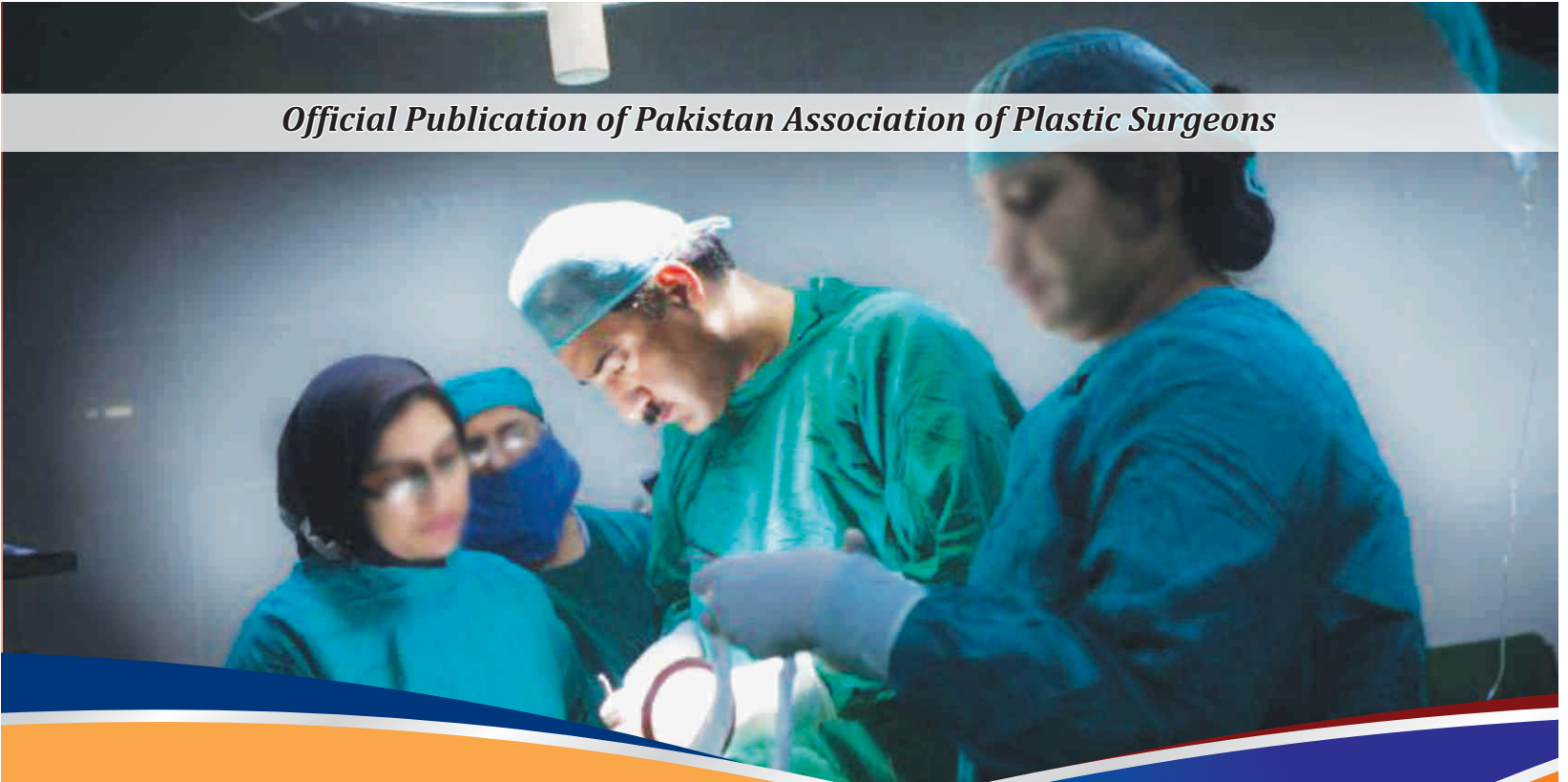


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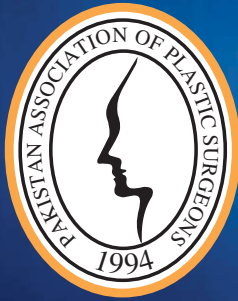


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Resistant Facial Hirsutism in Females

Dr. Munir Alam, Dr. Nasir Mehmood

Abstract:

Background: The pigmented and unwanted hair in females is a common issue. There are various treatment modalities available for facial hair removal, (temporary and permanent.) The client choice is invariably to remove facial hair permanently. The photoepilation laser and IPL treatment to remove unwanted facial hair is an acceptable universal method.

Objective: To determine the role of photo epilation in the treatment of female facial hirsutism patients.

Methods: In this prospective study, carried out from May 2014 to May 2016 in Aziz Fatimah Hospital & Faisal Hospital, Faisalabad, Pakistan. we have treated 140 female clients with the age of 19 Yrs to 55yrs (mean age 36.5 Yrs) having facial hirsutism with Ferriman-Galway score of 8 or more. All patients were treated with photoepilation hair removal system. Thirty four(24.29%) patients excluded from the study due to non-compliance. Normally 4 sessions of photoepilation treatment spaced 30 days deemed sufficient for permanent facial hair removal. With the first session we consider to have 50 % reduction of facial hair and further 10- 20% with every subsequent four to five sessions, spaced 30 days each session accumulating 100% removal of unwanted facial hair in 4 – 5 months. In patients, who did not achieved the desired results after 2nd sessions, we further evaluated for the medical diagnosis for resistant facial hair regrowth and 14 (10%) patients with the hormonal imbalance diagnosed were treated with medical therapy by a specialist endocrinologist.

Results:

Overall results achieved are highly satisfactory (approximately 80%). All patients with hormonal imbalance had joint treatment from specialist Endocrinologist and Aesthetic/Cosmetic Surgeon. The results achieved after combined treatment with photoepilation and medical therapy were total elimination of resistant or regrowth of female facial hirsutism.

Conclusions: Where response is inappropriate after 2-3 photoepilation sessions for female facial hair removal then client should be evaluated further by an experienced endocrinologist. After making correct diagnosis of female facial hirsutism and treating medically, the results achieved to remove female facial hair with photoepilation remained satisfactory.

Key words: Hair, LASER, IPL, Permanent

Introduction:

The photoepilation consist of intense pulsed light therapy (IPL) and laser. LASER is acronym for “light amplified by stimulated emission of radiation” which was first developed in 1960 based on Einstein's quantum theory of radiation 1. The Laser light

is monochromatic, bright , coherent, unidirectional light emerges from the laser cavity. It has wide range of medical application including permanently unwanted hair removal from the body 2.

The Intense pulse light therapy (IPL) is a system that emits a broad spectrum of non-coherent, polychromatic light 3. It is a non invasive photorejuvenation system used for photo aging, telangiectasia, port wine stains, poikiloderma, red hypertrophic scars, hypertrichosis, irregular pigmentation, hair removal and post inflammatory hyperpigmentation.

Dr Munir Alam

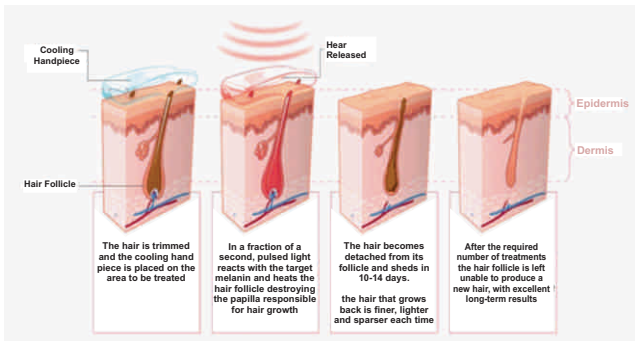
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The treatment modalities available to remove unwanted hair from the body are temporary and permanent. The temporary methods are shaving, plucking, threading, waxing, bleaching, chemicals etc. The permanent methods includes Electrolysis and Photoepilation (LASER and IPL).



Permanent hair removal require LASER or light impact on one or more growth centers within the hair. Target or Chromophore identified is melanin. The mechanism involved by which the laser light can destroy hair follicle by three mechanisms thermal (due to local heating), mechanical (due to shock waves or violent cavitation), or photochemical (due to generation of toxic mediators like singlet oxygen or free radicals) mechanisms.

Material and Methods

This is a prospective study of two years from May 2014 to May 2016 and this study was conducted at Aziz Fatimah Hosp and Faisal Hospital, Faisalabad, Pakistan. The inclusion criteria was all female with facial hirsutism where facial hair reduction fifty to seventy percent in first two photoepilation sessions not achieved and females with Ferriman Gallwey score above 4. The exclusion criteria included noncompliant patients or patients who discontinue medical treatment due to various reasons like; pregnancy.

A careful detailed history, thorough physical examination and relevant investigation either pre or intra photoepilation treatment performed.

Results

In this study total number of one hundred and forty patients were enrolled. Age distribution ranged from nineteen years to fifty five years (Fig.2). Ninety six patients had successful treatment and fourteen cases were found resistant to photoepilation treatment which required referral to physician for endocrine work up to find out the underlying cause and medical treatment along with regular four to six monthly photoepilation sessions (Fig.1). The causes identified in resistant cases included Polycystic ovarian disease in five patients, ovarian cyst in three patients, prolactinoma in one patient, non Classic CAH in two patient and three patientspatients, where no cause identified (Fig.2).

Title: Age distribution

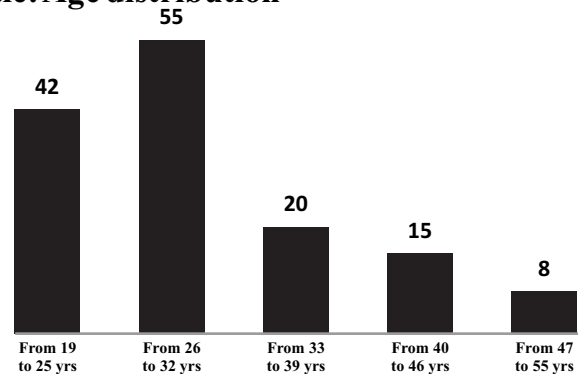
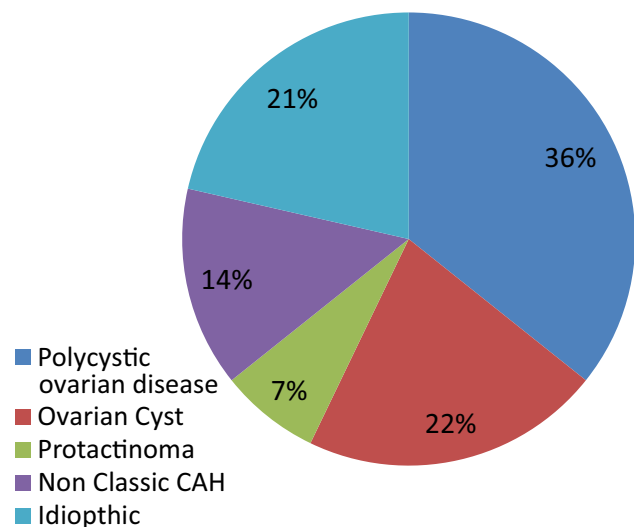


Fig.1

Title: Causes identified in resistant cases
Numbers: total fourteen resistant cases

Causes identified in Resistant Cases

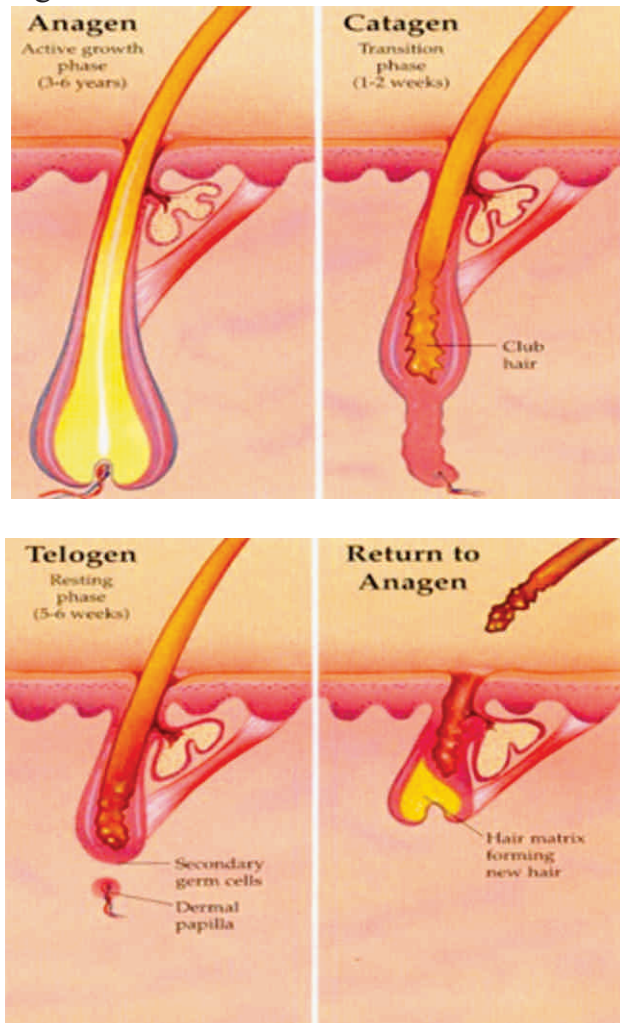


We perform four to six monthly sessions of photoepilation. The expected results are 50% hair volume reduction after 1st session and further 10-20% reduction in subsequent sessions.

Discussion

Hair is continually growing structure and growth cycle is divided into three phases, Growth phase (period of activity) – Anagen (80-90%) last for upto 6 yrs, Regression phase – Catagen (2%) last upto 3 weeks, Resting phase (period of quiescence) – Telogen (10-15%) last upto 3 months. Fig3

Fig3



During puberty androgen level increases which converts vellus hair (small, straight, fair) into terminal hair (larger, curlier, darker).

Hirsutism is a common disorder affecting up to 8 % of women.⁵ It often results from conditions that are not life-threatening, such as chronic anovulation. Hirsutism is defined as the presence of excessive terminal hair in androgen-dependent areas of a woman's body.⁶

Infrequently, hirsutism may signal more serious pathology, and clinical evaluation should differentiate benign causes from tumors or other conditions that require specific treatment. Most women who seek treatment for hirsutism do so for cosmetic reasons, because excess body hair outside of cultural norms can be very distressing.

A careful detail history and thorough physical examination are essential. Family history is important; 50 percent of women with hirsutism have a positive family history of the disorder.⁷

Treatment options for patients who have hirsutism can be divided into those measures targeting local manifestations of hirsutism and pharmacologic therapy aimed at the underlying cause. Therapy that targets local manifestations includes physical methods of hair removal ranging from shaving to laser therapy, topical treatment, and weight loss.

For patients with mild hirsutism, local measures such as shaving, bleaching, depilatories, and electrolysis may suffice. Shaving is the easiest and safest method, but is often unacceptable to patients. Bleaching products are often ineffective for dark hair growth, and skin irritation may occur. Chemical depilatories produce results similar to shaving, but skin irritation is common. Electrolysis is one of the most effective and permanent methods of hair removal, and may be an adjunct to hormonal treatment.¹

Eflornithine (Vanika) topical cream has been shown to slow rates of terminal hair growth significantly in up to 32 percent of patients and can be used adjunctively with usual methods of hair removal.^{4,8} Once use of eflornithine is discontinued, hair growth usually returns to pre-treatment levels in

about eight weeks.⁹

For women with idiopathic hirsutism, PCOS, or late-onset CAH, appropriate treatment decisions depend on each patient's desires and childbearing plans. Women who do not wish to become pregnant should use low-dose oral contraceptives (OCs). Containing less androgenic progestins, such as norgestimate, gestodene, and desogestrel,¹⁰ These agents increase the level of SHBG and therefore decrease ovarian androgen production while decreasing the risk of endometrial hyperplasia often seen in anovulatory women.^{11,12}

Antiandrogens may be combined with OCs for the treatment of hirsutism. Up to 75 percent of women report clinical improvement with combination therapy, but data have shown that combined therapy is not significantly better than single agents alone¹³.

The most commonly used antiandrogen are spironolactone and flutamide.

Spiroolactone is most commonly used because of its safety, availability, and low cost. Flutamide has been shown to be as effective as spironolactone; however, hepatic function must be monitored. Finally, finasteride, a competitive inhibitor of 5 α -reductase has been shown to be effective in treating hirsutism with relatively few side effects.¹⁵ Response to antiandrogens is slow and may take up to 18 months. Duration of therapy is unclear, but treatment cessation generally is followed by recurrent hair growth.

Hirsutism is classified into various types, grades and scales. The most commonly used classification in practice is Ferriman-Gallwey Scale as shown in the Fig. 4

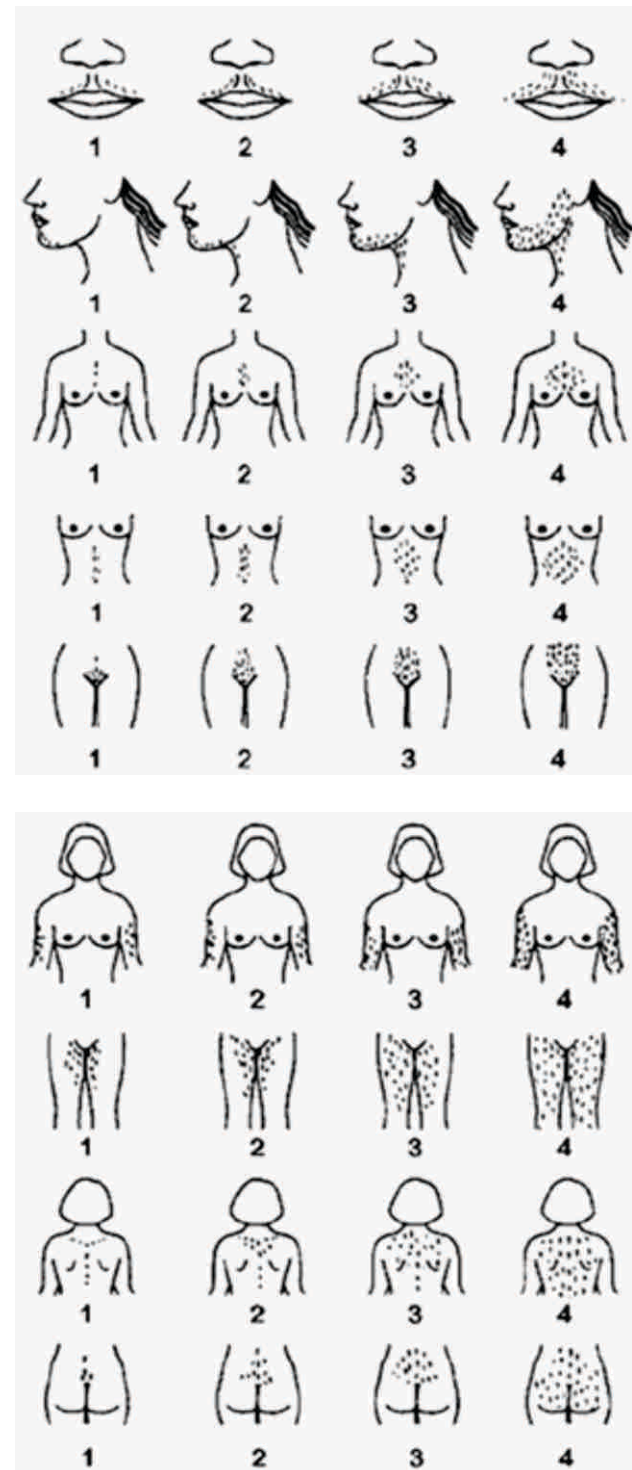


Fig 4: Ferriman-Gallwey Scale

The expression of hair growth varies between racial/ethnic groups and should be noted in the clinical assessment. A Ferriman-Gallwey score >8 is considered to be abnormal in asian women.

General principles of medical treatment of a female patient with facial hirsutism is guided by severity of hirsutism, amount of distress it is causing the patient, reproductive wishes of the patient, encourage weight loss in all obese patients, any medical therapy deserves a 6-months minimum trial. Little evidence to suggest combination therapy is superior to monotherapy.

Mechanism of action in hyperandrogenichirsutism, testosterone is the major androgen secreted in a process that is largely luteinizing hormone (LH) and insulin-dependent. Oral contraceptive therapy reduces hyperandrogenism by the inhibition of LH secretion.

Stimulation of the hepatic production of sex hormone binding globulin (SHGB), thereby increasing androgen binding in serum and reducing serum free androgen concentrations. A slight reduction in adrenal androgen secretion, a modest inhibition in the binding of androgens to their receptor. The principal effect of oral contraceptive therapy on hair growth is to reduce or even stop the development of new terminal hairs. In addition, excess terminal hairs present at the beginning of therapy may become finer and grow at a slightly slower rate, and some hairs that are in the process of terminalization (ie, the process of converting from vellus to terminal hairs) may revert, resulting in a reduction in overall excess hair growth.

The diagnosis of polycystic ovary syndrome (PCOS) is made if two of the three following criteria are met: Androgen excess, Ovulatory dysfunction, or Polycystic ovaries (PCO), whereas disorders that mimic the clinical features of PCOS are excluded. These include, in all women: thyroid disease, hyperprolactinemia, and nonclassic congenital adrenal hyperplasia. In selected women with amenorrhea and more severe phenotypes, more extensive evaluation required to exclude other causes.

The congenital adrenal hyperplasia (CAH) is a group of inherited disorders (autosomal

recessive) in which a defect in cortisol biosynthesis is present (each characterised by a deficiency or total lack of a particular enzyme involved in the biosynthesis of cortical steroids) with consequent overproduction of adrenocorticotrophic hormone (ACTH) and secondary adrenal hyperplasia as a consequence.

Women with prolactinoma present with oligomenorrhoea or amenorrhoea, and 80% have galactorrhoea. one to two percent patients with prolactinoma have hirsutism. Men present with impotence or decreased libido. Fertility is decreased in men and women. Bone mineral density is decreased because of the hypogonadism. Men often present with larger tumours due to late diagnosis and probably because of underdiagnosis of small lesions.

Idiopathic is defined as when serum testosterone levels are normal . There is no menstrual irregularity and no other cause is identified.

The causes of female facial hirsutism identified in our prospective study are polycystic ovarian disease, ovarian cyst, prolactinoma, non-classic CAH and idiopathic. Other rare causes includes obesity, dietary habits, drugs (danazol), hyperthecosis, severe insulin resistance syndrome, cushing's syndrome, acromegaly, thyroid dysfunction etc.

Conclusion

The case in which the response is inappropriate after 2-3 photoepilation sessions for female facial hair removal or Ferrymen-Galwey score more than 8, should be evaluated further by an experienced endocrinologist. After making correct diagnosis of female facial hirsutism and treating medically, then the results achieved with photoepilation to remove female facial hair permanently remained satisfactory.

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Eponyms and Descriptive Names in Plastic Surgery

Dr. Muhammed Adil Abbas Khan, Dr. Darren Chester

Dr. Rajive Mathew Jose

Abstract

There are several eponyms and descriptive terms used in Medicine and there is ongoing debate about their usefulness. Plastic Surgery perhaps has more descriptive terms, due to visible nature of the pathology and the several innovative surgical procedures described. There has never been an attempt to classify these terms. This article attempts to classify them and also briefly discusses the origins of some of the commonly used terms.

Key words: Eponyms, Plastic Surgery

Eponyms and Descriptive Names in Plastic Surgery

Persons attempting to find a motive in this narrative will be prosecuted;

Persons attempting to find a moral in it will be banished;

Persons attempting to find a plot in it will be shot.

-Mark Twain (Adventures of Huckleberry Finn)

Eponyms and descriptive names continue to be used in medical parlance despite the debates about their utility.¹⁻⁵ They are particularly popular in Plastic Surgery, due to the externally visible nature of many of the lesions encountered and also the numerous innovative procedures employed. Eponyms are used to describe diseases, clinical signs, syndromes, surgical procedures, instruments and also numerous flaps. Though there are eponyms and descriptive names derived from various flora and fauna, both real and fictional, there has never been an attempt at classifying them.

This paper looks at some of these eponyms and descriptive names within Plastic Surgery

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and attempts to categorise and propose a classification for them, which to the best of our knowledge has never been attempted before (Table 1).

Table 1: Classification of Eponyms and Descriptive terms in Plastic Surgery

• Names from places
• Names from professions and hobbies
• Names from people
○Medical
○Non-Medical
• Names from fictional characters
• Names from flora
• Names from fauna

Though this classification has been derived from eponyms popular in Plastic Surgery, the same can be applied to those from other medical and surgical disciplines as well. The authors are acutely aware that many of these terms are politically incorrect in the current practice and by no means advocate using them while communicating with patients. They do however have a historic and literary value and do add some flavour to the otherwise mundane medical jargon. Though an eponym, strictly speaking, is 'a name derived from the name of a real or mythical person,' in the context of this article, the term is used loosely to include names and descriptive terms derived from both people, animals, plants, professions and places.

Names from places

Names of places have often served as an inspiration for descriptive nomenclature. Eponymous terms have been used to signify the origin of a surgical procedure or to illustrate the appearance of a particular pathology.

A good example is the '*Indian forehead flap*'⁶ which originated in India as a method of nasal reconstruction.⁷ This technique is often erroneously attributed to Sushruta; an ancient Indian surgeon who performed nose reconstructions using a flap taken from the cheek but never actually performed a forehead flap nor described it in his surgical treatise, 'Sushruta Samhitha'.⁸ Another descriptive name for nasal reconstruction is the '*Italian method*' described by Gasper Tagliacozzi and involves using a flap from the arm.⁹

Another example is the '*Chinese flap*', also known as the Radial Forearm Free Flap which was described by Yang et al in 1981. This versatile free flap taken from the forearm, based on the radial artery and the venous system is the workhorse flap for head and neck reconstruction and was performed in China for many years prior to its global introduction¹⁰. It has since gained popularity for its reliable anatomy, long pedicle and ease of elevation.

'*Singapore flap*' is another flap taken its name from a place name. It was described by the Singapore Plastic Surgeon Dr Julian Wee and Paediatric Surgeon Dr V T Joseph in 1992. It is a flap taken from the pudendal area and is used in vaginal reconstruction.¹¹

A contour of a geographical landscape can also be used to illustrate the appearance of a lesion or pathology, as demonstrated by café au lait spots. These are macular lesions that occur anywhere on the body, often oval in shape and brownish in colour. Café au lait spots have been described as having either a '*coast of California*' or '*coast of Maine*'

appearance, illustrating the smooth or irregular borders of the lesions, suggestive of fibrous dysplasia¹² or neurofibromatosis¹³ respectively.

Names from professions and hobbies

Game-keeper's thumb is a term which describes a chronic injury to ulnar collateral ligament of thumb metacarpophalangeal joint and was coined by Campbell who recognized this injury in Scottish gamekeepers who used their thumb and index fingers to sacrifice rabbits. He noted this lesion in the dominant hand of 20 of the 24 game keepers that he examined.¹⁴ The term *Skier's thumb* was first used by Gerber et al to describe the acute type injuries in the same location.¹⁵

Bowler's thumb is a term used for neuroma of the ulnar side digital nerve of the thumb from holding the ten-pin bowling ball, the edge of the which pressing against the nerve and was first described by Siegel in 1965.¹⁶

Other examples include *Mariner's ulcer*, implying the importance of sun exposure as an occupational risk factor for basal cell carcinoma (BCC) and *Chimney sweeps cancer*, in reference to scrotal cancer which was commonly seen in chimney sweeps due to the chronic exposure to soot. The latter was first described by Percival Pott in 1775 and remains the first description of a link between an environmental agent and cancer.¹⁷

Names from Medical People

An entire book could be dedicated to professionals who have received recognition for their pioneering work in the field of medicine. There are perhaps more procedures in Plastic Surgery which are eponymously named than other surgical specialties.

Surgeons are often not egoistic enough to publish eponymous names of their own and fame is bestowed on them by their colleagues. There are stories of honour and generosity where an author has acknowledged a less known previous work and named it after the

original author. Poland's syndrome is one such example where Alfred Poland described an anomaly of the upper limb associated with a chest wall abnormality in a cadaver that he dissected in 1842.¹⁸ Later in 1962 Patrick Clarkson encountered three patients with such a deformity and reviewing the literature read Poland's description of the anomaly. He published his series of three patients and term the condition Poland's syndrome¹⁹

Eponyms have been sometime wrongly attributed to people. '*Charle's operation*' is a term used to describe the radical operation for debulking advanced cases of lymphoedema. It is named after Sir Richard Henry Havelock Charles who published a series of 140 consecutive patients treated successfully for scrotal lymphoedema. It was in a book chapter published a decade later, entitled "*Elephantiasis Scroti*," that Sir Havelock briefly described the treatment of leg lymphoedema but did not document a single successful case report. Since 1950, when Sir Archibald McIndoe attributed the treatment of leg lymphoedema with radical excision and skin grafting to Sir Havelock there have been several references to Charles for the treatment of leg lymphedema.²⁰

.Names from non-medical people

Terry-Thomas' sign, named after the distinctive English comic actor Thomas Terry Hoar-Stevens (b. 1911 – d.1990) who had the trademark gap in his front teeth (Fig 1).

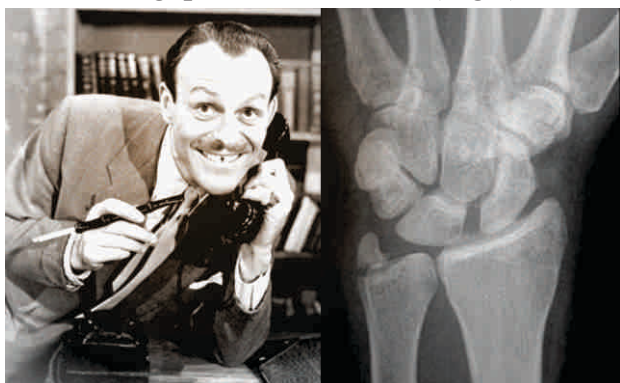


Fig 1: Terry Thomas and and X-Ray of scapholunate dissociation

It denotes a radiological feature seen in the ligamentous injury of the scaphoid bone with a gap of greater than 3 mm between the scaphoid and lunate bones and was first coined by VH Frankel in a letter to the journal.²¹

Peter Paul Rubens (June 28, 1577 – May 30, 1640), is a seventeenth-century Flemish Baroque painter, known especially for the 'Three Graces' which beautifully illustrates the subjects' 'love-handles'.(Fig 2)

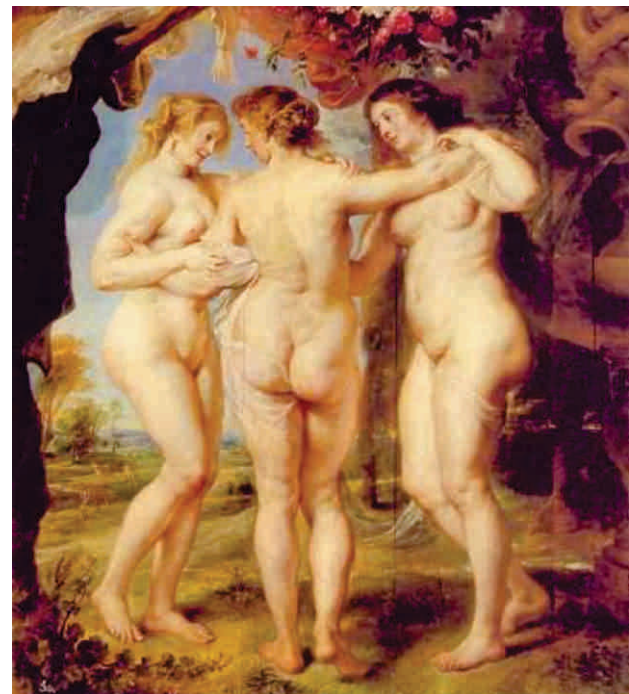


Fig 2: 'The Three Graces' by Peter Paul Rubens. Perhaps the painting depicts the donor sites for SGAP/IGAP flaps even better!

The free flaps taken from this area for breast reconstruction have been named after him and are often referred to as *Rubens' flaps*.²²

Names from fictional characters

Andy Gump, a comic strip creation of Sidney Smith in 1917, is the inspiration for the eponym, *Andy-Gump deformity*. Andy had a characteristic micrognathia, very similar to the abnormal appearance associated with a central mandibular deficiency following cancer resections prior to reconstruction.

Dumbo Ears is an obsolete term used to describe prominent ears, after the loving elephant character of the same name in the animated film released in 1941 by Disney. Dumbo has unusually large ears which initially make him an object of ridicule in the circus but he eventually discovers that he can fly by flapping them. This obviously is a misnomer since the prominent ears in humans are not larger in size and merely have a lack of antihelical fold or have deep conchae. Perhaps the only similarity is that some of the children with prominent ears also experience bullying at school on account of their ears.

Proteus Syndrome, featuring asymmetrical hypertrophy of the face, limbs or trunks, with epidermal naevi, haemangiomas and hamartomas is named after Proteus, a sea god in Greek Mythology, who was capable of assuming many forms. Joseph Merrick, the elephant man, made famous through the film of the same title is believed to have suffered from Proteus syndrome. The term was coined by Wiedemann et al in 1983²³

Snoopy-nose deformity refers to a breast deformity seen as part of Tuberous breast deformity spectrum. The abnormality in these cases is a ptotic breast with a constricted base resembling the nose of the cartoon character Snoopy who appears alongside Charlie Brown in the famous 'Peanuts' series created by Schultz. The term was first introduced by Mc Gibbon in 1976.²⁴

Names from flora

Potato nose is a descriptive term for rhinophyma, which is caused by hypertrophy of the sebaceous glands and surrounding connective tissue of the nasal skin, with dilation of follicles and prominent vascularity of the skin. This results in a significant nodular enlargement and redness of the nose and occurs primarily in men.²⁵ It should be mentioned that most potatoes such as the King Edward variety do not bear resemblance to rhinophyma. Perhaps the one who coined

the term was more familiar with the red pontiac variety which has the pitted appearance of rhinophyma (Fig 3)



Fig 3: Red Pontiac potato

Cauliflower ear is a condition often seen in amateur wrestlers and rugby players. The aetiology is often blunt trauma to the pinna, resulting in a haematoma forming between the perichondrium and cartilage. If not evacuated, ischaemia of the underlying cartilage ensues and results in the obliteration of the convolutions of the external ear.

Strawberry haemangiomas are named so for their a red strawberry-like appearance. These are benign tumours of the endothelial cells and appear in infancy progressively enlarging in size before they involute. Their resemblance to the fruit led to the old wife's tale that the affected baby's mother may have had cravings for strawberries while pregnant. The French term *peau d'orange* means "orange skin" and is a term used to describe the skin involvement in carcinoma breast where there is both stromal infiltration and lymphatic obstruction with oedema.²⁶

'*Melon slicing*' is a term often heard in the Plastic surgery circles in the UK to refer to a lower abdominal apronectomy without any muscle placcation or umbilical repositioning. However the authors have not been able to find the term in text books or journals and its origin therefore is uncertain.

Names from Fauna

Elephant foot refers to enlargement of lower limbs resulting from infection with lymphatic filariasis, caused by a parasite endemic to many parts of Asia and Africa. The first reliable documentation of elephant foot was by Jan Huyghen van Linschoten, a Dutch Protestant merchant, traveller and historian, whilst exploring the Portuguese colony of Goa (1588 & 1592). During the trip, he noted that the inhabitants were "all born with one of their legs and one foot from the knee downwards as thick as an elephant's leg".²⁷

Stork bite is a colloquial term for Naevus flammeus neonatorum or Nevus flammeus nuchae, a pink, flat, irregularly-shaped vascular malformation on the back of the neck.

Hare-lip is another term that is now no longer used to describe cleft lip. Rabbits have a midline cleft of their lip which bears little resemblance to the common lateral clefts seen in babies. Ralph Millard has described the inappropriateness of the term in his book 'Cleft Craft' and has made a jovial suggestion that considering the genetic aetiology of cleft lip, the term 'Heir-lip' may be a more appropriate terminology.²⁸

Bat ears, a term still used for prominent ears derive its origin from the appearance of bat wings. The actual ears of the bat however are rather small and inconspicuous.

Rodent ulcer, is a term occasionally preferred by some clinicians over the more scientific 'Basal cell cancer', whilst breaking the diagnosis to patients. The popularity of the term is probably helped by the fact that it avoids the word cancer and therefore thought to be less distressing for patients. The burrowing skills of the rodent are comparable to the tumour cells which cause local invasion without metastatic spread. It was first described by Jacob in 1824 and though it was originally described eponymously as Jacob's ulcer, the terminology did not gain popularity.²⁹

'*Butterfly children*' is a term used to describe the unfortunate victims of epidermolysis bullosa, a skin condition characterised by poor adherence between epidermis and dermis. These children develop skin blister with even the mildest of shearing forces and their skin needs to be handled as delicate as a butterfly's wings.

A list of the eponyms and descriptive names described in this article is given in table 2.

Table 2: List of some of the Eponyms and Descriptive terms in Plastic Surgery
(This table is not comprehensive and is only meant to be illustrative of the ones used in the article).

Term	Type of term	Equivalent medical term	First used
Indian flap for rhinoplasty	Descriptive term of geographical origin	Median forehead flap	Findlay and Crusoe, 1794
Italian flap for rhinoplasty	Descriptive term of geographical origin	Medial arm flap	Tagliacozzi, 1597
Chinese flap	Descriptive term of geographical origin	Radial forearm flap	Yang et al, 1981
Singapore flap	Descriptive term of geographical origin	Pudendal artery perforator flap	Wee and Joseph, 1989
Coast of California appearance	Descriptive term of geographical origin	Regular margin café au lait spot	uncertain
Coast of Maine appearance	Descriptive term of geographical origin	Irregular margin café au lait spot	uncertain

Term	Type of term	Equivalent medical term	First used
Game-keeper's thumb	Descriptive term from profession	Chronic ulnar collateral ligament injury thumb	Campbell, 1955
Skier's thumb	Descriptive term from hobby	Acute ulnar collateral ligament injury thumb	Gerber 1981
Bowler's thumb	Descriptive term from hobby	Neuroma of digital nerve of thumb	Siegel, 1965
Mariner's ulcer	Descriptive term from profession	Basal cell carcinoma	uncertain
Chimney sweep's cancer	Descriptive term from profession	Squamous cell carcinoma of scrotum	Percival Pott, 1775
Charle's operation	Eponymous operation	Radical excision of lymphoedematous tissue and split skin grafting	Mc Indoe, 1950
Terry-Thomas' sign	Eponymous sign	Scapho-lunate gap on X-Rays	Victor H Frankel, 1978
Rubens' flap	Eponymous flap	Deep circumflex iliac artery flap	Haartrampf, 1994
Andy Gump deformity	Eponymous deformity	Central mandibular deficiency	Schnitman H, Grosz C, 1964
Dumbo ears	Descriptive term from fictional character	Prominent ears	Uncertain
Proteus syndrome	Descriptive term from fictional character	Complex hamartomatous malformation	Wiedmann, 1983
Snoopy-nose deformity	Descriptive term from fictional character	Grade four, Tuberous breast deformity	McGibbon, 1976
Potato nose	Descriptive term from vegetable	Rhinophyma	Odou EL, Odou BR, 1961
Cauliflower ear	Descriptive term from vegetable	Auricular haematoma	Uncertain
Strawberry angioma	Descriptive term from vegetable	Haemangioma	Uncertain
Peau d'orange	Descriptive term from vegetable	Oedema of skin in carcinoma breast	Leitch A, 1909
Elephant foot	Descriptive term from animal	Filariasis leg	Jan Huyghen van Lin, 1592

Term	Type of term	Equivalent medical term	First used
Stork bite	Descriptive term from bird	Naevus flaemmus neonatorum	Uncertain
Hare lip	Descriptive term from animal	Cleft lip	Galen, 2 nd Century AD
Bat ear	Descriptive term from animal	Prominent ears	Uncertain
Rodent ulcer	Descriptive term from animal	Basal cell carcinoma	Jacob A, 1824
Butterfly children	Descriptive term from insect	Epidermolysis bullosa	Uncertain

Whilst the origins of many of the names can be traced to their creators, some others remain enigmatic. The year of the eponym is taken as the year when it has first appeared in medical literature and it is possible that many of the terms may have been in medical parlance much before.

Are eponyms and descriptive terms useful?

This list is not comprehensive and is merely an attempt at organising the eponyms and other descriptive names in Plastic surgery into categories. They make reading interesting and also honour those who made important contributions to the specialty. However all the terms are not appropriate descriptions and some may need a stretch of reader's imagination to appreciate the resemblance.

The debate about the usefulness of eponyms seems to be dominated by campaigners against them. The supporters of medical eponyms argue that they bring colour to medicine and that they embed medical traditions and culture. They feel that eponyms are medical shorthand and make communication easy.⁴ The argument against eponyms seems to be that they lack scientific accuracy and lead to confusion. They feel that eponyms do not always reflect scientific achievement but influences of politics,

language, culture or luck. They also feel that some of the eponyms are inappropriate since they are connected to Nazi experiments.⁵

However the authors believe that eponyms do make reading interesting and facts memorable. There are several eponyms which have stood the test of time and therefore will continue to find their place in textbooks. Several others may pass into oblivion mostly because they are probably inaccurate descriptions or unwieldy terminologies which do not help the reader very much.

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Versatility of Reverse Sural Artery Flap for Heel Reconstruction

Dr. Munir Alam

Introduction:

The heel has two parts, weight bearing and non-weight bearing part. Soft tissue heel reconstruction has been a challenge due to its complex nature of anatomy, weight bearing part of foot and the mechanism of injury requiring reconstruction. The pattern of injury includes from simple laceration to a complex wound with loss of soft tissue and fracture involving various degrees of calcaneus.

Most common pattern of heel injury is due to road traffic accidents especially the foot caught in the moving motor bike wheel. The resultant soft tissue defect may be large or small.

The treatment option for complex large soft tissue defect of weight bearing part of the heel reconstruction has been invariably flaps containing thick skin, pliable subcutaneous tissue with strong fascia planes REF. Historically, most commonly used flaps for large soft tissue defect are radial forearm flap, deltoid flap, lateral arm flap, scapular/parascapular flaps, sural artery flaps either as free tissue transfer or pedicle flaps REF. For small defect of the heel; local pedicle options are medial plantar flap, abductor digiti minimi muscle, abductor hallucis brevis muscle, flexor digitorum brevis muscle, lateral calcaneal flap; a muscle free flap gracilis, serratus, or rectus abdominus muscle.

The reverse sural artery fasciocutaneous flap depends on the perforating sural artery that nourishes the sural nerve (1). The artery originates from a peroneal perforator 5 cm above the lateral malleolus and courses with the sural nerve. The flap can cover any ankle or rear foot defect.

Material and Methods:

This study includes 25 total number of patients with traumatic heel injury and Seven cases of traumatic soft tissue heel reconstruction performed with reverse sural artery flap and one patient out of seven required fracture fixation for calcaneus with screw by the single author between July 2011 and June 2016.

The age range from 9 years to 36 years.

Four patients required split thickness skin graft for donor site closure in the calf while in three patients donor defect was closed primarily.

Results:

All patients wound managed with the reconstruction of heel by using reverse sural artery fasciocutaneous flap healed within a month post operatively and on three month follow up have normal gait with full weight bearing and no recurrent ulceration or wound breakdown.

Conclusion:

The use of reverse sural artery flap for weight bearing large tissue defect of the heel remained versatile for its near similar anatomy. It can provide coverage as large as 8X12 cm, has sensibility, and has a wide arc of rotation due to long pedicle. It is excellent for heel defects and medial/lateral ankle, lower leg, and hindfoot defects.

Key words: Flap, Sural Artery, Heel

Introduction:

Reconstruction of soft tissue defects of the foot remains a complex and challenging undertaking despite advances in the transfer of fasciocutaneous, musculocutaneous, and composite tissue flaps.

A proper understanding of the anatomy of the foot, the weight bearing interface for

ambulation, is essential to the successful reconstruction of foot injuries. The skin on the plantar aspect of the foot varies from region to region, being thickest (up to 3.5mm) over the heel and metatarsal heads and thinner over the toes and instep. A moderate amount of subcutaneous fat is intermingled with fibrous connective tissue, providing a cushion for weight bearing. The plantar fascia is continuous with the deep fascia of the foot's dorsum after attachment to the sides of the first and fifth metatarsal.

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On the foot dorsum and in the Achilles region, the skin is thinner and more mobile; same reconstructive techniques employed for the plantar surface is entirely inappropriate for these two locations. Because the reconstructive options vary according to location, it is best to differentiate between four distinct locations: the Achilles area, ankle and foot dorsum; the plantar forefoot; the plantar midfoot; and the plantar hindfoot. The compartments of the sole of the foot are similar to those of the palm of the hand. Knowledge of these compartments facilitate their decompression when it is clinically indicated.

The timing of the soft tissue repair is an important factor. The wound goes through three stages: the acute phase, during the first five days after surgery, when the wound is contaminated but not infected; the subacute phase, from the first to sixth week, when the wound is colonised and infected; and the chronic phase, after the sixth week, when the infection is limited to the scar and bone sequestra. The most critical determinant of successful reconstruction is thorough debridement of all devitalised tissue and early soft tissue coverage.

The aim should be the early definitive reconstruction of the heel after exclusion of any major injury to other parts of the body. Various options available for heel reconstruction with loco regional flaps and free tissue transplantation.

Once the flap design and identification of pedicle is ensured with the basic knowledge of neurovascular anatomy in this region, the reverse sural artery flap for heel reconstruction is a simple and safe method and versatile flap for its ease of harvesting and application.

Material and Methods:

During five years period from July 2011 to June 2016, total number of 25 patients treated for traumatic heel wound. Out of twenty five,

seven (28 %) required flap coverage for weight bearing part of the heel. The reverse sural artery fasciocutaneous flap reconstruction performed for all seven patients with the age range from 9 years to 36 years.

Results:

The advantage of this flap is a constant and reliable blood supply without sacrifice of major arteries or sensory nerves. It also has the potential for reinnervation and performed in a single stage without microsurgery(3).

Discussion:

The reconstructive surgeon must have a complete knowledge of the anatomy of the foot, the bone architecture, the longitudinal and transverse arches, the compartments, and the role that each plays during this process.

The blood supply to the sural artery flap is derived from the small arteries that accompany the sural nerve along its course just superficial to the deep fascia in the posterior aspect of the distal two thirds of the lower leg. In most patients, this will be a "vascular network," although one may occasionally see a well-defined median superficial sural artery accompanying the nerve. There are numerous anastomoses between this network and the peroneal artery. The most important of these is the most distal one approximately 5 cm cephalad to the lateral malleolus.

The doppler probe is a useful adjunct in mapping the flap pre-operatively. The flap should be outlined over the central third of the calf after the identification of the pedicle in lower one third of the leg. The pedicle consists of a less than 1 cm wide strip of subcutaneous tissue and fascia containing the sural nerve, its associated arteries, and the lesser saphenous vein (Pic 1 G, Pic 2 B)(4). The sural vessels ligated proximally at the junction of upper one third and middle one third of the leg and flap based on sural vessels inferiorly in the leg is raised with reverse flow

from the ankle and foot perforators derived from the dorsalis pedis, posterior tibial and peroneal vessels.

The flap is outlined over the raphe between the two heads of the gastrocnemius muscle. A line is drawn from the inferior edge of the flap to the pivot point for the pedicle approximately 5 cm above the lateral malleolus.

I prioritize identification of the pedicle by start making incision at the pivot point. Through this incision, the sural nerve and the lesser saphenous vein are identified just superficial to the deep

fascia. The next step after identification of the pedicle is to harvest the required dimension of flap from the middle third of the calf. The sural nerve and lesser saphenous vein is ligated proximally and flap raised with the deep fascia to protect the aforementioned structures.

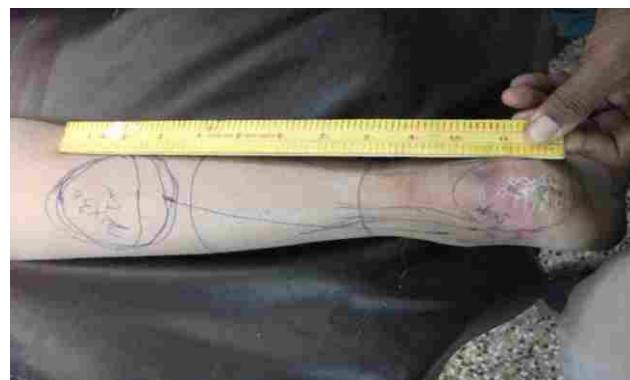
The author preference for flap pedicle by developing a 0.5 - 1 cm wide strip of subcutaneous fat and fascia that harbors the sural nerve and lesser saphenous vein. The flap and pedicle may then be separated from the underlying muscle and paratenon layers. The arc of rotation is 180 degree providing coverage to the heel defect (Pic 1 H). This flap may also provide coverage to the posterior heel-Achille, anterior ankle and dorsum of foot. The donor site may be closed primarily if it is small or with a split-thickness skin graft if it is larger (Pic 1 I, Pic 2 G).



Picture 1 A: Unstable chronic scar tissue on the calcaneus, patient using crutches for walking.



Picture 2 B: Area of unstable scar tissue planned for excision.



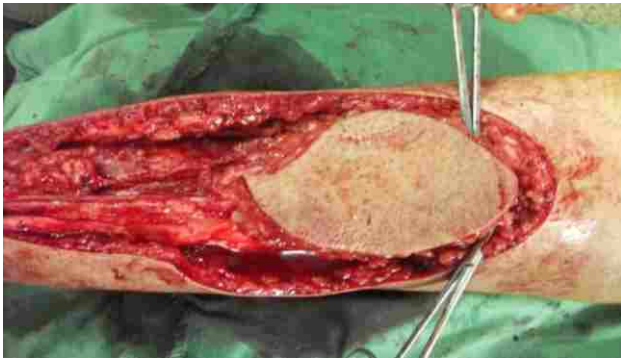
Picture 1 C: Sural flap centered over the lesser saphenous vein



Picture 1 D: Defect over the calcaneus after debridement



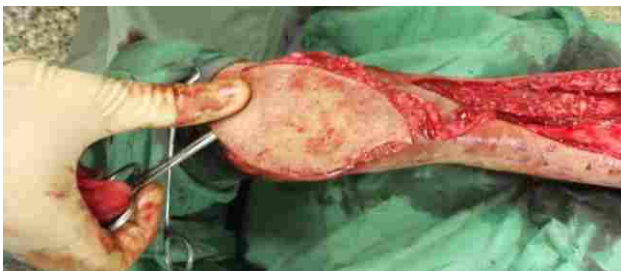
Picture 1 E: Incision over the pivot point of pedicle, identification of the pedicle



Picture 1 F: The flap has been elevated to include the lesser saphenous vein and the sural nerve.



Picture 1 G: A 0.5 to 1 cm width of fascia containing these structures composes the "pedicle"



Picture 1 H: Pedicle is rotated 180 degree to cover the defect with the flap



Picture 1 I: The flap is inset over the defect and the donor site is skin grafted



Picture 1 J: Appearance 3 months after the reconstruction



Picture 1 L: Full weight bearing



Picture 1 M: Normal gait



Picture 2 A: Defect over the calcaneus after debridement.



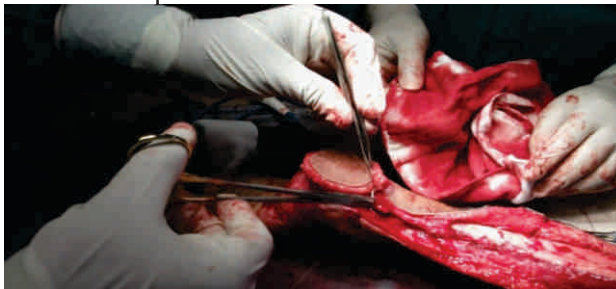
Picture 2 B: A 0.5 to 1 cm width of fascia containing these structures composes the "pedicle".



Picture 2 C: The flap has been elevated to include the lesser saphenous vein and the sural nerve.



Picture 2 D: The flap has been elevated to include the lesser saphenous vein and the sural nerve.



Picture 2 E: Pedicle is rotated 180 degree to cover the defect with the flap.



Picture 2 F: Flap inset and donor site closure



Picture 2 G: The flap is inset over the defect and the donor site closed primarily.



Picture 2 H: Full weight bearing after 3 months.



Picture 2 I: Normal gait after 3 months.

These procedures are often not possible in dealing with patients with significant peripheral vascular disease.

Apart from loco regional flap reconstruction for heel defect, other options include microvascular composite free tissue transplantation. Useful donor sites are the deltoid, lateral arm flaps, scapular and parascapular free flaps (5-7).

Cutaneous sensibility of the reconstructed weight bearing portions of the foot with either loco regional pedicle flaps or free tissue transplantation, did not appear to be necessary to maintain a functional and well-healed extremity (8,9).

All patients who have undergone reconstructive foot surgery require a structured, well planned, multidisciplinary recovery program to ensure success. All patients are maintained on a non-weight bearing regimen for at least three weeks after the procedure that place suture lines on the plantar surface of the foot. The use of strict bed rest and wheelchairs after reconstruction varies with the nature of the procedure performed. Control of pedal edema is important and may be accomplished with bed rest and elevation along with the careful use of back slab made of dynacast or plaster of paris while the patient is on bed rest for 2 weeks. Four weeks postoperatively, patient is encouraged to begin weight-bearing ambulation and elastic compression stocking worn upto 3 months postoperatively for better contouring and reshaping of the flap and control of pedal edema.

An increased risk of complication with this flap have reported in multimorbid group of patients (10). In our series, all patients were healthy with no comorbid disease.

For larger defects, the reverse sural artery flap can be modified by inclusion of a midline "cuff" of gastrocnemius muscle containing the buried sural pedicle is harvested with the flap in the upper part of the leg (11).

Conclusion:

The reverse sural artery flap is a most versatile, fasciocutaneous flap that nourishes from the peroneal perforator 5 cm above the lateral malleolus. This flap can cover any size ankle or hind foot defect with the least donor site deformity, unsightly scarring only if skin grafted. The advantages of this flap are: easy and quick dissection, hence saving operating time, minimal morbidity of donor site and preservation of major arteries of the leg (12).

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Success & Failures & Problems in the Management of Post Burn Contractures

Fahmina Buriro, Mazhar Nizam , Ahmed Rahim Bux

ABSTRACT

Objective: To determine the success & failures & problems in the management of post burn contractures.

Methods: Retrospective study carried out to evaluate release of contracture cases in Burns and Plastic surgery unit Patel hospital from January 2011 to October 2014. Information was obtained about age of patient, type of burn, region and type of contracture, type of release, initial and late outcome and recurrence.

Results: A total of 65 patients underwent release of contractures. Age ranged from 6 months to 53 years. 35 patients were under 12 years age group. Most common reason of burn was fire in 33 patients followed by scalds in 20 patients. Most common area involved was Hand and wrist in 23 patients followed by eyelids and elbow. Total of 76 contractures released in these 65 patients. Split thickness skin grafts were used in 30 contractures and full-thickness skin grafts in 26 contractures, local transposition flaps (z plasties, v-y plasties and commissuroplasties) in 16 and loco regional flap in 4 contractures. Initial result was good in 62 patients. Two patients had partial graft loss and one had complete graft loss. Late result was satisfactory in 39 patients, 17 patients had no follow up record. 9 patients developed recurrence, among them 6 were treated with STSG and 3 with FTSG, two of them had good result after repeat surgery. 5 patients had stiff hands. Good results were observed in patients treated with FTSG and flap and also in those patients treated with STSG who followed use of splints and physiotherapy. Lack of follow up and lack of compliance is found to be most common problem in management. Pediatrics post burn contractures are difficult in terms of post-operative therapy. We found that donor area availability is major limitation of not doing flap coverage.

Conclusion: Post burn contractures are difficult to treat specially in children. There are many problems associated with their treatment. Skin grafts are good and reliable options and provide good results if post-operative therapy is followed properly.

Key words: Post burn, contractures, skin grafts, flaps

Introduction:

Post burn contractures are common and very frustrating sequel of burn injury affecting form and function. In history, post burn contractures were first described in Egyptian manuscripts where use of copper splints was documented to treat them(1,2). Contractures can be defined as an inability to perform full range of motion of a joint. The development of contractures after burn injury depends on

many factors including areas involved, depth of burn, initial management, duration of immobilization, and soft tissue and bony problems(1). Post burn contractures are more common in pediatric population because of difficulties in physiotherapy and rehabilitation. Post burn contractures cause disturbance in both form and function and seriously affect life of an individual socially, economically and emotionally(1,3). Lower limb contractures cause difficulty in performing day to day activities most importantly ambulation.ref Contractures of the upper extremities may affect activities of

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daily living, such as grooming, dressing, eating, and bathing, as well as fine motor tasks(1,4).

Contracture of other body areas poses different types of problems like hygiene problems in genitalia contractures and functional problems associated with severe neck contractures. With increased survival in major burn injuries the incidence of burn contractures is not only increased but poses problems in management due to lack of donor areas.

Best way to treat post burn contracture is to prevent them as once they are formed they are not easy to deal with especially in children(3).

There are various methods to treat contractures depends on type of contracture and donor site availability. Splintage and physical therapy is as important in post burn contractures as in early burn management (5,6).

Post burn contractures are common but little is known of the scope of the problem. Dobbs and Curreri³⁹ retrospectively reviewed 681 patients who received physical therapy for burn injury and found that 28% developed contractures. The hand, elbow, and shoulder were the most frequently affected joints. TBSA and burn depth were associated with the development of contractures. In another retrospective chart review of 52 burn patients with contractures, Richard found elbow flexion (21%), ankle plantar flexion (19%), and shoulder extension/ adduction (17%) contractures were most common. In a published abstract, Kowalske et al reported contractures in 42% of 1749 adult burn patients with American Burn Association criteria for major burn injury at time of discharge. The shoulder, elbow and hand were most commonly affected. In addition, flame burns and larger burns had a higher incidence of contracture(1).

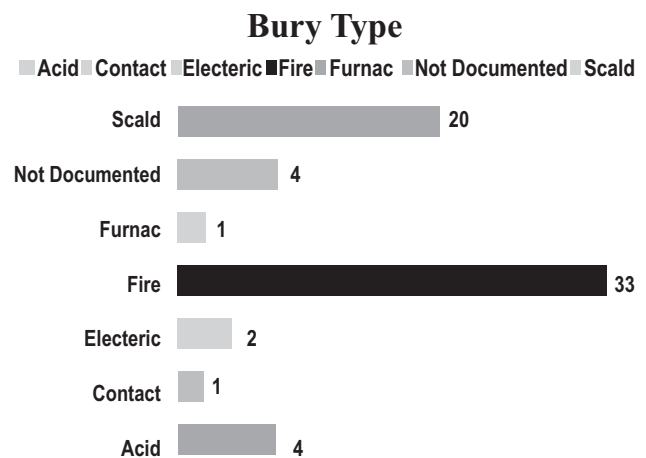
A retrospective study published in Plastic and reconstructive surgery journal evaluating use of skin grafts in treatment of post burn contractures. Authors concluded that the use of skin grafts is simple, reliable. Whenever possible, the authors recommend the use of full-thickness skin grafts in preference to

split-thickness skin grafts in postburn contracture release(5).

Post burn contractures are common and very frustrating sequel of burn injury affecting form and function. There are various methods to treat contractures depends on type of contracture and donor site availability. Author evaluated her experience of managing post burn contracture in her unit and wanted to share her experience in terms of success, failure and problems

Methods:

A retrospective review was carried out of all patients who had release of post burn contractures at the Burns Unit, Patel Hospital, Karachi; between January 2011 to October 2014 to evaluate the experience over this period. Details were gathered about the age, type of burn injury, duration of burn, primary treatment, contracture site, presentation (primary/recurrent) interval between burn and release of contracture, type of surgery, complications, and follow-up. Our surgical protocol was release of contracture, coverage with grafts or flaps depending on contracture site and donor availability, k wiring or splinting depending on site, physiotherapy after removal of wires/splints, scar therapy. Age of patients divided into less than 12 and more than 12 and we found that 35(53.8%) patients were under 12 years of age and 30 (46.2%) were above 12 years. Fire burn was most common cause of burn (n: 33) and other causes recorded were scald, electric, acid burn, contact burn and in four patients causes were not documented. (figure 1)



Primary treatment was non-operative in 23 patients and primary skin grafting was performed in 31 patients while in 8 patients primary treatment was not well documented. Time since burn was divided in less than 3 months, 3 months to 1 year, more than one year and not documented. 50.6% patients were burned for more than one year, 26.7% were among 3 months to one year group and 13.8% were in less than 3 months group while in 6% of patients' time since burn was not documented. 57 patients presented with primary contracture and rest of the 8 was presented with recurrent contracture during study period. Among regional distribution (Table 2)

Region	Frequency	Percent
Hand & Fingers	23	30.2
Canthus/EYELID	9	11.5
Elbow	8	10.5
PERIORAL/FACE/NL	8	10.5
NECK	6	7.8
Knee	6	7.8
Axilla	5	6.5
Foot & Ankle	5	6.5
Breast	2	2.6
Perinium	2	2.6
Trunk	1	1.3
Ear	1	1.3
Total	76	100.0

hand and wrist was the most common region involved in 30.2 % of patients. More than one region contractures were recorded in 10 patients. A total of 76 contractures were released, 30 were re surfaced with split thickness skin grafts, 26 with full thickness skin grafts, 16 with z plasties/v-y plasties/commissuroplasties while in 4 patients loco regional flaps were performed. (Table 3)

Surgery	Frequency	Percentages
ROC+ STS	30	39.4
GROC+FTS	26	34.2
GROC Multiple Zplastic/VY/ Commissuroplasties	16	21.01
Roc Local Flap	4	5.2
Total	76	100.0%

Results were categorized in two, initial and late result. Initial result was documented as good or successful if grafts take were full, flaps were healthy and healed well. Late success was documented as satisfactory result if good range of motion across joint and patients performing routine work. Complications were documented as graft loss or flap failure in early period while recurrences and functional problems were documented in late results. Follow up record was evaluated from clinical notes and last date of visit documented.

Statistical analysis:

Data was entered and analysis in to SPSS version 22. Descriptive statistics were calculated in term of mean \pm SD as appropriate. Categorical variable were computed in term of frequency and percentages. All results were display in the form of charts and tables.

Results:

Initial results were successful in 62 patients. Two patients had partial graft loss and one had complete graft loss. All three patients of graft loss were from hand and wrist group. One patient who had complete graft loss was an eight years old child with history of electric burn injury and full thickness graft was used to re surface area after release of contracture and after graft loss he was managed non-operatively and developed recurrence. Two patients with partial graft losses were also from full thickness skin graft group and after

partial loss managed non-operatively, among these one had satisfactory outcome after healing and physiotherapy while other lost to follow up. There was no graft loss observed in split thickness skin grafts in initial period and all four loco regional flaps survived well. All 16 z plasties/v y plasties and commissuroplasties survived well without any complications. Most common reason for z plasties was flexion contracture of fingers and first web space contractures and axillary contractures. (Table 3)

Late results were satisfactory in 39 patients, 17 patients had no follow up record. 9 patients developed recurrence, among them 6 were treated with STSG and 3 with FTSG. Recurrence was more common in younger patients and mean age was 9.1 years. 5 of them had skin grafts as their primary burn treatment. Recurrence was more in hand and wrist region (n: 4) and more in patients who had fire burns (n: 6). All patients with recurrence were primary contractures except one who presented with recurrent contracture.

5 patients developed stiff hands mostly due to difficulties/non-compliance to physical therapy.

Satisfactory results were observed in patients treated with FTSG and flap and also in those patients treated with STSG who followed use of splints and physiotherapy.

Lack of follow up and lack of compliance was found to be most common problem in management. Pediatrics post burn contracture were difficult in terms of post-operative therapy. We found that donor area availability was major limitation of not doing flap coverage.

Discussion:

Contractures are very common after burns injury resulting from inadequate initial management and physiotherapy. The best way to treat them is to prevent them. Inadequate initial burn management not only

alter the depth of burn but also causes hindrances in physiotherapy because of immobilization, pain, frequent anesthesia and nutritional problems. Initial adequate burn management and aggressive physiotherapy and Splintage have key role in prevention of contractures. The protocols of Splintage and physiotherapy depend on region involved by burn. In any burn crossing joint or in surrounding of joints, early range of motion exercises should be started and region specific Splintage should be done. It is documented that early excision and grafting of deeper burns reduces infection, hospital stay and improves outcome and early exercises in such patients reduced development of contractures (1). In delayed grafting if early physiotherapy is not adequate the joints are stiff at the time of grafting and immobilization after grafting worsen the situation placing patient more prone to develop contracture especially in children (1,7).

There are various methods to treat post burn contractures depending on type and site of contracture and donor availability. Method of reconstruction in burns contractures should be simple and effective (3). Options of reconstruction include local flaps like z plasties/v-y plasties, skin grafts, loco-regional flaps and free tissue transfer and all are effective methods. Skin grafts are easy and reliable and if good post-operative physiotherapy and Splintage protocols are followed, provide satisfactory results. Full thickness skin grafts provide better results than split thickness skin grafts. In our patients treated with skin grafts we found that early graft loss is common in full thickness is common than split thickness but late recurrences are more common in splint thickness for reasons well documented in literature. Inadequate release and residual scar tissue on recipient bed is also important cause of early graft loss. K wiring is essential in digital contractures and effective method

of immobilizing grafts and with aggressive physiotherapy and appropriate custom made splints after removal, range of motion can be achieved. We used custom made splints for axilla, elbow, first web space and toe contractures and gained satisfactory results. Local flaps like z plasties, v-y plasties, and commissuroplasties are reliable methods to treat contractures and should be done whenever feasible. They work well even in burned surrounding skin. We used double opposing z plasties for first web space and canthal region with good results. Multiple z plasties with or without adjunct skin grafts work well in grade I and II axillary contractures and stern grade I and II in finger contractures. Multiple z plasties are also used for linear contractures of anterior neck, dorsum of foot and popliteal fossa. For digital web creep we used z plasties and transposition flaps with or without skin grafts. (figure 4)



Young female with post burn contracture of first web space, index, middle and little finger. Multiple z plasties done on index and middle fingers and FTSG on first web space and little finger.

Loco regional and distant flaps provide good coverage in contracture release depending on area involved, choice of flap and donor availability. Pedicled thoracodorsal artery perforator flap is good option for axillary contractures, supraclavicular (with or without expander) are very suitable for cervical contractures, perforator based flaps from medial or lateral thigh are reliable option for knee contractures, Pedicled lateral arm flaps provide good coverage to elbow contractures. Donor site availability is a single most important factor in not doing regional flaps. Over the last 25 years tissue expansion has

become a technique for overcoming such soft-tissue limitations (8,9). With survival in major burns, incidence of contractures is increased and treating surgeons face problem of donor availability. We performed 16 local and 3 regional flaps. We used genicular artery perforator flap for knee and lateral arm flaps for elbow contractures. In neck contracture we didn't find patients with good surrounding skin and very few patients refused for expanders. We have done supraclavicular flaps in cervical contracture, para-umbilical perforator flap for dorsal hand contractures which are not part of this study period. Free tissue transfer are good option in management of post burn contractures and should be planned whenever requirement is not fulfilled with other simple options (10). We routinely do micro vascular surgery in our institute for head and neck cancer reconstruction and trauma but in our post burn contracture protocol we keep them as last option, and use simpler options first. In our study there is no free flap is done for contractures.

In our study majority patients are from pediatric age group and this need special consideration. Contractures in children are very easy to develop and very difficult to treat. Post-operative physiotherapy and Splintage are very difficult in children and cause anxiety for parents as well. With growth problems recur and it needs to be discussed with parents in detail before planning any treatment. We found recurrence to be high in children and complications like stiff hand are also more in children than adults.

Post-operative plan should be discussed in details with patients and parents/caretakers. We found very high rate of lost follow-up despite of explaining all parts of treatment in details. During our study we realized that documentation should be improved and all parts of treatment planning should be well documented along with areas involved and options available and patient's compliance

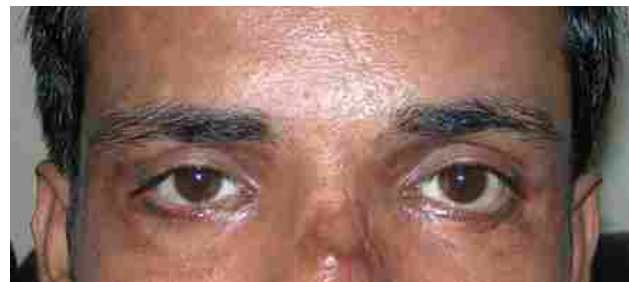
and post-operative progress should be well written in clinical notes.

Conclusion:

Post burn contractures are difficult to treat specially in children. Defining success is difficult in their treatment as initial treatment is successful in almost all patients but late outcome may not be very good. Skin grafts are simple and reliable options and provide satisfactory results if physiotherapy and Splintage is done aggressively. Full thickness grafts should be preferred over split thickness skin grafts. Local transposition flaps are reliable even in surrounding scarred/burned skin. Regional and distant flaps are very good options and should be planned whenever feasible.

Figure: 5

Young male with post burn ectropion of both lower eyelids, released and re surfaced with FTSG



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Malignant Change in Composite Haemangioendothelioma Over 13 years

Dr. Munir Alam, Dr. Michael Moriarty, Dr. Susan Kennedy, Dr. Sean M Carroll

Abstract:

For descriptive purpose the term "composite hemangioendothelioma (HE)" is used to include the features of more than one subtype of HE. Composite HE rarely undergoes malignant transformation and does not usually metastasise.

A 57 year old man who first presented with a soft swelling on the dorsum of his right hand 13 years ago. It was excised and recurred on multiple occasions regionally on the right hand and forearm. The histological features consistently remained as a composite hemangioendothelioma for 10 years. Thirteen years later it recurred again on forearm and arm which is managed with wide excision and free rectus abdominus muscle flap reconstruction. However, histology showed a features suggestive of frank angiosarcoma.

Key words: Haemangioendothelioma; Malignant vascular tumour; Angiosarcoma; Recurrence.

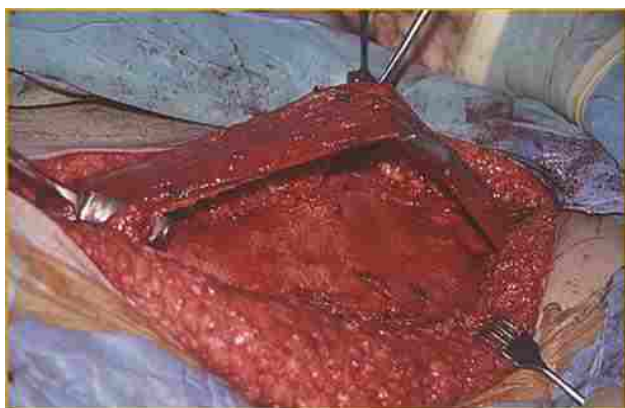


Fig. 1
Angiosarcoma arising in a previously diagnosed composite haemangioendothelioma



Fig. 2
Wide excision of tumour and reconstruction with free rectus abdominus muscle and split thickness skin graft



Fig. 3
Healed flap and skin grafts

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The term "hemangioendothelioma" has been applied in recent years to heterogeneous group of vascular neoplasms, intermediate in both behaviour and histologic appearance between benign tumours (hemangioma) and frankly malignant tumours (angiosarcoma).

The spectrum of HE encompasses spindle cell HE (2), kaposiform HE (2), retiform HE (3), epitheloid HE, and polymorphous HE of the lymph nodes. It is a small group of vascular neoplasms that may show considerable overlap in histological appearances.

We report our experience with a patient characterised as epitheloid HE, retiform HE, and with angiosarcoma-like areas on first excision. Later the lesions recurred locally and was excised with similar histology on multiple occasions. A regional recurrence after 13 years on the forearm and arm showed features of high grade angiosarcoma.

Case Report

A 57 years old man presented with a 3 cm area of ill defined "swelling" on the dorsum of his right hand in 1992 of 3 years duration. The lesion was excised and reconstructed with split thickness graft. Microscopic examination of the specimen showed a poorly circumscribed mass composed of an infiltrate of cells. The tumour was "Composite haemangioendothelioma", being composed of areas with strikingly epitheloid cytology, as well as more spindle cell areas and foci with a retiform appearance. The cells showed a moderate pleomorphism and individual vacuolization. Mitotic figures were scanty. The cells laid in a predominantly hyaline matrix. Immunohistochemistry showed positive staining for factor VIII and vimentin. Staining for Cam 5.2, S100 and desmin were negative. The tumour had a multinodular appearance and showed large foci of tumour in the specimen and extending to all excision margins.

There were multiple local and regional

recurrence over the subsequent 10 years on the right hand, forearm and arm. These were managed by excision and reconstruction either with split thickness skin graft or local fasciocutaneous flap. During this time he was treated by local radiotherapy 50 Gy divided into 25 sessions, to his hand, forearm and arm in 1994 and a trial of chemotherapy in 1997 including 5FU/leucovorin and DTIC with no effect. In 2000 also received thalidomide and interferon

again of no benefit. On number of occasions, he was treated with local radiotherapy approximately 15 Gy to control the pain and bleeding and had two short courses of photodynamic therapy in 2001 and 2002.

Thirteen years after the initial presentation a large area of multiple exophytic and ulcerative disease persisted over the right forearm and lower arm (Fig1) and this necessitated a wide excision of the tumour and reconstruction with a free rectus abdominus muscle flap and split thickness graft in 2002 (Fig 2). The histology revealed a malignant vascular tumour with multiple mitoses and atypical nuclear morphology. This was an extensive and multifocal vascular tumour which focally involves radial and deep margins.

Subsequently, he developed regional recurrence of the tumour in the right upper limb with metastasis in the axillary lymph nodes. Biopsy of specimen from the right arm in Sep, 2003 showed a malignant tumour expanding the dermis and subcutis with predominantly epitheloid morphology with prominent vascular channels. The specimens of lymph nodes from right axilla are extensively replaced by metastatic vascular tumour, showing epitheloid and spindle cell morphology, with extranodal extension. There is no evidence of disease progression since 16 months later, confirmed by staging MRI and CT scans.

Discussion:

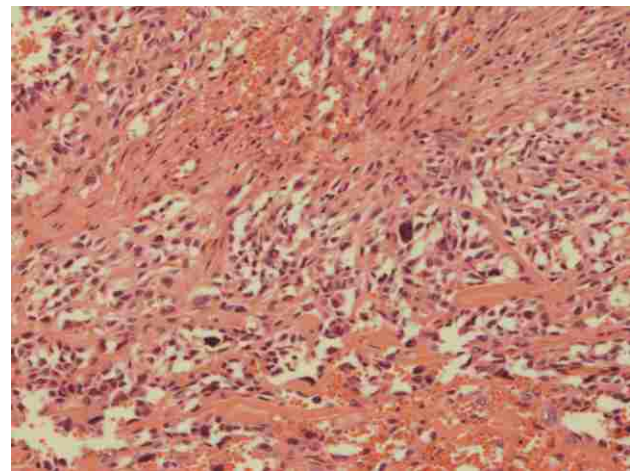
The term "haemangioendothelioma" (HE) has been applied in recent years to heterogenous group of vascular neoplasms, intermediate in both behaviour and histological appearance between benign tumours (haemangioma) and frankly malignant tumours (angiosarcoma).

Haemangioendothelioma is a well differentiated vascular tumour, usually locally aggressive and angiosarcoma is a anaplastic and highly metastasizing counterpart. Therefore, it can be regarded as a rare low grade tumour of vascular origin. All age groups can be afflicted and there is a predilection for men. In order to attempt the prediction of outcome from observance, molecular and biochemical means, haemangioendothelioma may vary in appearance from a small pedunculated nodule to a large invasive mass. They are either skin-coloured, or reddish purple soft nodules, or dusky red infiltrated plaques which have tender raised margins and may be surrounded by a slowly spreading erythema. The lesions may be covered by scales

or haemorrhagic crusts and may ulcerate (4). Angiosarcoma is high grade sarcoma, with an aggressive metastasizing potential. Radiotherapy may induce angiosarcoma in a previously benign lesion. The interval between radiotherapy and malignant change is usually more than ten years which is not in our case. The lymph node metastasis is the dominant pattern in case of angiosarcoma and rarely hematogenous. Pathologically it presents as a haemorrhagic tumour, with histological evidence of neoplastic vascular tissue. The lesion may be multicentric in origin. The most striking feature of composite haemangioendothelioma at low power is the variability in appearance from patient to patient and from area to area. This is due to the relative proportions and arrangement of individual histological components within the tumour.

It is not uncommon for expert sarcoma pathologists to disagree about specific histologic diagnosis. Few pathologists have the opportunity to study many of these rare tumours during their careers, and this lack of experience may contribute to the relatively low concordance rate(5). In our case all specimens were reviewed by the same expert pathologist Christopher D.M Fletcher, over the period of 13 years (5,7).

However, we control the disease by local resections and reconstruction, radiotherapy and chemotherapy. To our knowledge till 2006, he is alive with recurrent composite HE with regional recurrence and conversion into angiosarcoma in the right arm and metastasis in the right axillary lymph nodes. His right upper limb is functional to his daily activities.

**Fig. 4.**

Angiosarcomatoid area shows vascular channel with dissecting fibroconnective tissue and red blood cell extravasation is seen. The vascular channels show a marked degree of cytologic atypia.

Conclusion:

For all Composite HE, the close surveillance for the possible development of recurrence and transformation into malignant disease is recommended. In the long term, the patient can be managed with treatment modalities available without scarifying important structures of the body

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Nevus Comedonicus: A Rare Skin Lesion

Dr. Zain-ul-Abidin, Dr. Muhammad Sheraz Raza, Dr. Moazzam Nazeer Tarar

ABSTRACT

We present a case of 26 yr old male having blackish pigmented lesion with multiple sinus discharge over left side of abdomen, the lesion consisted of multiple, comedo like openings with dark keratin plugs dispersed over hypopigmented area. It was diagnosed as a nevus comedonicus on clinical and histopathological grounds. We managed him with excision of the lesion and covered with split thickness skin graft. Patient recovered completely and healthy with regular follow up from last one month.

Key words: Hypopigmented . Comedo. Split thickness skin graft .

Introduction

Nevus comedonicus (NC) is a benign hamartoma of the pilosebaceous unit and is considered a rare subtype of epidermal nevus¹. Nevus comedonicus (NC) or comedo nevus refers to closely arranged, grouped, often linear, slightly elevated papules that have at their center keratin plugs resembling comedones. It can be present at birth, but may occur at any time, up through middle age². The commonest site is the face, followed by the neck, trunk and upper arm⁷. This disease was first described in 1895 by Kofmann who suggested the term "Comedo Nevus"³. The incidence of NC is estimated at 1/45,000, with no sex-related differences⁴. When NC is associated with cataracts, skeletal defects, or central nervous system abnormalities, it is called Nevus Comedonicus Syndrome (NCS)⁵. A diagnosis of Nevus Comedonicus may be made using a clinical examination, dermoscopy (examination of the skin using magnifying lens), and a tissue biopsy⁶. The case has been presented for its sheer rarity in Pakistan.

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Case Report

We report a case of nevus comedonicus in 26 year male patient over abdomen. There was a black pigmented lesion appeared on left side of abdomen when the patient was 10 yr old since then it has increased in parallel to body growth. It was closely arranged, dilated follicular openings with keratinous plugs resembling classic comedones (Figure 1).

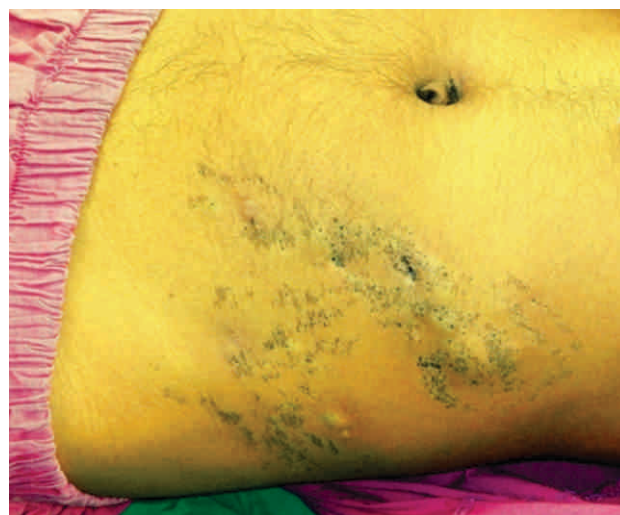


Figure 1 .
lesion left side of abdomen, showing multiple group of pilosebaceous gland with keratin plug.



Figure 2.
Intraoperative picture showing split thickness skin grafting done after excision of lesion.



Figure 3.
post operative wound showing graft take, on followup after 2 weeks.

There was history of multiple sinus discharge from last two years. He had taken oral and topical antibiotic creams applied multiple times but couldn't get relief. He had also taken a nine month course of anti tuberculous drugs advised by some local doctor. There was no associated skeletal and neurological abnormality. He denies any history of trauma or irritation. He was non smoker with negative family history.

Examination revealed multiple groups of dilated pilosebaceous orifices filled with black keratin plugs arranged linearly along the left side of umbilical area over abdomen. These plugs couldn't be extracted manually. Initially it was asymptomatic, but later on

there were multiple comedones, closely arranged sinus with minimal discharge were present. Face, head and neck region, extremities, including hands, feet and nails, as well as mucous membranes were spared. Family history and routine laboratory studies were unremarkable. Histopathological finding were suggestive of nevus comedonicus (Figure 4).



Figure 4.
Histological section revealed, Invaginated papillary projections filled with laminated keratin plugs.

Discussion

Naevus comedonicus is a rare hamartoma of the pilosebaceous unit.⁸ Study of Levenson JL suggest that NEK9 mutations in NC disrupt normal follicular differentiation and identify NEK9 as a potential regulator of follicular homeostasis¹⁰. NC is classified into two main types based on its clinical characteristics³. The first type is non-pyogenic NC with acne like characteristics. The second type is NC with cysts, papules, pustules, or abscesses that undergo morphological changes¹¹. In our patient, there were two groups of comedo like pores arranged linearly with intervening normal skin. The intervening epidermis may appear normal, hyperkeratotic, or slightly hypo- or hyperpigmented. In the inflammatory variant, there will be suppurative cysts and acne like lesions^{9,8}.

Nevus comedonicus syndrome is the association of nevus comedonicus with non-cutaneous findings such as skeletal defects, cerebral abnormalities, and cataracts 8. Detailed examination of our patient did not reveal any other abnormalities.

Treatment of comedo naevus includes surgical excision with tissue expansion which is more effective in the long term than superficial shaving or dermabrasion. Topical retinoic acid and 12% ammonium lactate may be used.

NC poses a great challenge to clinicians, and the only effective treatment method is surgery. It is important for those with NC to maintain good hygiene, and antibiotics can also be used as a conservative method of treatment. As a localized treatment, retinoic acid can be used to induce the expansion and differentiation of keratinocytes, which would be effective for the elution of nevus.

In addition, ammonium lactate lotion softens the epidermis, thereby promoting the excretion of nevus. Other available treatments include the mechanical removal of nevus, dermabrasion or laser therapy. However, these methods cannot prevent recurrence of the lesion and surgical removal is the treatment of choice for NC. Cases with larger affected areas require staged excision or skin grafting. In some cases, reconstruction using a tissue expander would be helpful 11.

In conclusion, we are presenting a case of linear nevus comedonicus on abdomen. This rare case has been presented for its classical presentation and rarity in Pakistan. Previously a case of epidermal nevus syndrome has been reported in Pak peads journal 12.

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corresponding author), abstract, key words, text, references, tables (each table, complete with title and footnotes) and legends for illustrations and photographs. Each component should begin on a new page. The manuscript should be typed in double spacing as a single column on A4 (8-1/2" x 11" or 21.5 cm x 28.0 cm), white bond paper with one inch (2.5 cm) margin on one side.

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