

Reports on Scientific Meetings

CUHK Dermatology Symposium 2006

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Hong Kong

Surgical hair restoration with direct hair implantation

Speaker: Dr. P Pang

Specialist in Surgery, Private Practice, Hong Kong

Androgenic alopecia is the most common cause of hair loss in male. Various medical treatments are available to slow down hair loss. They include topical minoxidil and oral finasteride. However, they are not without side effects. In cases where hair loss is nearly completed, surgery can be attempted to restore a desirable hairline and density. Previous surgical options include scalp flaps and scalp reduction. Achievement of optimal aesthetic results with these methods is not usually possible. A new method of direct hair implantation (DHI) using micro-follicular unit transfer offers hope for a more natural appearance.

The first step involves the extraction of hair from the donor site. Traditional strip method for hair harvesting leaves behind a long scar which can be obvious when the hair is short. With this new micro-follicular unit transfer method, each graft

unit, consisting of two to three follicles, are extracted from the donor site, creating inconspicuous wounds of only 1 mm in diameter. Continuous cooling and moisturization of grafts are crucial for maximising grafts survival. Preparation of the grafts under microscopy helps to optimise hair bulb preservation and success rate. The grafts are then implanted into the recipient site using a special DHI implanter device. Approximately 1000 to 2000 hair follicles are usually involved in the entire procedure. Creation of a natural hair style depends on the direction, depth and density of the implanted hair, as well as the design of the hairline, hair colour and the amount of hair follicles available for harvesting.

Possible complications of DHI include bleeding, infection, graft loss (telogen phase) and further hair loss as part of the natural course. A second surgery is possible in selected patients. Detailed record and magnified photography should be carried out before and after the procedure to document the result of surgery.

Learning points:

Direct hair implantation technique is a minimally invasive method of hair restoration which avoids the need for the strip method of hair harvesting. A more natural result can be achieved when compared to more traditional surgical methods.

Nail and nail diseases: recognition of signs and update on management skills

Speaker: Dr. Tang Yuk-Ming, William
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The human nails serve many important functions, including protection from noxious stimuli, enhancing finger pulp pressure perception and allowing fine manipulation. Different pathological conditions can affect configuration, surface, nail plate, soft tissue and colour of nails.

Nail cosmetics are popular, but may contain potential allergens and irritants which lead to contact dermatitis of the periungual skin or distant sites. These chemicals include formaldehyde resin, ethyl/butyl acetate, toluene, isopropyl alcohol, acetone, camphor and methylacrylate. Furthermore, manicuring of nail and paring of periungual tissue and nail cuticle by non-medical personnel increase the risk of unguis or periungual irritation and infection.

Melanoma is a rare but potentially fatal condition which can affect the nail. In Orientals, melanoma preferably affects the acral regions. A study conducted on Hong Kong Chinese showed that 50.7% of melanoma belonged to the acral lentiginous subtype. Melanoma can mimic benign longitudinal melanonychia, melanocytic naevus, lentigo and subungual haematoma. Therefore, a high index of suspicion is required for early diagnosis. Distinguishing features of melanoma include progressive widening and darkening of a pigmented band, a positive Hutchinson's sign and nail textural changes or destruction. It should be noted that melanoma may sometimes be amelanotic.

Onychomycosis is a commonly encountered disease in daily clinical practice. It causes not only cosmetic nuisance, but also significant morbidity. Record of nail signs, using either nail chart or digital photos, helps in monitoring disease progress. Tinea unguis is often difficult to treat and prolonging the treatment course may increase

the chance of clearing residual disease. Surgical nail avulsion also has a role in treating grossly thickened nails which are almost resistant to pharmacotherapy.

A number of procedures on the nail bed and nail matrix can be safely performed in a clinic setting. These include insertion of a flexible tubing for early uncomplicated ingrown toe nail and nail avulsion for single grossly thickened onychomycotic nail. To further enhance clinicians' ability to manage nail diseases, modern imaging techniques, like high frequency ultrasound and magnetic resonance imaging, are available nowadays for delineating and localising certain nail lesions, for example in case of small unguis tumour.

Various nail conditions, including onycholysis, trachyonychia, acrodermatitis continua, median canaliform dystrophy, digital myxoid cysts and leukonychia were also discussed.

Learning points:

Nails can be affected by a range of local and systemic conditions. Diagnosing and monitoring of nail diseases require accurate charting of nail signs, a sound knowledge of nail conditions in general, the assistance of histopathological investigations and modern imaging techniques.

Management of acne vulgaris: anything new?

Speaker: Dr. Leung Chi-Yan
Specialist in Dermatology, Private Practice, Hong Kong

Acne vulgaris is a polymorphic eruption characterised clinically by blackheads, whiteheads, papules, pustules, abscesses, cysts and scarring. The underlying pathophysiological factors include: 1) increased sebum production secondary to abnormal metabolism of androgenic hormones; 2) ductal hypercornification; 3) *Propionibacterium acnes* (*P. acnes*) colonising the pilosebaceous apparatus, leading to the conversion of sebum

into free fatty acids, and 4) inflammation of comedones as a result of chemotactic factors and proinflammatory mediators.

The onset of acne is common in adolescence. A local self-reported study in 2002 showed that the prevalence of acne was 91.3% in the 15-25 age group. However, post-adolescent acne appears also to be on the rise. This subgroup of acne typically affects the females in their 30 to 40s. The face and trunk are commonly involved. The course can be mild but chronic with frequent relapses. These patients often fail to respond adequately to multiple courses of antibiotics. In one study looking at the prevalence of facial acne in adults, 32% relapsed after one course of oral isotretinoin. 32.3% responded to treatment with oestrogen and cyproterone, and 37% of the females had at least one feature of hyperandrogenism.

The treatment of acne vulgaris targets at the different underlying pathophysiological factors. The choice of drug should be individualised. Topical treatment may be adequate in mild cases. Benzoyl peroxide is a potent bactericidal agent which can be used alone for mild acne. Face wash containing benzoyl peroxide is also helpful as it is usually less irritating. Topical tretinoin is an effective comedolytic agent which normalises altered pattern of follicular keratinization. Adapalene is a retinoid analogue which is less irritating but with similar efficacy to tretinoin. It can be added to other topical agents or used in combination with systemic treatment. Azelaic acid 20% cream has antibacterial and comedolytic properties and is safe for pregnancy. Topical antibiotics include clindamycin and erythromycin. They are effective agents despite recent evidence showing that the incidence of antibiotic resistance in *P. acnes* is increasing. The significance of this finding in the clinical setting remains to be seen. All these topical agents can be used in combination, the choice of which should depend on their side effects and the feasibility of application. Newer combination agents, e.g. 5% benzoyl peroxide plus clindamycin (Duac), may reduce the risk of development of antibiotic resistance. Other new preparations with

improved formulation, e.g. Retin-A micro and tazarotene, may be more efficacious and better tolerated.

Moderate to severe acne requires systemic medications in addition to topical treatment. Oral antibiotics, notably tetracyclines, are effective but are not without side effects. Hormonal therapy is another choice for female patients, especially in the post-adolescent group with features of hyperandrogenism. It decreases sebum production and is useful for moderate to severe acne. Systemic isotretinoin reduces sebum production and remains a valuable and highly effective treatment for nodulocystic acne. It may also be useful for patients with chronic acne without true remission. Nevertheless, the side effects of isotretinoin, especially teratogenicity and possible association with depression and suicide, should be taken into account when deciding on treatment.

Learning points:

Acne vulgaris begins in adolescence and can persist into adulthood. The psychological burden to the patient should not be underestimated. Choice of treatment modalities, targeting at various pathophysiological factors, should be individualised.

Molecular studies: a back stage tour

Speaker: Dr. Lee King-Chung

Senior Medical Officer, Department of Pathology, Queen Elizabeth Hospital

The core principle of genetic studies is based on the denaturing and annealing of double DNA helix by temperature variation. Basic molecular tests are in-situ tests such as in-situ hybridization and non in-situ tests such as polymerase chain reaction (PCR). In-situ tests allow localisation of signal and morphologic study of chromosomes. The metaphase test can be used in study of the entire

genome and interphase test facilitates study of specific genetic disease. Non in-situ tests analyse short segment of chromosome, allowing close up study of genetic material.

The metaphase in-situ test allows detection of chromosome loss. The use of fluorescent label probe helps to delineate individual chromosome. However there are potential problems such as flaring and overlapping in patients with structural chromosomal rearrangement. It is also impossible to identify intrachromosomal rearrangement. The interphase in-situ test, such as fluorescent in-situ hybridization (FISH), is useful in studying specific disease genes; for example Her-2 gene amplification in carcinoma of breast.

There are several commonly used non in-situ tests. Southern blot was once very popular but had been largely replaced by PCR. Quantitative or real-time PCR has added specificity and is used for the detection of Mycobacterium tuberculosis, SARS coronavirus, and avian influenza virus. Digene's Hybrid Capture 2 test is the FDA approved test that detects HPV DNA in cervical sample. Gene expression profiling by DNA microarray can also help to determine gene expression change.

Learning points:

Analysis of genetic material can dictate the classification of disease, give prognostic information, and provide clues to novel treatment approaches. Understanding basic molecular genetic approach and techniques is essential in clinical practice.

Childhood atopic dermatitis: myths and practices among the Chinese

Speaker: Professor Hon Kam-Lun, Ellis
Associate Professor, Department of Paediatrics, The Chinese University of Hong Kong

Atopic dermatitis is a common chronic relapsing disease that affects 10-20% of children under the

age of 15. The disease occurs as a result of the interaction among various genetic and environmental factors as well as immunological dysfunction. Local beliefs and practices are quite different from those of overseas and tailored advice and treatment must be adopted to improve compliance and outcome.

One of the myths is looking for cure in atopic dermatitis. The parents must therefore be informed that a definitive cure may not be possible. From the viewpoint of traditional Chinese Medicine, there are various types of atopic dermatitis and each is caused by various extrinsic and intrinsic factors. Therefore it is extremely common for parents to restrict diet in their children, especially beef and seafood. Moreover, dietary supplement is also commonly adopted. Non-pharmacologic treatments such as emollient and bath additive are important measures. However, about three quarters of children have shower and some of the family may not have a bathing tub, posing difficulty in textbook bathing advice.

Steroid phobia is also prevalent. There is a common misunderstanding of side effects of topical steroid, resulting in inadequate use of medication and hence poor disease control. Thorough discussion and explanation is necessary as less than 50% of parents discuss this issue with their doctors. Use of systemic treatment is helpful in severe cases and should not be delayed when deemed necessary. Although there is belief that pets, particularly cats and dogs, are bad for atopic children; over 90% of patients do not keep any pets.

The use of traditional Chinese herbal medicine (TCHM) solely, or as an adjunct, in atopic dermatitis is common. For example, the use of Pentaherbs can decrease the SCORAD score, extent of disease and can reduce insomnia secondary to atopic dermatitis. Thus, further evaluation of topical and systemic TCHM is warranted. Breast feeding for the first 6 months of life can reduce the incidence of atopic dermatitis and is well accepted by local parents.

Learning points:

Atopic dermatitis is a common disease affecting local paediatric and adolescent population. Local beliefs and practices are different from the Western world. Advice and management must be tailored according to local scenario in order to achieve good compliance and hence better outcome.

Update on the clinical management of genital wart and human papillomavirus infection

Speaker: Dr. Lo Kuen-Kong

Consultant, Social Hygiene Service, Centre for Health Protection, Department of Health

Genital wart was first described as human disease in 1901. Human papillomavirus (HPV) was first isolated in 1949. HPV was identified as the causative agent of genital wart in 1968. The causal link between HPV and cervical cancer was established in 1993.

HPV is a DNA virus, there are more than 100 subtypes found. Approximately 40 genotypes affect the genital tract. HPV type 16 and 18 are found in more than 70% of cervical cancer and are considered as the high risk subtypes. The major late protein in viral capsid is the main target for HPV vaccine. The E6 and E7 protein are the key proteins in carcinogenesis. Apart from cervical cancer, anogenital carcinoma in both male and female, oral and respiratory tract squamous cell carcinoma are also thought to be related to HPV infection.

The prevalence of HPV infection is much higher than one would expect as a large number of HPV infection is asymptomatic, subclinical and latent. Only about 1% of HPV infection results in overt genital wart. In a study of HPV in cervical cancer done in China, 88% of cases were HPV DNA positive. The most common subtype detected was type 16 (79.6%), followed by type 18 (7.5%) and type 58 (3.8%).

The incubation period of HPV infection ranges from 3 weeks to 8 months. Smoking is one of the adverse factors in clearance of genital wart. Moreover, larger number of genital warts implies delayed clearance. In a study of HPV infection in man, those with more than four lifetime sexual partners were 3.7 times more likely to have HPV infection than those with one sexual partner. Body defense against HPV infection relied mainly on cell-mediated immunity.

The clinical presentation of genital wart is usually quite typical. The diagnosis can be made on clinical examination with or without histopathology, cytology and molecular diagnostics. Treatment has been unsatisfactory as there is no definite cure for the infection. The aim is to induce a clinical remission. Various modalities of treatment have been adopted, however there is no one universally agreed regimen that is 100% safe and effective. Pharmacological agents and physical agents are commonly used, albeit with a relapse rate of 20-40% after 3 months. One study reported a 28% spontaneous regression of genital wart with no recurrence. This supports the importance of innate immunity in HPV infection. Immune modulation therapy with topical 5% imiquimod cream was shown to be effective. Topical cidofovir gel is in clinical trial and is not available commercially.

The newly approved HPV vaccine is a quadrivalent vaccine targeting HPV type 6, 11, 16, 18. It adds new hope in the prevention of HPV infection in female. However, education of safe sex and condom use is still a cost-effective approach to prevent HPV infection and genital wart.

Learning points:

HPV infection and genital wart are common among patients with multiple sexual partners. Infection with high risk HPV resulted in increased risk of cervical cancer and anogenital cancers. Newly developed HPV vaccine offers hope in prevention of HPV infection and hence cervical cancer.