition of giant cells as the diagnostic component of HD was made by Dorothy Reed of John Hopkin's Hospital in 1902. Ever since, much progress has been made in the classification and management of the desease.

The clinical features, constitutional symptoms, histopathological types, staging and curative treatmant of HD are well established. Skin lesions are part of general involvement of organs and lymph nodes. When the skin is involved histopathologically the prognosis is thought to be poor as in the reported case and tends to occur in areas of the skin distal to the lymph node(s) containing tumour. In most patients it is manifested initially by the appearance of erythematous nodules which grow continuously and become ulcerated as in the first patient.

Non-Hodgkin's lymphoma (NHL) refers to the malignant disorders of lymphoid tissues which lack the characteristic histopathological features of HD, that is absence of Reed-Sternberg cells. NHL has several subtypes but basically it is divided into high and low grades according to the rate of cell division. High-grade lymphomas are potentially curable whereas the low-grade is considered incurable.

MF is a cutaneous T-cell lymphoma which has variable clinical manifestations ranging from multiple or solitary patches, generalised hyperpigmentation and excoriation, infiltrative plaque, erythematous nodules to pruritic erythroderma or exfoliative dermatitis and large tumours. Pruritus is a common symptom as in other lymphomas. It is divided into patch, plaque and tumour stages. The cutaneous lesions range from round, oval patches or plaques to infiltrative nodules. MF can spread to the lymph nodes and visceral organs.

Kader B Mohamed MBBS, Dip Dermatology

Department of Dermatology
Hospital Pakar Sultanah Fatimah
84000 Muar, Johor

## References

1. Gordon RA, Donald P. Skin Infiltrations in Hodgkin's Disease. Arch Dermatol 1980; 116:1038-1040.
2. SzurL, Levene GM, Harrison CV Samman PD. Primary Cutaneous Hodgkin's Disease. Lancet 1970; 1:1016-1020.
3. Lymphomas. In Clinical Medicine, Kumar P, Clark M, editors. 6th ed. London, W.B Saunders 2005, p367-369.
4. Leslie Smith J, Butler JJ. Skin Involvement in Hodgkin's Disease. Cancer 1980; 45:354-361.
5. Randle et al. Cutaneous Granulomas in Malignant Lymphoma. Arch Dermatol 1980; 116:441-443.