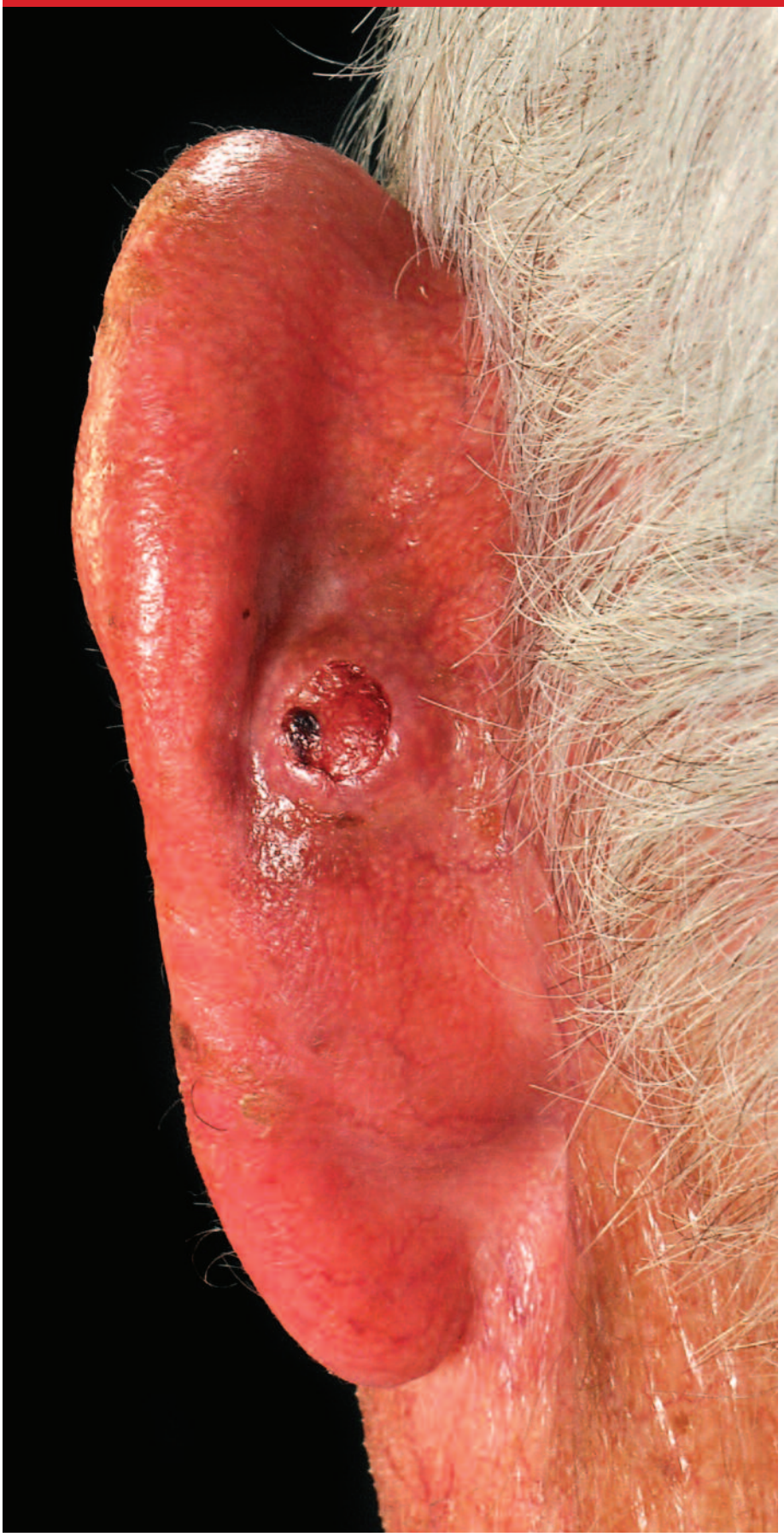
Autumn 2014 Volume 20 Number 3 www.dermatologyinpractice.co.uk

Dermatology in practice



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References:

1. Gallagher J. *et al.* Poster presented at EADV Congress 2009.
2. Dermol Range – Total Unit Sales since launch. Dermal Laboratories Ltd. Data on file.

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Hayward Medical Communications
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The Pines, Fordham Road,
Newmarket CB8 7LG, UK.
Tel +44 (0)1638 723560.
Fax +44 (0)1638 723561.
email admin@hayward.co.uk
www.hayward.co.uk

Editorial enquiries
email: edit@hayward.co.uk

Publisher Mary Read.
Editorial Director Robin Jones.
Managing Editor Rebecca Ayres
Editorial Project Manager Polly Lockyer
Art Editor Richard Seymour.

ISSN 0262-5504 (Print).
ISSN 2049-8446 (Online).

Printed by Williams Press Ltd.

Cover picture
COURTESY OF HELEN M CORDEY AND ANDREW AFFLECK

■ Patients can now seek out quality metrics on hospitals and even individual clinicians

KONSTYANTA

A modern dermatologist

In many ways it's an exciting time to be practicing dermatology. First immunosuppressive medications, and now the biological revolution, have transformed, and continue to improve, our management of patients with inflammatory disease. In the biologics clinic this afternoon, patients, many of who have been 'old friends' for years (and for whom I had little new to offer to them for years), came along exhibiting almost normal skin. Nearly all these patients are enrolled in monitoring studies to document the safety and efficacy of their treatment. We chatted about how things have changed.

Similarly, although there has been an increase in skin cancer, the surgical work undertaken routinely in dermatology departments has changed dramatically over the past decade or so. Added to this, new and emerging topical treatments facilitate non-surgical options for many.

The flip side is the growing expectation that we not only have to do a good job – but to prove we are doing so. Outcome data is expected at appraisal – and is sought by regulatory bodies when doctors get into difficulty. Patient expectation has also changed – there is an expectation that the services will be readily accessible, run to time, provide good communication and deliver good outcomes – both medically and socially. Whereas ten years ago patients blamed the government for miserly spending on the health service, now they seek out quality metrics on hospitals and even individual clinicians. It's all part of being a modern dermatologist.

In this edition, Helen Cordey considers how we might manage squamous cell carcinomas better, particularly with regard to case identification and risk stratification. This is always difficult, and when a patient develops metastatic squamous cell carcinoma, it is easy to be critical of some aspects of the initial management. It's a classical mistake, with hindsight one can identify all the pointers that showed trouble was in store – whereas at the time the clinician making the decisions will have been faced with many competing factors, not knowing which would prove to be most important.

Some clinical problems, however, seem to trouble us as much as they troubled previous generations of dermatologists, and flexural psoriasis is one of these. Although there have been improvements in our armamentarium – for many patients it is still a miserable problem. Janika Borg leads us through the assessment and management of this challenging area and offers some new hopes for the future.

For me, dermatology is fun, offering a wide range of patients, each with their individual problems. Victoria Scott-Lang's article on tattoos covers an area where the patient's fun meets the dermatologist's professional interest. What more could we ask for?

I entitled this comment 'A modern dermatologist'. However, Barry Monk finishes this edition of *Dermatology in Practice* by reminding us that the notions of 'putting the patient first', bedside research and the crucial role of doctors in managing healthcare are nothing new. He takes us back to Dr Plummer and the early days of the Mayo Clinic.

Neill Hepburn, Editor

DERMATOLOGY IN PRACTICE 2014; Vol 20 No 3

Helen M Cordey BA (Hons) MB BChir MRCP
Dermatology Specialty Registrar
Andrew Affleck BSc (Hons) MB ChB MRCP
Consultant Dermatologist and Mohs Surgeon, NHS Tayside, Dundee

Management of cutaneous squamous cell carcinoma – could we do better?

Cutaneous squamous cell carcinoma (cSCC) is the second most common type of skin cancer and it is increasing in incidence worldwide. As with its much more common 'cousin', basal cell carcinoma (BCC), tumours arise in keratinocytes, so both cancers are often lumped together as 'non-melanoma' or 'keratinocytic' skin cancer. However, it is desirable to distinguish the two types clinically to facilitate optimum management, as their biological behaviour may differ. Most cSCCs are classified as carrying 'low or no risk' of metastatic disease, but a small subgroup of patients are at 'high risk' and deaths do occur. The overall rate of metastasis is less than 5%, but the five-year survival is poor in the subset of patients who do develop distant metastases.[1] In the majority of cases, patients with cSCC initially present to their GP. Knowledge of the clinical features and high-risk characteristics of cSCC is, therefore, invaluable for GPs, who have an important role to play in detecting these sometimes difficult to diagnose tumours, and in referring patients for appropriate and timely management.[2]

Incidence of cSCC in the UK

In 2011, there were 102,628 cases of non-melanoma skin cancer (NMSC) registered in the UK, and its incidence is estimated to have increased by 30% in the past decade alone.[3] Around 20% of cases of NMSCs are cSCCs, the other 80% being mostly BCCs (approximate ratio of cSCCs to BCCs = 1:4).[3]

Risk factors for cSCC

Older men are the demographic group most commonly affected by cSSC. Chronic exposure to ultraviolet (UV) radiation is the most important risk factor for the development of cSCC, and tumours usually arise on sun-exposed body sites. Tumours arising on head and neck sites account for around 70% of cSCCs, with most of the remainder occurring on the forearms, dorsal hands, lower legs and trunk. Increased sun exposure due to outdoor work or use of sun beds further increases the risk, particularly in fair-skinned individuals who do not tan. Previous cSCC or actinic damage (actinic keratoses [AKs] or intraepithelial carcinoma) are both risk factors for cSCC development.

Patients with compromised immunity (for example, recipients of solid organ transplants receiving long-term systemic immunosuppressive therapy) have a very high risk of developing cSCC, with a reversal of the usual cSCC to BCC incidence ratio compared with the general population; that is, 4:1.[4] Metastatic cSCC is a significant cause of morbidity and mortality in the solid organ transplant population, particularly in those with additional risk factors such as fair skin and, history of excessive UV exposure. See Box 1 for a list for risk factors.

Box 1. Risk factors for the development of cSSC

- Male sex
- Age >50
- Excessive/chronic exposure to ultraviolet radiation
- Immunosuppression
- Fair skin
- Previous cSSC
- Actinic keratoses or intraepithelial carcinoma/ Bowen's disease

Box 2. Differential clinical diagnoses of cSSC

- Keratoacanthoma
- Intraepithelial carcinoma/Bowen's disease
- Basal cell carcinoma
- Hypertrophic actinic keratosis
- Pyogenic granuloma
- Irritated seborrhoeic keratosis
- Viral wart

Clinical presentation

cSCC can present with a broad spectrum of clinical features ranging from a large, rapidly growing keratinising nodule to a fissure or small erosion which fails to heal. Lesions often arise on photodamaged skin, and the first clinical sign is likely to be an area of palpable induration which extends beyond the visible margins. The lesion may then progress to become plaque-like, tumid, verrucous

For those patients with dry skin conditions such as eczema, The British Association of Dermatologists guidelines advise that the use of soap or detergent based products can exacerbate their symptoms. They recommend the use of soap substitutes.[1]

Doublebase Bath, Wash and Shower provide an effective alternative to the harshness of soap. They all contain a non-foaming soap substitute, which gently **cleanses** the skin, and a humectant which attracts water to **moisturise** the skin. The high oil content softens the skin and **protects** against dryness.

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Reference: 1. http://www.bad.org.uk/site/796/default.aspx

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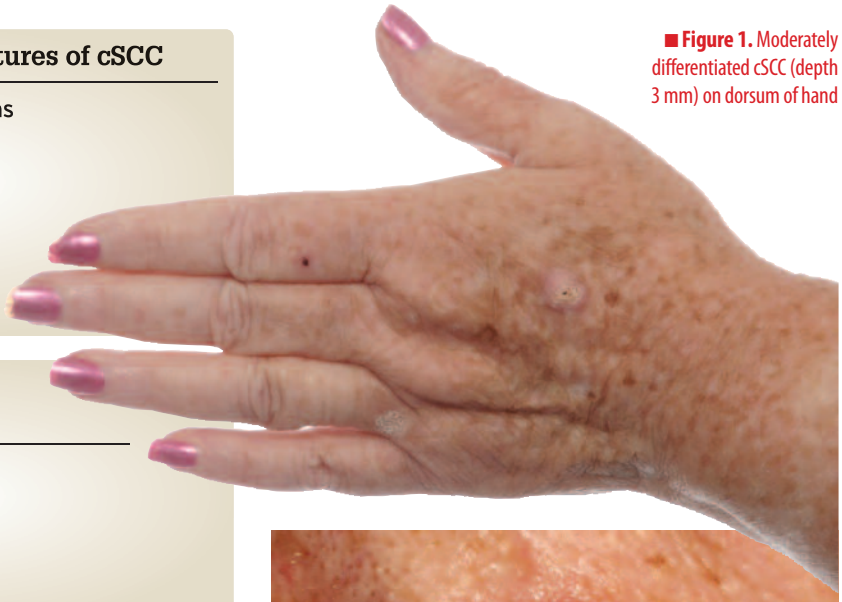
Box 3. Characteristic features of cSCC

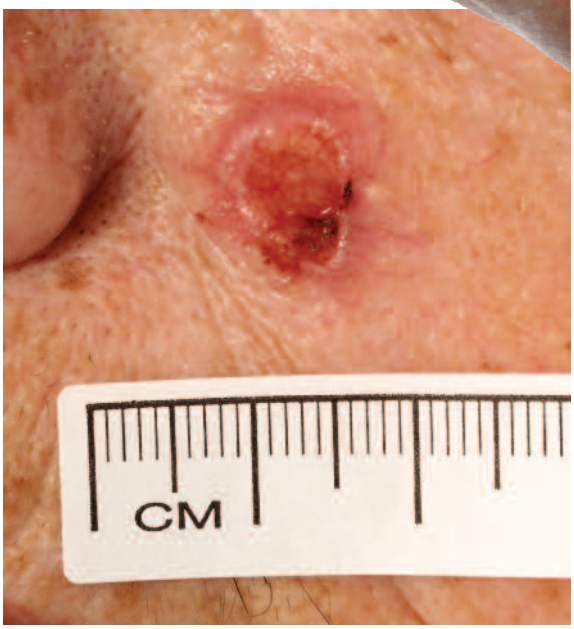
- Rapid growth – weeks/months
- Opaque appearance
- Induration
- Cutaneous horn/associated actinic keratoses
- Pain/tenderness
- Ulceration

Box 4. Characteristic features of BCC

- Slow growth – months/years
- Translucent appearance
- Rolled edge
- Surface telangiectases
- Ulceration



■ **Figure 1.** Moderately differentiated cSCC (depth 3 mm) on dorsum of hand



■ **Figure 2.** Moderately differentiated cSCC (depth 4 mm) on medial cheek. Central ulceration and rolled edge may lead to misdiagnosis as BCC

or ulcerated.[5] See Box 2 for a guide to differential diagnoses of cSCC.

Keratoacanthomas (KAs) have been considered to be benign keratinocytic tumours that typically present as rapidly growing, dome-shaped nodules with an area of central hyperkeratosis resembling a volcano. The natural history of KAs is characterised by rapid growth, a period of stability and then spontaneous resolution and healing with irregular atrophic scarring. The growth phase may occur over a period of weeks and most will then involute two to six months after initial presentation. Clinical differentiation from cSCC is impossible, and the recommended management is, therefore, surgical excision. Recently, the histopathological classification of KAs has changed and the term 'KA-like cSCC' is now preferred.

A cutaneous horn is a descriptive term for a finger-like stack of keratin which may arise from both malignant and non-malignant skin lesions. Clues to an invasive cSCC being present at the horn base include pain, the height being less than the diameter of the indurated base and the presence of erythema around the base.[6]

Role of dermoscopy in diagnosis

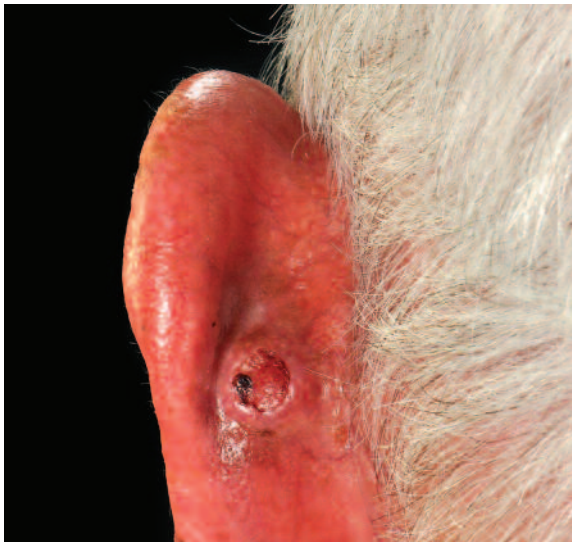
The role of dermoscopy in the diagnosis of cSCC is less established than in the diagnosis of melanocytic lesions. However, it can provide valuable information, particularly in helping to differentiate cSCC from other skin lesions, such as BCC. Dermoscopic features associated with cSCC include hairpin vessels, linear irregular vessels, targetoid hair follicles, white structureless areas, a central mass of keratin and ulceration.[7]

Differentiation of cSCC from BCC

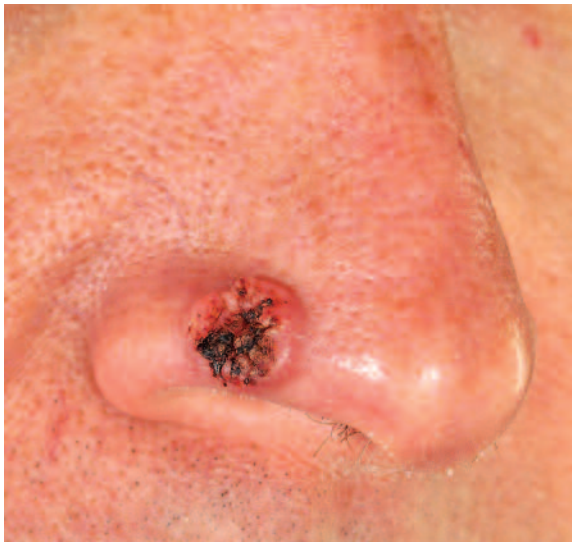
BCCs are the most common form of skin cancer in the UK, and are often easily diagnosed by their characteristic clinical appearance. Nodular BCCs, the most common subtype, are classically slow-growing nodules on sun-exposed sites which may ulcerate. They usually have a distinctive rolled, pearly border and arborising telangiectasia evident on dermoscopy. Despite the clinical differences, differentiating cSCC from BCC can be challenging, particularly when cSCC develops *de novo* from normal skin (see Boxes 3 and 4). Studies of clinical diagnostic accuracy have shown variable concordance. In one study, 32% of cSCC cases were not correctly diagnosed prior to surgery.[8] Figures 1–6 illustrate typical presentations of cSCC.

Basosquamous carcinoma is a rare type of skin cancer with clinical and histological features of both BCC and cSCC. Biologically, basosquamous carcinoma behaves like a high-risk cSCC with a propensity for local recurrence and potential for metastatic spread. Dermoscopy may help in identifying this more unusual tumour.[9]

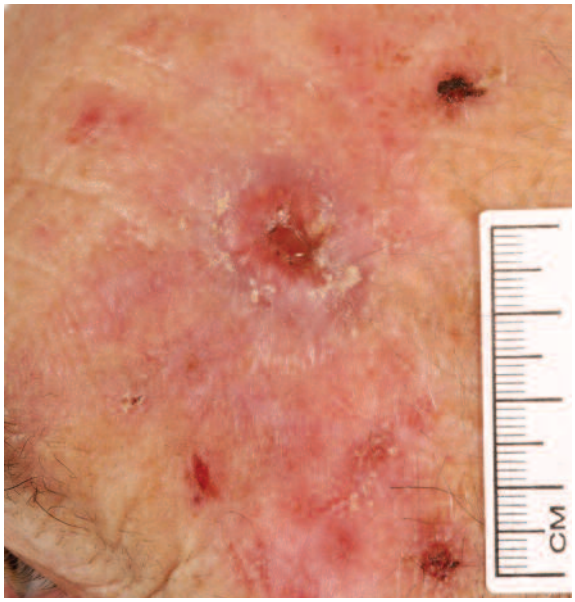
If the clinical and dermoscopic features are equivocal, one should err on the side of caution by



■ **Figure 3.** Poorly differentiated cSCC (depth 4.5 mm) on posterior pinna. Circular symmetrical appearance is more suggestive of cSCC than BCC

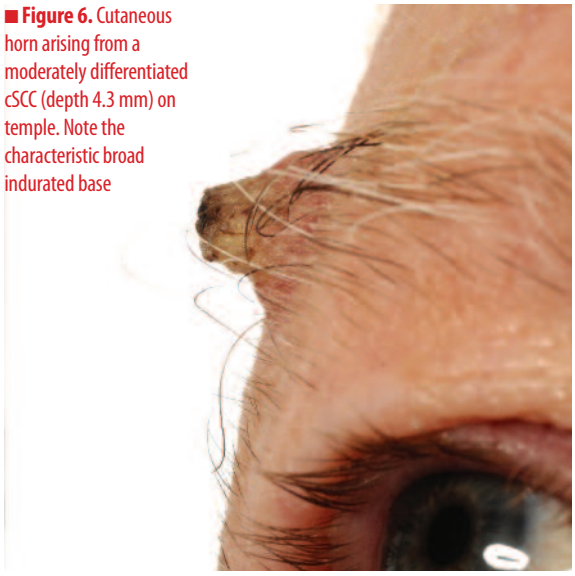


■ **Figure 4.** 'Keratoacanthoma-like' cSCC on nose



■ **Figure 5.** Ulcerated, poorly differentiated cSCC (depth 5 mm) arising on a background of actinic field change on temple of a male organ transplant recipient on long-term immunosuppression

■ **Figure 6.** Cutaneous horn arising from a moderately differentiated cSCC (depth 4.3 mm) on temple. Note the characteristic broad indurated base



making a working diagnosis of cSCC rather than BCC to expedite referral for urgent excision or diagnostic biopsy.

In England and Wales, when cSCC is suspected, GPs refer using a pro forma via the 'two-week wait' pathway. In Scotland, referral letters are vetted and patients can then be seen on an urgent basis in skin tumour clinics; the details in the referral are left to the GP's discretion, with a free-text box rather than a pro forma. The use of a pro forma does help in identifying cSCCs and lesions that are high risk ('tick boxes' are included for rapidly growing indurated lesions, organ transplant recipients, history of excessive sun exposure and fair skin). However, studies show that 'two-week wait' referrals for suspected skin cancer often do not contain adequate information to allow appropriate prioritisation,[10,11] indicating a need to consider a broader range of factors than those included on the current pro forma. It has also been shown that a proportion of cSCCs are referred to, and seen in, routine dermatology clinics, which inevitably leads to a delay in diagnosis with a potential risk of tumour progression.[10] Clinical photographs accompanying referrals can be helpful, and lead to a routine referral being upgraded to an urgent one.

Risk stratification

High-risk cSCCs are tumours that are more prone to local or regional recurrence and the development of distant metastases (for example, lung metastases). Overall, these tumours form a small proportion of the cases seen in practice, but identifying them is important as they require prompt and often more aggressive management.

Tumour site is an important risk factor, with cSCCs arising on the ear, nose, lip, eyelid and scalp being considered high risk. cSCCs arising within an area of previous trauma or chronic skin disease (for example, thermal- or radiation-injured skin, leg ulcers, burns or scar tissue) should also be considered high risk. As may be expected, tumour size

Table 1. Resources for healthcare professionals and patients

Healthcare professionals	Patients and relatives
Scottish Intercollegiate Guidelines Network Clinical guideline 140: *Management of primary cutaneous squamous cell carcinoma.* www.sign.ac.uk/pdf/SIGN140.pdf	**Skin Cancer Foundation** www.skincancer.org
National Institute for Health and Care Excellence *Improving outcomes for people with skin tumours including melanoma.* www.nice.org.uk/guidance/csgstim/resources/improving-outcomes-for-people-with-skin-tumours-including-melanoma-the-manual-2006-guidance2	**Macmillan Cancer Support** www.macmillan.org.uk
British Association of Dermatologists www.bad.org.uk	**Maggie's Centres** www.maggiescentres.org
DermNet NZ www.dermnetnz.org	**Marie Curie Cancer Care** www.mariecurie.org.uk

is a prognostic indicator, with tumours greater than 2 cm in diameter more likely to metastasise.[1] Patient factors should also be taken into account: current data show that immunocompromised patients have an increased risk of metastasis.[12] This is of particular significance in patients who are on long-term immunosuppressive regimens following organ transplantation, although patients with haematological malignancies or HIV infection are also likely to be at increased risk.

Histological factors associated with high-risk cSCC include tumour depth greater than 4 mm or extension beyond the dermis into, or through, the subcutaneous fat. Perineural invasion is also considered a high-risk characteristic.[1] A wide array of histological subtypes of cSCC exists, although most tumours are of no specific type (classic subtype). A minority of cSCC subtypes demonstrate more aggressive behaviour and should, therefore, be considered high risk. In particular, the desmoplastic subtype has been shown to be a risk factor for local recurrence and metastasis (see Box 5).[13]

Box 5. High-risk features of cSCC[13]

High-risk clinical features
- Tumour diameter >2 cm
- cSSC arising in ear, nose, lip, eyelid or scalp
- Immunosuppression
- Pain/tenderness
- Rapid growth
- Special clinical situations (eg burns, scar tissue, chronic inflammatory skin conditions)
- Rare genodermatoses (eg xeroderma pigmentosum, dystrophic epidermolysis bullosa)

High-risk histological features
- Tumour depth >4 mm
- Tumour invasion into or beyond subcutaneous fat
- Perineural invasion
- Poor differentiation
- Desmoplastic subtype

Management of SCC

The primary aim of cSCC treatment is complete removal of the tumour and prevention of metastases. A number of options are available, and the choice of treatment should be determined by the characteristics of the tumour and individual patient factors. Identifying the small subset of tumours with a poor prognosis is paramount so that aggressive treatment can be initiated urgently.

Standard surgical excision remains the treatment of choice in the majority of cases. The appropriate size of excision margins is an area of uncertainty with a limited evidence base available. In most cases, a minimum of 4 mm peripheral margins is recommended. In high-risk tumours a minimum of 6 mm may be advantageous if surgically achievable.[1] For tumours that involve critical anatomical sites (such as the nose and eyelids) or where resection margins are likely to be challenging, consideration should be given to maximum histological assessment of the peripheral and deep margins of the specimen, and Mohs micrographic surgery, when available, can be used.

Other treatment modalities, such as curettage and cautery or deep-shave excision, may have a

Key points

- Cutaneous squamous cell carcinoma (cSCC) is the second most common type of skin cancer in the UK, with a wide range of clinical presentations, which can make diagnosis challenging.
- The initial clinical evaluation of a suspected cSCC should determine whether any high-risk features are present.
- Most cSCCs are classified as 'low risk' based on clinical and histopathological features and are cured by adequate excision.
- The identification of patients with 'high-risk' clinical features is important to prompt urgent referral and optimal management by an experienced skin cancer specialist(s).

role in certain patients with low-risk tumours, although there is insufficient evidence to recommend their routine use.[1] Radiotherapy as the primary treatment modality may be appropriate where surgical excision is not feasible or extremely challenging. It may be of particular value in frail elderly patients with multiple co-morbidities. Adjuvant radiotherapy may be used in patients who have a high risk of local recurrence following surgical excision. Discussion of high-risk cases and incompletely excised tumours at multidisciplinary team meetings is recommended by the National Institute for Health and Care Excellence and the Scottish Intercollegiate Guidelines Network.[1,14]

Prevention

Patients diagnosed with cSCC should be advised on general measures to reduce exposure to UV radiation. Treatment of premalignant lesions such as AKs and intraepithelial carcinoma may help prevent the development of cSCC in predisposed individuals. Patients who are immunosuppressed, particularly after an organ transplant, should receive written guidance as to the clinical signs and symptoms of skin cancer. A number of patient information websites are available (see Table 1). In those with high-risk cSCC, follow-up appointments are recommended every three to six months for a period of 24 months following diagnosis, to check for local recurrence, metastases or new primary lesions[1] ■

Declaration of interest
The authors declare that there are is no conflict of interest.

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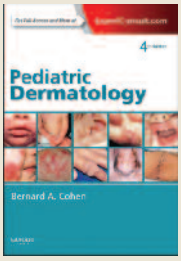
Bookshelf

Pediatric Dermatology, 4th edition

Cohen BA. Saunders Elsevier, 2013: £56.99
Available online at: www.expertconsultbook.com



Content: ★★☆
Teaching: ★★☆
Reference: ★☆☆
Illustrations: ★★★
Readability: ★★☆

I enjoy looking at pictures – for me they are much more memorable than text. I suspect that is why I like dermatology. When learning to read with Ladybird Books, I would use the pictures to guess what the words were. Even now, I prefer to look at pictures in books and magazines than reading the text.

Pediatric Dermatology is an ideal book for me: it features lots of really good clinical photographs to illustrate the conditions, augmented with relevant (but not too much) text to back them up. The intended audience is paediatricians and GPs with a special interest in dermatology – but in reality it would be a good primer for those in training too.

The book starts with an introductory chapter which is well written and interesting, although it includes some lists of preparations that are common in the USA but are not available, or have a different name, in the UK.

This is followed by a chapter on neonatal dermatology, and subsequently by a series of chapters on different types of rashes (for example, papulosquamous eruptions, vesiculopustular eruptions, and so on) reflecting the non-specialist target audience. The final chapter tackles factitial dermatoses, a difficult yet important area that is often neglected.

I particularly liked the anatomical diagrams illustrating the sites of the pathology in the skin, as well as the diagrams showing the distribution of rashes. The book also contains some diagnostic algorithms – but these are tools that just don't seem to work for me.

It is the quality of the photographs which makes this book stand out. There are lots of them and they are of a high standard. So, if like me you like a visual primer, this is a good one ■

It is the quality of the photographs which makes this book stand out. There are lots of them and they are of a high standard

Neill Hepburn MD FRCP Consultant Dermatologist, Lincoln County Hospital

DERMATOLOGY IN PRACTICE 2014; Vol 20 No 3

Janika Borg
MD MRCP Dermatology Speciality Registrar
David Burden
MD FRCP Consultant Dermatologist, Western Infirmary, Glasgow

How to approach flexural psoriasis

Flexural psoriasis is a variant of psoriasis that affects the intertriginous areas of the skin, namely the axillae and the inframammary skin (see Figure 1), the retroauricular area, the periumbilical area, the intergluteal cleft and the inguinal creases. It is thought that between 3% and 12% of patients with psoriasis have flexural involvement.[1] Flexural psoriasis may coexist with psoriasis elsewhere on the skin, most commonly chronic plaque psoriasis; however, involvement may be solely flexural, in which case the term 'inverse psoriasis' is sometimes used.[2] It often coexists with psoriasis affecting the genital skin. The flexural areas may also be involved as part of generalised pustular psoriasis, a less common type of psoriasis which is characterised by widespread pustules on a background of erythematous, tender skin. Flexural involvement is particularly common in infants and young children, and in fact a significant proportion of those diagnosed with napkin seborrhoeic dermatitis go on to develop psoriasis later on in life.[3]

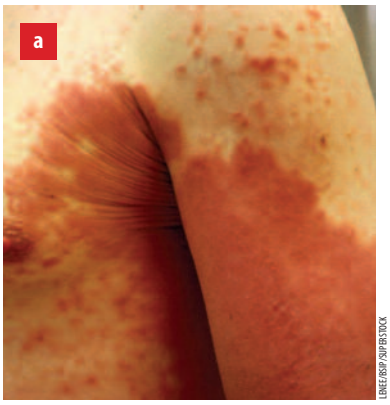
History taking

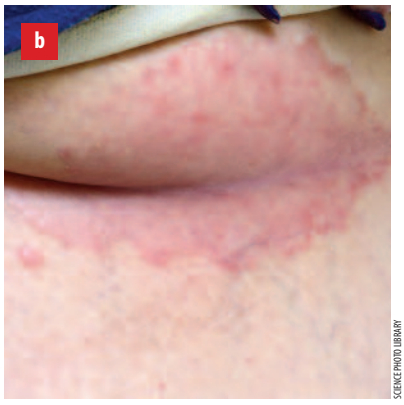
Flexural psoriasis tends to run a chronic course, so patients might have had the condition for months or even years prior to presentation. The chronicity of the rash is a clue to diagnosis, and this helps to differentiate it from more acute flexural rashes, such as infections. It is not uncommon for patients to have been treated repeatedly, but unsuccessfully, for presumed candida infection. Uncomplicated flexural psoriasis can be asymptomatic but many patients complain of itch, embarrassment and, particularly if maceration or infection occur, pain and malodour. A personal or family history of other types of psoriasis or psoriatic arthritis should be enquired about. An account of what over-the-counter or prescription medications have helped or aggravated the condition will help to plan future treatment. Quality of life measurements, like the Dermatology Life Quality Index (DLQI), may help assess the impact the condition is having on various aspects of the patient's life.

Skin examination

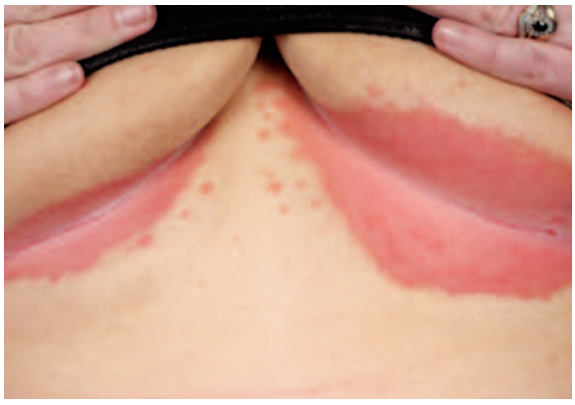
When a patient presents with a flexural rash, the whole skin should be examined. The diagnosis of flexural psoriasis is relatively easy when there are classic signs of psoriasis elsewhere; however, diagnosis may be more challenging when the condition occurs in isolation. Signs of psoriasis should therefore be searched for, with particular attention to the hairline, extensor surfaces, umbilicus and nails. Flexural psoriasis differs from psoriasis affecting other regions, as the typical thick scale of psoriatic plaques is absent. Instead, flexural psoriasis is characterised by pink or red, shiny, sharply defined, thin plaques with little or no scale (see Figure 2). Because intertriginous areas are subject to a greater degree of moisture and friction than other areas, there is a higher risk of maceration and secondary bacterial or fungal infections than in other types of psoriasis. The risk is higher in obese patients and those with urinary or faecal incontinence. Signs of suprainfection may include erosions or fissuring of the plaques, exudate, malodour, increased erythema and tenderness.

The Psoriasis Area and Severity Index (PASI) is used to measure the severity and extent of involvement with chronic plaque psoriasis by taking into account the surface area involved, the thickness





■ **Figure 1.** The axillae (a) and the inframammary regions (b) are common sites of involvement in flexural psoriasis



■ **Figure 2.** Typical plaques of flexural psoriasis: well-demarcated, with a shiny pink appearance; there is an absence of scaling but some erosions are present

and the degree of erythema and scaling of the plaques. It is, however, not a suitable assessment tool for flexural psoriasis namely because, as mentioned above, scale is generally absent.

Differential diagnosis

Other conditions that typically affect intertriginous areas should be considered. Intertrigo, caused by candida infection, presents as acutely eroded, red areas that may have satellite papules or pustules at the periphery. Tinea cruris caused by dermatophyte infections tends to run a more chronic course, and presents with a sharply demarcated red rash with a raised, scaly, advancing border, mainly affecting the inner part of the upper thighs and the crural folds. In long-standing infections, pustules, papules and vesicles may develop. Other sites at risk for dermatophyte infection, like the toenails and interdigital spaces, should be checked. Erythrasma is a flexural rash caused by the organism *Corynebacterium minutissimum* and consists of red–brown macules, which fluoresce coral red with Wood's light. Seborrhoeic dermatitis may involve the intertriginous areas, with other areas of predilection being the centre of the face, the scalp and presternal skin, where it is characterised by orange–pink patches with an overlying yellowish scale. Eczema may affect the intertriginous areas as part of generalised atopic eczema; however, it maybe be localised to the flexural areas, particularly when it is caused by contact with an allergen or irritant. Although eczema is usually easily distinguished from psoriasis by its appearance and less well-defined borders, sometimes differentiation is less straightforward, particularly when lichenification due to chronic scratching has occurred. Hailey–Hailey disease is an uncommon, inherited skin disorder causing a painful intermittent erosive rash in the skin folds.

Investigations

The diagnosis of flexural psoriasis is usually a clinical one. Where diagnosis is uncertain, a biopsy may help. Epidermal hyperplasia, parakeratosis and elongation of the rete ridges are the expected histological changes in psoriasis. If candidiasis or bacterial suprainfection is suspected, a swab for culture and sensitivity is useful. Skin scrapings for mycology are indicated if tinea cruris is likely.

Treatment

Flexural psoriasis, like other types of psoriasis, runs a chronic course and no definitive cure is available. Patients should be made aware of this fact so that they have realistic expectations and also, hopefully, to help them adhere to treatment. Treatment modalities include topical preparations and systemic agents. Phototherapy treatment, used in psoriasis affecting the body elsewhere, is not a good option for flexural psoriasis because of problems with the penetration of the therapeutic light. The choice of treatment depends on disease severity, patient preference and the presence of comorbidities. In addition to specified therapies, general measures like keeping the affected areas dry and clean to avoid infective exacerbations also play a role. Obesity is a risk factor for flexural psoriasis and weight loss should be encouraged.

Table 1. First- and second-line topical treatments for flexural psoriasis

First-line treatment	Second-line treatments
Mild-to-moderate-potency corticosteroids	Calcineurin inhibitors
	Vitamin D and vitamin D analogues
	Tar

Topical treatment

The choice of topical agent to use for flexural psoriasis has to take into consideration the vulnerability of flexural skin to side effects like irritation and corticosteroid-induced atrophy.[4,5] Topical treatments available for flexural psoriasis comprise topical corticosteroids, vitamin D analogues, topical calcineurin inhibitors and tar (see Table 1). Dithranol and topical retinoids are irritants and usually too harsh on flexural skin.

Topical steroids

A systematic review of treatments for flexural psoriasis found that topical corticosteroids of moderate potency are superior in efficacy to calcipotriol and pimecrolimus;[6] however, flexural and genital skin are particularly susceptible to steroid atrophy and the development of striae and telangiectases, so corticosteroids should be used with caution. Ideally, potent and very potent corticosteroids should be avoided, and moderate-potency corticosteroid use should be limited to once or twice a day for a limited period of time, ideally not more than two weeks per month. Moderate topical corticosteroid preparations with added antimicrobials may be useful when maceration and infection are an issue.

Topical calcineurin inhibitors

Topical tacrolimus and pimecrolimus can be useful, particularly when frequent corticosteroid use is a concern, as they provide an anti-inflammatory effect without causing skin atrophy.

Topical vitamin D and vitamin D analogues

Calcipotriol and tacalcitol are vitamin D analogues; calcitriol is an active form of vitamin D. While calcipotriol is frequently used for plaque

Treclin® gel combines efficacy against key pathological processes causing acne with good tolerability and ease of use

Treclin® gel (clindamycin 1% and tretinoin 0.025%) provides a new topical fixed-dose combination treatment for acne in a novel aqueous gel combining efficacy against key pathological processes causing acne.

Targeting key pathological processes causing acne

Treclin® gel combines two active substances - clindamycin 1% and tretinoin 0.025%[1] - with complementary mechanisms of action[3] against the underlying processes causing acne:

- Clindamycin's antibacterial activity combats colonisation of skin follicles by *Propionibacterium acnes* bacteria and its anti-inflammatory effects reduce the release of inflammatory mediators into the skin[1].
- Tretinoin inhibits changes in keratinisation that lead to blocked pores (comedones and microcomedones) and normalises desquamation, as well as having anti-inflammatory effects. In combination, tretinoin increases the penetration of clindamycin[1].

It is indicated for the topical treatment of acne vulgaris when comedones, papules and pustules are present in patients aged 12 years and older[1].

> Consultant Dermatologist Dr Daron Seukeran said, "Using Treclin® gel meets latest evidence based guidelines[4] recommending a combination of a topical retinoid plus an antimicrobial agent as first-line treatment for most acne patients, targeting as many pathophysiological factors as possible and both inflammatory and non-inflammatory acne lesions."

Optimising efficacy and tolerability

Clinical trials in acne show that Treclin® gel achieves significantly greater reduction in both inflammatory and non-inflammatory acne lesions and better clearance of acne than either of the active ingredients used alone[3]. Currently available evidence shows a low potential for the development of antibiotic resistance over 12 weeks of treatment[1].

Treclin® gel's innovative formulation has been designed to optimise its efficacy and tolerability. The highly micronized particles of tretinoin are small enough to enter the follicles so they can act at the site of the pathological processes leading to acne[2]. The two active agents are combined in a novel aqueous based gel that is alcohol free[2] and clinical trials show it is well tolerated in most patients, with few experiencing itching, burning or stinging[3]. An inert polyacrylic carbomer gel acts as a carrier of the water-insoluble tretinoin allowing its ***slow release*** via the aqueous medium[5].

Patients can perceive acne flaring (a transient increase in inflammatory lesions during the first few weeks of treatment) as treatment failure, causing them to discontinue therapy[6]. Treclin® gel shows a low potential for acne flaring[7].

Optimising patient adherence: ease of use and fast onset of action

Treclin® gel is simple for patients to use, with a once daily at bedtime dosage regimen[1]. It is easier to handle than some other forms of tretinoin[5] and does not contain benzoyl peroxide, and has no special requirements for handling or disposal[1]. A further benefit is its fast onset of action, reducing both inflammatory and non-inflammatory lesions vs. its monotherapy components[3].

"Rapid onset of action can be an important factor influencing adherence. Patients are more likely to adhere to acne treatments that act quickly. Poor adherence is a common cause of acne treatment failure[4]," concluded Dr Daron Seukeran.

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NEW

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Treclin® is a unique formulation[2] that:

- has a rapid onset of action vs its component monotherapies[3]
- effectively treats both inflammatory and non-inflammatory lesions[4]
- is well tolerated[1]
- is alcohol free[5]

MEDA

Prescribing Information: Treclin® 1 %/0.025 % w/w gel Presentation: Each gram of gel contains 10 mg (1%) clindamycin (as clindamycin phosphate) and 0.25 mg (0.025%) tretinoin. **Indications:** For the topical treatment of acne vulgaris when comedones, papules and pustules are present in patients 12 years or older. **Dosage:** *Adults and adolescents (≥ 12 years)* - Once daily at bedtime the entire face should be washed with mild soap and dried. A pea-sized amount of medication should be squeezed onto one fingertip, dot onto the chin; cheeks, nose, and forehead, then gently rub over the entire face. Treatment with Treclin should not exceed 12 weeks of continuous use without careful evaluation. **Contraindications:** In patients, who have a history of hypersensitivity to the active substances clindamycin and/or tretinoin or to any of the excipients or lincomycin; with regional enteritis, ulcerative colitis, or history of antibiotic-associated colitis; who have a personal or familial history of skin cancer; who have a history of acute eczemas, rosacea and perioral dermatitis; with pustular and deep cystic nodular acne varieties (acne conglobata and acne fulminans). **Warnings and precautions:** Treclin is not for oral, ophthalmic, intranasal or intravaginal use and is not recommended in treatment of mild acne vulgaris. It should not be used in pregnancy, especially during the first trimester, and in women of childbearing potential not using contraception. Contact with the mouth, eyes and mucous membranes and with abraded or eczematous skin should be avoided. Use of more than the recommended amount or too frequent application may cause redness, stinging and discomfort. Because of increased susceptibility to UV radiation, photosensitivity may occur during treatment. Exposure to sunlight should therefore be minimised appropriate sunscreen products with a SPF of at least 30, together with suitable protective apparel (e.g. a hat), should be used. Long-term use of clindamycin may cause resistance and/or overgrowth of non-susceptible dermal bacteria or fungi although this is a rare occurrence. Cross resistance may occur with other antibiotics such as lincomycin or erythromycin. **Side effects:** May include acne, dry skin, erythema, seborrhoea, photosensitivity reaction, pruritis, rash, exfoliative rash, skin exfoliation, sunburn. Application site reactions such as burning, dermatitis, dryness, erythema. For a complete list of warnings and side effects, you should consult the Summary of Product Characteristics. **Legal category:** POM **Package quantity and basic NHS price:** Treclin 1% / 0.025% w/w gel, 30g at £11.94 **Product licence number:** PL15142/0249 **Marketing authorisation holder:** Meda Pharmaceuticals Ltd, Skyway House, Parsonage Road, Takeley, Bishops Stortford, CM22 6PU, Tel: 08454 600000 **Date of preparation of prescribing information:** March 2014 UK/TRE/14/0013

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Adverse events should be reported. Reporting forms and information can be found at www.mhra.gov.uk/yellowcard. Adverse events should also be reported to Meda Pharmaceuticals Ltd.

UK/TRE/14/0048 Date of preparation: June 2014.

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psoriasis, when it comes to flexural areas, tacalcitol and calcitriol are preferable as they are less likely to irritate the skin.[7]

Tar

Coal tar has anti-inflammatory properties. It can be an irritant and thus should be used on flexural and genital skin at low concentrations. Other potential side effects include the risk of contact sensitisation and folliculitis.[5,7]

New topical treatments

Tofacitinib is a novel janus kinase inhibitor that is also being developed as an ointment for the treatment of psoriasis.[8] Oral phosphodiesterase inhibitors are new drugs targeting inflammatory conditions such as psoriasis and psoriatic arthritis;[9] topical preparations are also being developed. These agents are undergoing Phase III trials for use in psoriasis, and may become an added treatment option for flexural psoriasis in the future.

Systemic treatments

Systemic agents such as ciclosporin, methotrexate, acitretin and fumaric acid esters are used in secondary care when psoriasis is not adequately controlled by topical treatment alone. In flexural psoriasis, when topical agents are not sufficient to control disease and the patient is distressed, the patient should be referred to secondary care for consideration of such systemic treatments ■

Declaration if interest
The authors declare that there is no conflict of interest.

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Key points

- Flexural psoriasis is a variant of psoriasis that affects the intertriginous areas of the skin. Its chronic course helps to differentiate it from acute flexural rashes.
- When a patient presents with a flexural rash, the whole skin should be examined.
- First- and second-line treatment is with topical agents, but when these are not sufficient to control disease, referral to secondary care for treatment with systemic agents should be considered.

PCDS
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Dr Tim Cunliffe, GPwSI in Dermatology and Skin Surgery, Middlesbrough Specialist Skin Service
Tel: 01707 226 024
Email: pcds@pcds.org.uk
www.pcds.org.uk

It has been another busy period for the PCDS, as we have continued to provide dermatology education across the UK. However, the roadshow has now paused for its summer break before starting again in September. The period leading to Christmas is of particular interest, with our 'Advanced dermoscopy' course in London on 2 October, our 'Skin surgery' course in London on 17–18 October and the 'Scottish meeting' in Glasgow on 8–9 November. The Scottish meeting has a focus on dermoscopy, with UK experts and international speakers coming together to deliver a very exciting programme.

For those not familiar with our surgical courses, these are a fabulous opportunity for anyone wanting either to learn about skin surgery or to improve their skills further. Most of the teaching is hands-on, and is done in small groups with very experienced instructors, including several plastic surgeons.

GPwSI accredication

On a different note, there are new developments for GPs with a special interest (GPwSIs) in dermatology and skin surgery. Until recently, the accreditation of GPwSIs was led by either primary care trusts or deaneries. This is in the process of change, and the Royal College of General Practitioners and British Association of Dermatologists are currently piloting a new system. If you are looking at becoming accredited and wish to be involved in a pilot, then please complete the questionnaire at: www.surveymonkey.com/s/3RLMSCR.
It is likely that the process of reaccreditation will no longer be needed; instead, this will become part of your annual appraisal.

PCDS website

Finally, the PCDS website (www.pcds.org.uk) continues to grow. Some of the most recently added clinical chapters cover hyperhidrosis, dermatitis herpetiformis and hidradenitis suppurativa. Over the next few months, we will be creating video clips that will enable patients and nurses to view techniques such as applying Ichthopaste® (Smith and Nephew) bandages and leg ulcer dressings ■

» *See page 21 for a list of upcoming PCDS educational events.*

Common problems with tattoos – an overview

Victoria Scott-Lang
MBChB MRCP MRCGP DRCOG DFSRH MRCP (Dermatology)
Consultant Dermatologist, Christchurch Hospital, Christchurch, Canterbury, New Zealand

Tattooing in the 21st century is a big business, with an estimated one in five of the British population having a tattoo, as well as millions of individuals worldwide. There are over 1,500 registered parlours across the UK, not including unlicensed tattoo artists. Tattooing is now deeply ingrained in mainstream popular culture.

Although the trend for body art may well be on the rise, the art of tattooing dates back thousands of years. In recent years, there has been increasing interest in, and awareness of, the medical complications associated with tattooing. The tattoo industry is poorly regulated worldwide, and little is known about the long-term effects of tattooing on health. A number of medical complications associated with tattooing are well documented; for example, infection and allergy. More recent concerns regarding potential carcinogenic effects are now starting to be addressed by researchers. Further work is urgently needed to develop worldwide hygiene standards for tattooing practices, and regulate the use of pigments and dyes that are currently used but have no established safety profile regarding their use in humans.

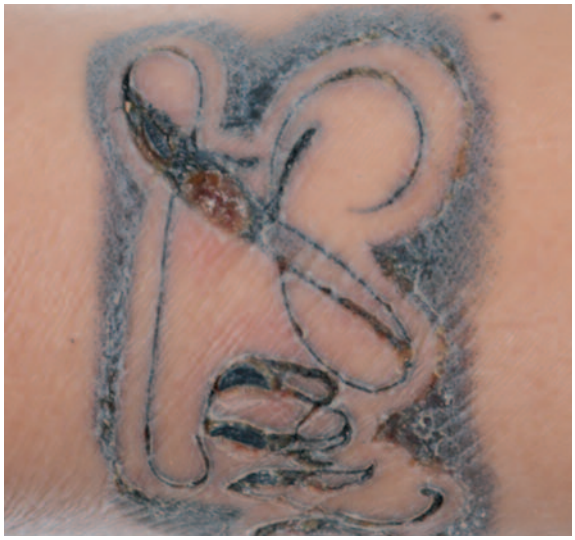
Infection

The risk of infection as a consequence of tattooing has diminished over the centuries due to both better understanding of the transmission of disease and improvements in hygiene. Despite this, the risk of cutaneous infection does remain, and individuals attending unlicensed and unregulated parlours or amateur tattoo artists are at the highest risk. A one-hour tattoo session is estimated to inflict about 180,000 punctures in the skin; therefore it is not surprising that tattoos are associated with cutaneous infection.

A one-hour tattoo session is estimated to inflict about 180,000 punctures

Bacterial infections

In the mid-to-late 19th century, there were reports of individuals developing syphilis related to tattooing. It was routine, at that time, for tattoo artists to use their own saliva to mix the inks, and they would also lick the needle in the process of tattooing. In 1869, a French naval surgeon reported 47 cases of erysipelas and gangrene related to tattooing.[1] The French navy later forbade tattooing, as did the British and Spanish.



■ **Figure 1.** This patient presented with pain and crusting within a new tattoo; swabs showed the presence of *Staphylococcus aureus* and the patient improved with oral antibiotics

With modern awareness and improved hygiene practices, the incidence of bacterial infection has reduced, but this remains a risk. Today, most infections are local infections secondary to *Staphylococcus aureus* (see Figure 1) and *Streptococcus pyogenes*, but deep-seated spinal abscesses[2] and endocarditis[3] have also been reported in recent years.

Rapidly growing mycobacterial cutaneous infections

There are 24 individual reports of rapidly growing mycobacterial cutaneous infections related to tattooing in the literature.[4] These reports comprise 147 probable and confirmed cases of atypical mycobacterial cutaneous infections, including three cases arising as a consequence of permanent eyebrow make-up. The majority of cases were related to *Mycobacterium chelonae,* an environmental organism which is ubiquitous in water and soil. The first outbreak of *M chelonae* infection related to tattooing was reported in France in 2010,[5] and large outbreaks have occurred in the USA.[6]

The only outbreak in the UK to date occurred in Edinburgh in 2011 and 2012; four patients were confirmed to have contracted *M chelonae*, and a further seven suspected to have contracted it showed negative cultures.[7] All patients presented with papules, erythema and pustules within grey

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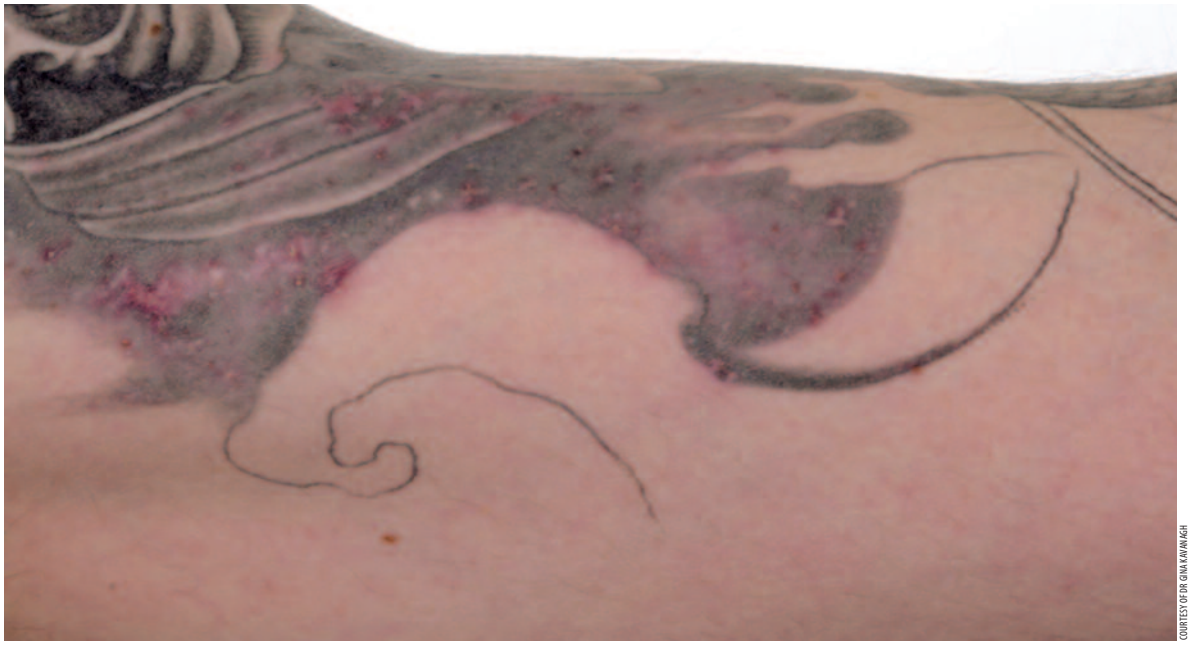


Figure 2. This patient presented with erythema and papules within the grey areas of the tattoo; skin culture confirmed the presence of *Mycobacterium chelonae*

areas of tattooing, identical to the symptoms seen in France and the USA. The two tattoo parlours identified as the source of the outbreak were visited by the local licensing authorities. Inspection of the premises and practices was undertaken, and microbiological analysis of both opened and unopened ink was performed. Similarly to what happened in other outbreaks of *M chelonae,* tattoo artists admitted to having mixed black ink with non-sterile water to form a grey colour – which explains why the infection was confined to the areas of grey tattooing (see Figure 2) – and also used non-sterile water for rinsing the tattoo needle.

Following these recent outbreaks in the UK and abroad, and given the increasing popularity of tattooing throughout the world, it is necessary to establish international guidelines on sterility techniques in tattoo parlours; to prevent further similar outbreaks these guidelines should specifically prohibit the use of non-sterile water.

Viral infections

Two case reports of suspected tattoo-related HIV infection in the United States were published in 1988.[8] The individuals, who had been tattooed in prison with non-sterile needles, were later found to have HIV infection; one of them had no other risk factors for contracting a blood-borne virus. A review of the literature pertaining to tattooing and viral infection has indicated that there is strong evidence supporting the risk of hepatitis B, hepatitis C and syphilis infection through tattooing, but the evidence is less clear with regards to HIV.[9] A systematic review and meta-analysis demonstrated that tattooing was associated with an increased risk of hepatitis C infection, particularly when tattoos were performed by amateurs or in non-professional parlours.[10]

With hepatitis C infection now being the most common indication for liver transplantation in the USA, and second most common in the UK, public awareness of the modes of transmission of hepatitis C virus needs to be improved. Education should be specifically aimed at young adults who are contemplating having a tattoo.

Issues with inks

Inks used for tattooing contain a multitude of complex chemical substances, yet they are not regulated. There is currently no EU-wide regulation on the constituents of tattoo ink. In the USA, tattoo inks are regulated as cosmetics, whereas the pigments within the inks are regulated differently. To date, the US Food and Drug Administration has not specifically approved any inks for tattooing.

Pigments were not designed for use in humans but for use in industry

There is increasing recognition that urgent work is required to establish the safety profile of the pigments and dyes that comprise coloured tattoo inks. Traditionally, coloured tattoo inks predominantly contained heavy metals such as mercury, chromium and cadmium, but advances in the field of organic chemistry have led to a change in their constituents. Coloured inks now contain organic azo compounds. These pigments were not designed for use in humans but for use in industry; for example, for spray-painting cars. They can be degraded by light and may break down to form potentially hazardous aromatic amines. The effect of these on human health is not yet established. Black tattoo ink is manufactured from soot and

contains polycyclic aromatic hydrocarbons, which are potentially carcinogenic.

At present, the biological effects of both black and coloured tattoo inks are unknown. What happens with the by-products of these inks after laser tattoo removal is also uncertain.

Allergy

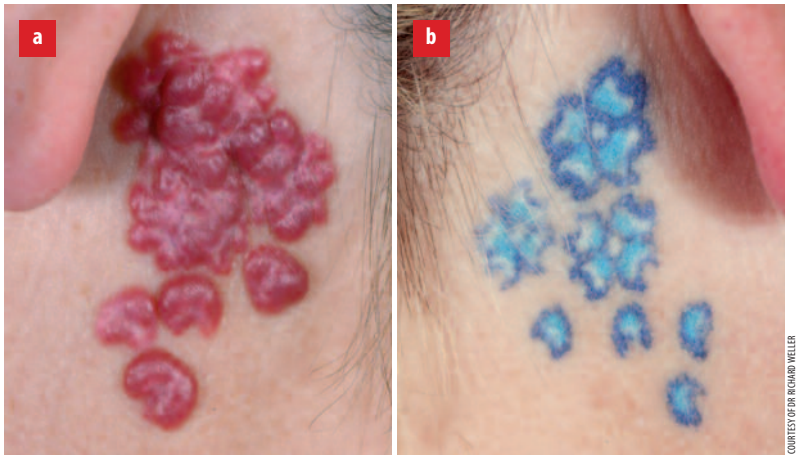
Allergic reactions to tattoos are diverse. In the acute phase, direct tissue injury and injection of foreign pigment into the skin can cause an inflammatory reaction which generally settles quickly. Immediately after tattooing, patients sometimes apply topical antiseptic preparations and emollients recommended by the tattoo artist to promote healing. In sensitised individuals, these preparations themselves may cause an acute allergic contact dermatitis.

Later, patients may develop an allergic response to the tattoo, which can manifest in a number of ways, both clinically and histologically. Clinically, the most common presentation is an eczematous eruption secondary to allergic contact dermatitis. Some patients will develop photoaggravated dermatitis, whereas others may develop exfoliative dermatitis. Histology of a hypersensitivity reaction will typically show spongiotic dermatitis, or less commonly a lichenoid reaction, usually to red dye.

Contact allergy

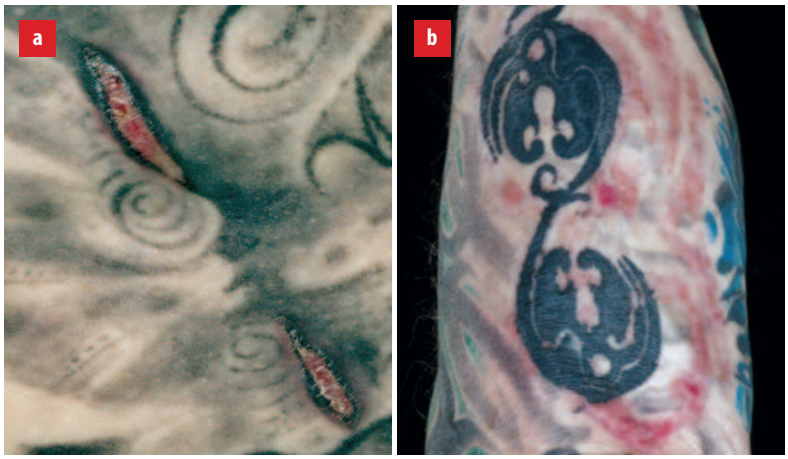
Contact allergies to tattoos are colour-specific, and will cause a confluent reaction within all areas tattooed with the colour causing the allergy. The classic tattoo-related contact allergy is to red ink (see Figures 3a and 3b). Reactions can appear months or years following tattooing (see Figures 4a and 4b). The reason for the delayed onset of an allergic reaction to tattoo ink is not clearly understood. Older traditional red dyes contained high concentrations of mercury sulfate (cinnabar), and it is assumed that this was the responsible allergen; however, despite its removal from most modern dyes, red ink continues to cause allergic reactions. The reason for this remains unclear, and since red is the most common colour used in tattooing, it can be a significant problem. Patch testing is generally considered to be unreliable; despite dramatic appearances clinically, subsequent patch testing to textile dyes and tattoo inks is often negative.[11] Formal excision of the affected area may be indicated for non-healing areas.

Temporary 'black henna' tattoos often contain para-phenylenediamine (PPD), which can cause significant and severe allergic contact dermatitis. Affected patients must avoid future exposure to PPD, particularly in hair dye, and to its cross-reactants, which include azo dyes and parabens.



COURTESY OF DR RICHARD WELLER

■ **Figure 3a and 3b.** This patient developed an allergic reaction to a red tattoo behind the left ear (Figure 3a). The same patient had the same design tattooed behind the right ear, but with blue ink; there was no allergic reaction (Figure 3b)



■ **Figures 4a and 4b.** This 58-year-old man had extensive tattooing performed on his arms as a teenager; some 42 years later he developed intense inflammation confined to the areas of red pigment. Allergy to red ink can occur many years after tattooing but the reason for this is not clear

Photoaggravated dermatitis

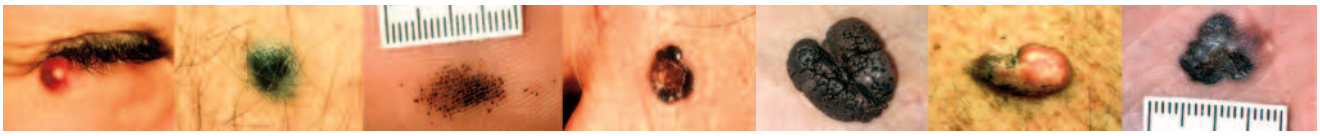
Patients may notice pain, burning and swelling of their tattoo when it is exposed to sunlight. Yellow inks, which contain cadmium sulfate, are typically the cause of this phenomenon, but it is also, albeit less commonly, seen with red ink, which may contain smaller amounts of cadmium added to brighten the colour. The pathological basis for this reaction is not known, but it is supposed that cadmium itself is a photosensitiser.

Granulomatous reactions

Granulomatous reactions to tattoos are well recognised: they are an immunological response to foreign material. However, since sarcoidosis may koebnerise in tattoos, this reaction pattern can cause a diagnostic dilemma. In individuals developing a granulomatous reaction to their tattoo, it may be necessary to investigate fully for systemic disease to either confirm or exclude sarcoidosis.

Pseudolymphoma

Less commonly, patients may develop pseudolymphoma as a delayed tattoo reaction.



DERMATOLOGY

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Top Tips in Dermatology
- 22nd November, Manchester

Educational Meetings for 2015

Spring Meeting
- 14th/15th March, Warwickshire

Summer Meeting
- 18th June, Cambridge

Autumn Meeting
- 10th September, Liverpool

Scottish Meeting
- 7th/8th November, St Andrews

Advanced Dermoscopy
- 19th March, Manchester
- 1st October, London

For 2014/15 meetings please go to www.pcds.org.uk

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Clinically, this may manifest as fleshy nodules and plaques appearing within the tattoo, and can appear alarming. Biopsy is required to make the diagnosis histologically. Yet again, red tattoos appear to be the most frequent culprits.

Treatment of pseudolymphoma can be challenging. Options include surgical excision, intralesional corticosteroids and laser therapy.

Skin cancer

A comprehensive review of the literature pertaining to tattoos and skin cancer was published in 2012.[12] The authors found 50 cases of skin cancers on tattoos, comprising 23 squamous-cell carcinomas and keratoacanthomas, 16 melanomas and 11 basal cell carcinomas. Given the millions of individuals tattooed worldwide, the reported incidence of skin cancer within tattoos is extremely low, and is thus currently considered coincidental. In recent years, there has been an increasing number of case reports describing the appearance of keratoacanthomas and pseudoepitheliomatous hyperplasia within tattoos. It is assumed that genuine keratoacanthomas are induced by the traumatic act of tattooing; they will typically develop within one week of tattooing, but can appear up to one year after. Several cases of pseudoepitheliomatous hyperplasia have also been described after tattooing.

Removal of tattoos is expensive and may not be cosmetically satisfying

With respect to skin cancer, patients should ideally avoid the placement of tattoos over pre-existing naevi, otherwise the surveillance of these lesions will be difficult. Dermatoscopic examination will be all the more challenging in the presence of tattoo pigment that appears as black or blue globules, and may mimic melanocytic naevi structure.

Regret and removal

A significant number of people do regret having had a tattoo in later life. Of over 600 individuals with visible tattoos who were surveyed in the UK, nearly one in three regretted their tattoo.[13] More men than women regretted their tattoos, particularly those that had been performed when they were under the age of 16. The majority of people who regretted them had been tattooed on the upper body.

The laser removal of tattoos is expensive and may not always be cosmetically satisfying. Individuals may need to attend up to ten sessions and the total cost may amount to several hundred pounds. Provision of NHS-funded laser removal varies around the UK, but few people will qualify. NHS-funded laser removal may be available if the tattoo is on the face, neck or hands, or if has been performed by an amateur. Information obtained under the Freedom of Information Act showed that, over a five-year period, one health board in Scotland spent £600,000 on tattoo removal, having paid for 2,007 treatment sessions performed on 204 individuals. However, access to NHS-funded treatment is not equal across the UK, and many individuals will need to undergo laser tattoo removal in the private sector.

Considering that the cosmetic industry – in particular the operating of lasers – is largely unregulated in the UK, this also gives rise to concerns. Risks associated with laser removal of a tattoo include scarring, burns, pigmentary change and infection, and these should be considered by individuals undertaking such a treatment, particularly if they are thinking of attending an unqualified laser operator. Furthermore, the fate of tattoo pigments in the body following laser removal is not known, and there may be long-term health implications.

Effects on employment

Individuals contemplating having a tattoo should consider the consequences this may have on their future employment prospects. In the UK, under the Equality Act 2010, tattoos, body art and piercings are not classified as protected characteristics. Employers are therefore entitled to reasonably refuse to employ an individual with visible tattoos.

A number of UK employers have policies on tattooing, including the Metropolitan Police, the Royal Air Force (RAF), British Airways and HMV. The Metropolitan Police requires individuals to supply photographs of any tattoos with their application, and those deemed unacceptable will be rejected.[14] Applicants with tattoos on the face, visible above the collar line or on the hands will not

Key points

- The tattoo industry is poorly regulated worldwide.
- Tattoos are a port of cutaneous infection. Recently, outbreaks of *Mycobacterium chelonae* have been reported in Scotland, France and the USA.
- Tattoo inks contain carcinogenic substances and their long-term safety is not established.
- Many people later regret having had a tattoo, and there are risks related to laser tattoo removal, which is expensive with no guarantee of satisfying results.
- Having a visible tattoo may have a negative effect on a persons employment prospects.

be accepted for any role, and all other tattoos must be covered at all times. Tattoos that could be construed as offensive towards any religion or beliefs, or that are in any way discriminatory, violent or intimidating, are not accepted, irrespective of their site. The RAF does not employ people with tattoos, that will be visible under service uniform, which includes any above the neck collar or on the hands, wrists or ankles.

Research carried out at the University of St Andrews in Scotland found that hiring managers might be prejudiced against people with tattoos purely based on their appearance.[15] Qualitative interviews were performed with 15 hiring managers recruiting for jobs in hotels, restaurants, shops and the finance industry. All described negative feelings towards candidates with visible tattoos, some expressing concerns that customers may perceive these as 'repugnant', 'unsavoury' or 'untidy'. The majority admitted that a visible tattoo would preclude a candidate from getting a job.

Conclusion

Although the art of tattooing has been practised for thousands of years, it is not without risks. Individuals considering a tattoo should be aware of the risk of infection, the possible long-term carcinogenic effects of modern inks, the difficulties associated with laser removal and the potential effects on employment perspectives. The tattoo industry is poorly regulated worldwide. Work is required to establish the safety of inks, regulate and standardise hygiene practice in tattoo parlours, and establish the carcinogenic effects of tattooing ■

Declaration of interest
The author declares that there is no conflict of interest.

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» Forest Pines Hotel, North Lincoln, 9 October 2014

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» America Square Conference Centre, London, 17–18 October 2014

Essential Dermatology
» Crowne Plaza City Centre, Birmingham, 23 October 2014

Dermoscopy for Beginners
» Cheltenham Chase Hotel, 13 November 2014

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» Ashford International Hotel, 20 November 2014

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DERMATOLOGY IN PRACTICE 2014; Vol 20 No 3

■ Henry Plummer pioneered the modern medical record with individual patient registration numbers

THOMAS IMO/PHOTOTHEK/GETTY IMAGES

Uncompromising excellence

Unless you are a collector of obscure medical eponyms (Plummer's nails, Plummer–Vinson syndrome), you have almost certainly never heard of Dr Henry Plummer (1874–1936), and that's a pity, because he is one of the most important people in 20th-century medicine and we have a lot to learn from him.

Barry Monk MA FRCP
Consultant Dermatologist, BMI The Manor Hospital, Biddenham, Bedfordshire

In 1901, William and Charles Mayo invited the recently qualified Henry Plummer to join them in their clinic in a rural part of the US Midwest. Later, they were to say that the day they asked him to join them was the best day of work that they had ever done, because it was Plummer who laid the foundations of the Mayo Clinic, which became, and remains to this day, the world's leading centre of medical excellence. The clinic is now spread over sites in Minnesota, Arizona and Florida. Indeed, he has been described by some as the architect of modern hospital practice.

Among Plummer's revolutionary innovations were the introduction of individual medical record folders for patients (hitherto, hospitals used a ledger system for everyone on wards or in clinics) and patient registration numbers to allow continuity of care between repeated admissions or clinic attendances. He was the first to introduce an internal telephone system into hospitals, and built a pneumatic system to transport specimens (100 years before it was introduced into my previous hospital in England). He built research laboratories to be located integrally to the clinical areas of the hospital, and the frozen section and the heart bypass machine are just two of the Mayo innovations that were developed on site which we now take for granted.

Apart from its remarkable and unrivalled record in healthcare and clinical research (and it spends over $500 million a year on research[1]), there are other interesting features of the Mayo Clinic which are worth reflecting upon. It is a non-profit making organisation, and its costs per case are substantially below the North American average. Unusually for the USA, senior doctors are on fixed salaries, so there is no financial incentive or pressure to undertake unnecessary investigations or procedures, and the remuneration that they receive is not as high as in many other major American hospitals; people just want to work there. And its chief executive is (and always has been) a doctor!

Perhaps it is time for us to start aspiring to the standards which can clearly be achieved elsewhere

The Mayo brothers, from the very outset, emphasised their core value of 'putting the needs of the patient first' through collaboration, teamwork and what has been termed 'uncompromising excellence'.

As we reflect on current medical practice in the NHS, where so much emphasis seems to be placed on placating managers by hitting arbitrary targets, which often bear little resemblance to clinical priorities, perhaps it is time for us to start aspiring to the standards which can clearly be achieved elsewhere. If the young Henry Plummer, who started his working life in an obscure rural practice, could do it, surely can some of us ■

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