Plastic and Reconstructive Surgery

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BENIGN SKIN TUMOURS AND CONDITIONS

Benign	Premalignant / malignant
Seborrhoeic keratosis	Keratoacanthoma
	Leukoplakia
	Bowen's disease
	Hutchinson's freckle
Naevuses	Basal cell carcinoma
Sebaceous cyst	Malignant melanoma
Lipoma	Squamous cell carcinoma
Neurofibroma	Fibrosarcoma
Haemangioma	Kaposi's sarcoma

The skin is the largest organ of the body. In the average adult it weighs 4 kg and has a volume of 3.6 l and a surface area of 1.8 m². Its many functions include protection against fluid loss by evaporation, regulation of body temperature, and the production and storage of vitamins D and C. It is also a principal organ of sensation. It is a complex structure, composed of the dermis covered by epidermis, the former including many elements such as collagen, elastin, muscle, nerve endings, blood vessels, and fat as well as sweat glands and hair follicles. No wonder, therefore, cutaneous lesions are both common and varied in their pathology. Most patients consult a clinician either for reassurance that a lesion is not malignant or on cosmetic grounds. Although no specific treatment is required, lesions may need to be removed for histological confirmation of the clinical diagnosis. Here I review various types of benign skin lesions and their treatments; they have been selected because of their commonness or importance in plastic surgery.

Naevus

Proliferation of normally situated melanocytes produces a junctional naevus.

Invasion of dermis produces a compound naevus.

Regression of junctional activity results in an intradermal naevus.

A naevus is a tumour of cells that are DOPA positive—that is, can convert dihydroxyphenylalanine into melanin. Usually the melanin is situated in melanocytes in the basal layer of the epidermis. Some authorities consider these cells to be ectodermal, while others think that they are derived from neural elements—that is, from neuroectoderm that migrates into the epidermis. Types of naevus include:

Intradermal naevus—This may be flat or raised, brown or black, with or without hair. The naevus cells are usually confined to the dermis.

Junctional naevus—This is a smooth, flat, pigmented lesion, which may occur on any part of the body, usually in childhood or adolescence. It is particularly common on transitional epithelium such as the vermillion of the lip. There is an appreciable proliferation of naevus cells at the junction of the dermis and epidermis.

Compound naevus—This is an intradermal naevus with considerable junctional activity.

Blue naevus—This is a well defined, small intradermal nodule of dermal melanocytes situated deep in the dermis.

Giant pigmented naevus—This occurs most often on the trunk and is characterised by large, darkly pigmented, hairy patches. The skin may be thickened and varicose. It has a tendency to follow a dermatome distribution, is present at birth, and may continue to grow for several years. Such a naevus may undergo malignant change, an instance of up to 15% being reported by various authors. About 40% of all childhood malignant melanomas, which are extremely rare, occur in these lesions.

Management

None of these naevuses are in themselves premalignant and most are excised for either functional or cosmetic reasons. Any cutaneous lesion that undergoes change, be it in size, colour, itching, or elevation, should, however, be excised for histological examination.

One treatment of the giant pigmented naevus is complete removal, but some surgeons are now reverting to more conservative management.

Shaving giant naevuses within the first three months of life can produce a considerable cosmetic improvement but has no effect on hair growth. This is because the melanocytes at this time lie more superficially in the epidermis.

Seborrhoeic keratosis

Seborrhoeic keratosis vary in size up to 4 cm in diameter. They are usually raised and brown. Characteristically they appear as if stuck on to the skin. The surface of the lesion may appear to have comedone plugs and may be soft and greasy (sebum—tallow, rhoea—flow). These lesions become increasingly apparent with advancing age, even though they may have a congenital aetiology, being dominantly inherited. They are benign tumours of epidermal cell origin. Clinically they are important because if they present atypically they may be confused with either malignant melanoma or squamous cell carcinoma. They can be removed by shaving down rather than by primary excision.

Fibrous tumours

Cutaneous tags and papillomas occur in various sizes and are sessile or pedunculated. They often occur with seborrhoeic keratosis and more often in women than men. They increase in number when the subject gains weight. These lesions are easily removed by excision or electrocautery. Dermatofibroma is a common benign lesion that is firm to palpation and varies in colour from red or brown to yellow. They occur most often on the legs and feet but may also appear on the arms and trunk. They rarely exceed 1.5 cm in size and consist of fibroblasts and collagen. Aetiologically they may be related to minor injury. The histiocytoma is a similar lesion consisting of histiocytes phagocytosing fat rather than fibroblasts producing collagen.

Excision of a cutaneous lesion

Minor surgery should be practised under conditions that are comfortable for both the patient and the operator. The instruments used should be appropriate to the operation, not a monument to the development of surgical instruments. The lesion should be anaesthetised with a local anaesthetic and a bloodless field provided by incorporating a solution of adrenaline, provided that there is no medical or anatomical contraindication for this (for example, 1% lignocaine with 1/200 000 adrenaline). Five minutes should elapse between infiltration and incision to allow the adrenaline to work. Most lesions are best excised as an ellipse, which should be marked out primarily with a surgical pen. The skin should be stretched in two directions, the best way of doing this without an assistant being to place the handle of the scissors over the lesion. A good working principle is that all lesions should be sent for histological examination. The wound may be sutured in two layers, closing the subcutaneous tissue with an absorbable suture on an atraumatic cutting needle. The skin should be sutured with an appropriate suture, again on an atraumatic cutting needle. Sutures on the face should not be left in for more than five days. Small lesions on the trunk, arms, and legs may be excised "in the round" and left to heal without any suture. A small depressed scar is left, which is often cosmetically superior to the flat but stretched scar resulting from an elliptical excision.

Cysts

The term "sebaceous cyst" should no longer be used as in most cases sebaceous cells play no part in the formation of these cysts.

Epidermal cysts—These (synonymous with sebaceous cysts) are slow growing intradermal or subcutaneous lesions usually presenting in the face and neck; they may occasionally form part of Gardner's syndrome. They are attached to the overlying normal skin by the remains of the expanded gland duct, showing on the surface as a punctum. Histologically the wall of the cyst is composed of epidermis, but as it matures the wall becomes thinner and the cells flattened.

Pilar cysts, or wens, are clinically similar to epidermal cysts but occur on the scalp. They originate from the middle part of the hair follicle epithelium, and their contents (keratin, fat, and cholesterol) are odourless as they do not become rancid. Simple excision is the treatment of choice; the doctor should ensure that the lining of the sac is completely removed or recurrence is likely. Infected cysts are best treated with antibiotics and excised when quiescent. Occasionally, infected cysts may require drainage. **Milia or white heads** are tiny (1-2 mm), superficially situated epidermal inclusion cysts. They tend to occur around the eyes in particular, where they may be confused with xanthelasma, and also occur on dermabrasion sites. Treatment is by simple excision or carbon dioxide laser.

Dermoid cysts are subcutaneous lesions usually presenting at birth and often situated on the face around the eyes. They result from sequestration of the skin along the lines of embryonic closure. They may be adherent to periosteum and often develop deep extensions. The cyst is lined by epidermis but may contain various epidermal appendages such as hair follicles. Surgical excision may develop into a "tour de force," and complete excision may require wide exposure of structures around the orbit and nose. They are best referred for specialist opinion.

Inclusion dermoid cysts (epidermal inclusion cysts) result from the traumatic implantation of a fragment of skin into the subcutaneous tissues. A cystic swelling, lined by squamous epithelium containing cholesterol and keratin, results. They are common on the palmar aspect of the hand as a result of minor trauma.

Neurofibromatosis

Von Recklinhausen's neurofibromatosis is a hereditary disorder that presents with multiple cutaneous neurofibromas and café au lait pigmentation of the skin. The patient may also have neurofibromas throughout the rest of the body resulting in, for example, bone lesions or gastrointestinal symptoms. Although the skin pigmentation may have been present since birth or early childhood, tumour formation is generally most aggressive at the time of puberty. The disease is unpredictable, but there is a rough correlation between the age at onset of the neurofibromas and the severity of the disease. Treatment consists of excising lesions, giving rise to symptoms because excising all the lesions is usually impossible. Very occasionally malignant degeneration may occur.

Rhinophyma

Rhinophyma is a clinical presentation of acne rosacea. The sebaceous glands of the skin are increased in size by the ducts being dilated and filled with keratin. This produces the characteristic enlargement and disfigurement of the nose. The condition has nothing to do with drinking too much alcohol. Treatment on cosmetic grounds is simply to shave the lesion down using a large scalpel blade until a nose of normal size and shape is obtained. The epithelium regenerates spontaneously from the epithelial remnants that are left behind. This procedure may be done under local anaesthetic.

Hyperhidrosis

Excessive sweating may be either generalised all over the body or limited to one particular area. It is a condition often affecting the axilla, producing gross discomfort and social embarrassment. After ruling out any serious systemic disturbance the first line of treatment is the topical application of aluminium chloride in an alcoholic solution (aluminium chloride hexohydrate in 20% alcoholic solution). The solution is applied to the dry axilla before going to bed and washed off the next morning. The site of application must be dry if local irritation is to be avoided. The frequency of treatment is reduced as the condition improves. It is not known how this solution works, but possibly it causes protein precipitation that blocks the sweat duct orifices. If a local hypersensitivity reaction occurs it may be helped by 0.5% hydrocortisone cream; the reaction may, however, be severe enough to necessitate stopping the treatment. Only those patients in whom a prolonged course of medical treatment fails or who have severe hypersensitivity reactions are referred for surgical treatment. If the process affects the axillas and the hands the patient may be better served by cervical sympathectomy. This is, however, a major operation, and the symptoms may return after a year or two. If, however, the condition is localised to the axillas excision of an ellipse of skin containing the major part of the sweat glands is the treatment of choice. This may be done as a day case procedure. Various refinements on this procedure have been introduced because scars in the axilla may cause appreciable trouble. In particular, they may result in a limitation of abduction and extend on to the anterior axillary fold and thus be visible. In one alternative procedure the subcutaneous tissues are cleared by curetting through two small parallel incisions in the skin. Surgical success depends on the amount of apocrine gland that is removed.

Hydradenitis suppurativa

Hydradenitis suppurativa is an inflammatory disease of the apocrine sweat glands producing deep and recurring abscesses in the axilla. It is painful and causes a great deal of distress because of the discharging abscesses. Treatment initially is with appropriate broad spectrum antibiotics. Once the disease pattern has become established, however, most patients are grateful for surgical intervention. This consists of excising the whole area affected by the disease. Although large areas of skin may be excised from the axilla, skin grafts and local flaps may be required. The appreciable local discomfort and decreased abduction in the axilla caused by the scarring are far preferable to the symptoms of the disease. The groin and perineum may also be affected.

Xanthelasma

Xanthelasma presents most commonly in the form of soft, thin, elongated plaques, yellow and slightly raised in profile. They are often symmetrically distributed around the eyes and are common in the medial canthal area. In about half of all cases these lesions are associated with hyperlipoproteinaemia. In many cases, however, there is no apparent associated general disturbance of lipid metabolism and the xanthelasma is therefore just a simple, local, cosmetic problem. The xanthelasma may be excised surgically or eradicated with a topical sclerosant such as phenol. Patients should be screened for hyperlipoproteinaemia and referred to a physician should any abnormalities be found.

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