Histopathological Pattern of Skin Diseases in a Teaching Hospital Puducherry

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Research Article

Abstract: **Aims**: This study is conducted to study the prevalence of various skin lesions attending the outpatient department of dermatology over a period of one year dec2012-dec2013. **Materials and Methods**: A total of 125 cases of skin lesions for over a year were taken for the study. Diagnosis was confirmed by histopathological examination with Hand E stain. Special stains were done wherever required. **Results** : Out of 125 cases, 30(24%)were reported under the category of non-infectious erythematous papulosquamous diseases, 20(16%) cases of leucocytoclasticvasculitis, 6(4.8%) cases of vesiculobullous and vesiculopustular diseases, 15 (12%)cases were reported as connective tissue disorders amongst which morphea, 12(9.6%)was the commonest, granuloma annulare 1 case(0.8%), erythema nodosum 2 (1.6%), 5(4%) cases of cutaneous drug toxicities, infectious etiology was reported in 15(12%) cases, pigmentary disorders of the skin was reported in 5(4%), 2(1.6%) cases of tumors arising from epidermal appendages, 5(4.0%) cases of tumors and cysts of epidermis and miscellaneous category,15(12%) cases. **Conclusion :** Among skin infections papulosquamous lesions were more common in our region with psoriasis being the most common lesion.

Keywords: Skin lesions, histopathology, papulosquamous diseases,

Introduction

The pattern of skin diseases varies from country to country and various regions within the same country [1]. Occasionaly skin diseases can be manifestation of systemic diseases [2]. Skin diseases are also influenced by various factors like environment, economy, literacy, racial and social customs [2]. Here we report the skin lesions among the patients attending the outpatient department of dermatology of our college and classified them into various categories according to the morphology of the lesion. This helps to study about the frequency of the various skin lesions in and around our hospital area. The diagnosis was based on the clinical presentation of the patient, biopsy report and additional studies depending on the case.

Materials and Methods

It is a cross sectional study conducted on the patients attending the outpatient department of skin and venereal diseases of Sri Venkateshwaraa Medical College Hospital and Research center. The study period taken is fromdecember 2012- november 2013. The diagnosis was based on clinical presentation of the patient and histopathological examination. The slides were stained with Hand E for each case. Depending on the clinical suspicion, special stains like PAS, Acid fast stain and fitefaraco stain were performed on the tissue sections.

Results

A total of 125 cases were studied during the study period which were classified into different groups(**Table.1**) Majority of the cases 30(24%)were reported under the category of non-infectious erythematous papulosquamous diseases which included Erythema annularecentrifugum 1(0.8%), Erythema dyschromicumperstans 2(1.6%), Ashy dermatosis 1(0.8%), Prurigonodularis 4(3.2%), Psoriasis vulgaris 12(9.6%), Pityriasisrosea 1(0.8%), Lichen planus 7(5.6%), Lichen nitidus 1(0.8%), Lichen simplex chronicus 1(0.8%). 20(16%) cases of leucocytoclasticvasculitis were reported which was predominantly small vessel vasculitis. 6(4.8%) cases of vesiculobullous and vesiculopustular diseases were reported. Spongiotic dermatitis 1(0.8%), Erythroderma and generalized exfoliative dermatitis (0.8%), Bullous pemphigoid 1(0.8%), Subcornealpustulardermatosis 2(1.6%), Erythema multiforme 1(0.8%). 15 (12%)cases were reported as connective tissue disorders amongst which morphea,12(9.6%)was the commonest. The others were Atrophoderma of pasini and pierini 1(0.8%), Lichen sclerosusetatrophicus 1(0.8%), Reiters syndrome 1(0.8%). Non infectious granulomas like granuloma annulare 1 case (1.25%) ; inflammatory diseases of subcutaneous fat – erythema nodosum 2 (2.50%) ;

metabolic diseases like lichen amyloidosis 1(1.25%) were reported. 2 (1.6%)cases of congenital disorders- Dariers disease 1(0.8%) and Acrokeratosisverrucoformis of hopf 1(0.8%) were also reported. 5(4%) cases of cutaneous drug toxicities like Lichenoid drug eruption 3(2.4%), Erythema multiforme 1(0.8%) and Fixed drug eruption 1(0.8%) were reported. Infectious etiology was reported in 15(12.0%) cases – Bacterial infections like- Lupus vulgaris 1(0.8%), Leprosy 3(2.4%), Actinomycosis 3(2.4%) and Scrofuloderma 1(0.8%) ; Fungal infections like zygomycosis 1(0.8%),subcutaneous phaeohyphomycosis 2(1.6%) and chromoblastomycosis 1(0.8%) ; Viral etiology in 3(2.4%) cases reported as verruca vulgaris. Pigmentary disorders of the skin was reported in 5(4.0%) cases - Vitiligo 3(2.4%), Organoid nevus 1(0.8%) and Malignant melanoma 1(0.8%). 2(1.6%) cases of tumors arising from epidermal appendages were reported as eccrineporoma. 5(4.0%) cases of tumors and cysts of epidermis - Seborrheic keratosis 1(0.8%), Epidermal cyst 2(1.6%), Milia 1(0.8%), Squamous cell carcinoma 1(0.8%) were reported. The miscellaneous category included 14 (11.2%) cases of chronic non specificdermatoses and 1(0.8%) case of acquired digital fibrokeratoma

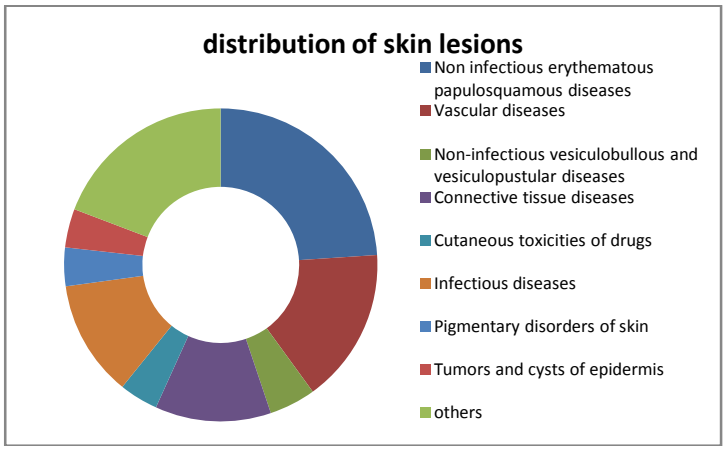

Figure 1: Shows distribution of common skin lesions in different groups

(other lesions include-non infectious granulomas,inflammatory diseases of subcutaneous fat,metabolic skin diseases, congenital diseases,tumors of epidermal appendages)

Table 1: Shows classification of skin lesions in various groups according to the histopathological examination

Disease category	Skin diseases – biopsy report	No. of cases	%
Non infectious erythematous papulosquamous diseases	Erythema annularecentrifugum, Erythema dyschromicumperstans, Ashy dermatosis, Prurigonodularis, Psoriasis vulgaris, Pityriasisrosea, Lichen planus ; hypertrophic LP, Lichen nitidus, Lichen simplex chronicus	30	24
Vascular diseases	Small-vessel neutrophilic/leucocytoclasticvasculitis, Neutrophilicdermatosis	20	16
Non-infectious vesiculobullous and vesiculopustular diseases	Spongiotic dermatitis, Erythroderma and generalized exfoliative dermatitis, Bullous pemphigoid, Subcornealpustulardermatosis, Erythema multiforme	6	4.8
Connective tissue diseases	Morphea, Atrophoderma of pasini and pierini, Lichen sclerosus et atrophicus, Reiters syndrome	15	12
Non infectious granulomas	Granuloma annulare	1	0.8
Cutaneous toxicities of drugs	Lichenoid drug eruption, Erythema multiforme, Fixed drug eruption	5	4
Inflammatory diseases of subcutaneous fat	Erythema nodosum	2	1.6
Infectious diseases	Bacterial- Lupus vulgaris, Leprosy, Actinomycosis, Scrofuloderma Fungal-zygomycosis,subcutaneousphaeohyphomycosis,chromoblastomycosis Viral-verruca vulgaris	15	12
Metabolic diseases of skin	Lichen amyloidosis	1	0.8
Pigmentarydisorders of skin	Vitiligo, Organoid nevus, Malignant melanoma	5	4
Congenital diseases	Dariers disease, Acrokeratosisverrucoformis of hopf	2	1.6
Tumors of epidermal appendages	Eccrineporoma	2	1.6
Tumors and cysts of epidermis	Seborrheic keratosis Epidermal cyst, Milia, Squamous cell carcinoma	5	4
Miscellaneous	Chronic non specificdermatosis, Acquired digital fibrokeratoma	15	12
Total no. of cases		**125**	**100**

Discussion

In our study the female to male ratio was high (F>M; 91.25% and 8.75%). Youngest patient was 3 years old and oldest was 85 years old. Most patients were falling under the age group <50 years ; similar findings were also shown by Emmanouil K S *et al*,2006 in their study[3].A large proportion of the cases in our study were 24%non-infectious erythematous papulosquamous diseases, followed by 16% leucocytoclasticvasculitis, 12%connective tissue disorders and infectious diseases each, 4.8% vesicobullous and vesicopustular lesions, 4% each of tumors of skin and epidermis, cutaneous drug toxicities, pigmentary disorders of skin with a small percentage of the other lesions like granuloma annulare, erythema nodosum, lichen amyloidosis, eccrineporoma, congenital diseases and miscellaneous group. This data is in contrast to the other studies conducted in different parts of the country where the infectious diseases and eczema contribute to the largest number of cases. Reports of Das a *et al* (2005) described the pattern of skin infections in urban population in Kolkata with eczematous diseases forming 83.25%, pyodermas 14.36% and fungal infections9.7%, psoriasis 5.39%, vitiligo 4.32% [4]. In the study conducted by Bijayanti devi, 2006, in Imphal, eczema was the most common disorder(17.48%), fungal, infections (17.19%), pyodermas (9.10%),scabies(8.97%), dermatophytosis(13.82%), acne vulgaris (6.06%),urticarial (5.68%),viral infections(3.78%),also rarely candidiasis, deep mycosis, hansens, tuberculosis, vesiculo-bullous lesions and connective tissue disorders[5]. In the study conducted by Sarkar SK, 2010, infective skin diseases formed 43.29% and non-infective skin diseases were 56.71% of all cases. Eczema was the commonest lesion(19.2%), fungal infections(17.26%), pyoderma(7.59%), bullous disorders(0.08%) and collagen disorders(0.16%)[2]. The study conducted by N.Asokan, 2009, found fungal infection (18.74%), bacterial (6.74%), parasitic (4.31%) were commonly found among infectious skin disorders and eczema (21.83%), papulosquamous (12.3%), psoriasis (7.75%) were the non-infectious category [6]. In the study conducted by Anand IS, 1998, in Saurashtra, showed 83.25% of skin infections, 8.55% allergic and 8.25% miscellaneous disorders [7]. Among the papulosquamous diseases, majority of the cases were psoriasis(9.6%) with similar findings with the study conducted by Sudip Das in 2007(6.11%papulosquamous diseases) of which psoriasis was the commonest(4%)[8].Psoriasis presents at any age as well circumscribed, circular red papules or plaques with silvery white dry scaling[9]. The lesions are distributed symmetrically on scalp, knees, lumbosacral area and body folds[9]. Psoriasis has variable morphology, distribution and severity. Variants of psoriasis are pustular, erythrodermic, plaque psoriasis, guttate, flexural and palmoplantar type [9]. We reported twelve cases of psoriasis with four cases presented with generalized exfoliation hence clinical diagnosis of exfoliative dermatitis was given. The majority of cases were chronic plaque psoriasis with two cases of guttate type. It may have associated nail changes and features of arthritis which was not noted in our patients. Histopathological analysis of the biopsies included eight criteria-epithelial hyperplasia, parakeratosis, Munroes and Kogojsmicroabscesses, suprapapillary thinning, inflammatory infiltrate, widened rete ridges and capillary proliferation [10]. Majority of our sections revealed all the criteria required for the diagnosis. Nine cases(5.6)% of lichen planus were reported out of which seven cases were hypertrophic type, one case of lichen nitidus and one case of lichen simplex chronicus. The classic lesion presents as purplish, polygonal, planar pruritic papules and plaques on the flexor surfaces of legs and arms [11]. It can occur in oral mucosa, scalp, nails, skin and other mucosae. Clinical classification of oral lichen planus suggested by Silverman are of 3 types – reticular, atrophic and erosive[12]. The differential diagnosis between lichen planus and lichenoid reaction is based on the combination of clinical and histological aspects. The clinical criteria includes presence of bilateral symmetrical and white reticular lesions which may be erosive, bullous, atrophic or a plaque appearing alongwith reticular lesions in a given area of oral cavity[13].The histologic criteria includes presence of band like lymphocytic infiltrate in subepithelial connective tissue, hydropic degeneration of basal layer and absence of epithelial dysplasia[13]. Classic cases of lichen planus in our study were of reticular type mostly located in the buccal mucosa as has been shown in other studies [14, 15, 16]. Erythema annularecentrifugum represents a cutaneous hypersensitivity reaction associated with conditions likeinfections, bautoimmune or neoplastic diseases characterized by dense perivascular lymphocytic infiltrate in dermis [17].In our case differential diagnosis of erythema elevatumdiutinum/lymphocytic infiltration of Jessners/granuloma annulare was given. 16% cases of small vessel neutrophilic/leucocytoclasticvasculitis were reported. The etiology is mainly infectious and immunological injury. Neutrophilicdermatoses is characterized histologically by neutrophilic infiltrate in the absence of any infective pathology [18]. Neutrophilicdermatoses can be classified based on the histological patterns into 1).predominantly epidermal infiltrate; 2) dermal neutrophilic infiltrate;3)appendagealneutrophilic infiltrate[19]. Majority of cases reported in our study were reported to have leucocytoclasis and predominantly neutrophils along with mixed dermal infiltrate. The causes of erythema

multiforme and its disease spectrum are numerous like herpes simplex virus, mycoplasmapneumoniae, and drug reaction; is more common in male patients less than 20 years [20]. The lesions appear symmetrically on extensor aspect of limbs with target like appearance [20]. Mostmucocutaneous lesions tend to heal completely in 2 to 6 weeks [21]. Two cases of subcornealpustulardermatosis were reported, 49 year male and 61 year female, who presented with 6 months history of itching and eruption of superficial small pustules over the abdomen, groin and thighs which on rupture left polymorphic lesions with superficial scaling. The differential diagnosis includespustular psoriasis, impetigo, dermatophyte infection, and immunobullous diseases (dermatitis herpetiformis, pemphigus, linear IgA disease, and intercellular IgA diseases) [22]. Twelve cases of morphea were reported, diagnosis mainly depends upon clinical presentation, biopsy results and laboratory investigations for autoimmune etiology. Localisedscleroderma (morphea) may involve an autoimmune etiology and affects the microvasculature and loose connective tissue [23]. The skin biopsy mainly showed epidermal atrophy with thickened collagen bundles and a sparse perivascular and dermal chronic inflammatory cell infiltrate which was similar to the findings reported by Valentina Dimitrova [23]. Three cases of lichenoid drug eruption were reported in which no history of drug intake could be elicited from the patient; diagnosis was merely a clinical suspicion. Biopsy showed acanthosis, hyperkeratosis with vacuolar changes in the basal layer and infiltrate of eosinophils and neutrophils around blood vessels. The clinical presentation was mostly multiple ill defined macules to patches over trunk and limbs, sparing the face. The clinical differential diagnosis included a contact allergy to a cleaning agent, a sudden aggravation of an underlying atopic dermatitis, palmoplantar psoriasis, and lichen planus as was suspected in the case reported by Kolm[24]. A case of perforating granuloma annulare was reported in 38year male who presented with multiple punched out ulcers over the trunk and proximal extremities with black eschar over the ulcers. Differential diagnosis of ecthymagangrenosum /papulonecrotictuberculids was given. The differential diagnosis such as cutaneous tuberculosis, atypical mycobacteriosis, skin sarcoidosis, foreign body granuloma, epidermoid carcinoma or perforating dermatitis was considered in the case reported by Billet *et al* [25]. Risk factors like diabetes, ultraviolet light, insect bites or trauma were not associated in our case like the case reported by Billet *et al* [25]. The biopsy picture in our case showed deposition of degenerated collagenous and mucoid material surrounded by histiocytes. AFB stain was negative and PAS stain was positive for mucin. Hence the diagnosis of perforating granulomaannulare was given. A case of lichen amyloidosis was reported with clinical presentation of single, ill-defined hyperkeratotic dry patch over right leg. Lichen amyloidosis is a subtype of primary localized cutaneous amyloidosis, wherein there is deposition of amyloid in previously apparently normal skin with no evidence of deposits in internal organs [26]. Genetic factors, viral factors and chronic friction due to scratching are believed to be the possible causes [27]. The widely believed theory is that in predisposed individuals, focal epidermal damage and filamentous degeneration of keratinocytes is followed by apoptosis and conversion of filamentous masses into amyloid material in the papillary dermis [28]. Confirmation can be done by special stains for amyloid and X-ray crystallography. Erythema nodosum (EN) is the most frequent form of panniculitides presenting as red, very tender and nonulcerating nodule of the lower extremities, especially pretibial regions that usually involuteswithin 3 to 6 weeks[29]. It can be classified as primary or secondary (behcets syndrome, poststreptococal, glomerulonephritis, primary tuberculosis, sarcoidosis, inflammatory bowel disease [29]. The classical histopathology is an acute septalpanniculitis without vasculitis, early finding is neutrophilic infiltrationand late finding is Miescher'smicrogranulomatous focus constitutedofhistiocytic giant cells and lymphohistiocytes [29]. A case of 60 years female who presented with multiple erythematous papules over limbs and upper back with clinical differential diagnosis of sweet syndrome/drug induced vasculitis/erythema nodosum/type I reaction of Hansens was reported to. Finally the report was given as erythema nodosum. Three cases of actinomycosis of foot were diagnosed which were confirmed and differentiated from eumycoticmycetoma by staining the biopsy sections with gram stain – gram positive filamentous bacteria were observed in these cases where as PAS stain was negative in these cases. The main differential diagnoses of chronic bacterial osteomyelitis, tuberculosis, or the early phase of Buruli ulcer, fungal infections such as blastomycosis or coccidiodomycosis, leishmaniasis, yaws and syphilis should be considered [30]. Differentiation between actinomycetoma and eumycetoma is important because of the different responses to treatment [30]. Hence clinical history, histopathological study along with special stains is required for the confirmation of the diagnosis. A case of scrofuloderma was reported in a 16 years old male who presented with multiple discharging sinuses over the left shoulder and axillary region. Differential diagnosis of hidradenitissuppurativa /srofuloderma/perforating

tuberculids was given. The biopsy showed presence of epithelioidgranulomas, necrosis and dense lymoplasmacytic infiltrate mixed with neutrophils. The AFB stain was negative. We advised for culture for confirmation of the diagnosis. This case was similar to one reported by UsmaIftikar and others [31]. They also kept in mind the differential diagnosis of multiple discharging sinuses like actinomycosis, eumycetoma, sporotrichiasis, botryomycosis, nocardiosis and hidradenitissuppurativa[31].

Three cases of hansens disease were reported, among which 2 cases were treated patients with persisting skin lesions and 1 was indeterminate leprosy. The biopsies from treated patients had findings of flattened epidermis with increased melanin in basal layer, edema of perivascular and periadnexal adventitial dermis with scattered noncohesivelymphoplasmacytic cells and mast cells, and morphea like sclerosis in the dermis, which were also seen in a study by Joshi R [32]. Two cases of subcutaneous phaeohyphomycosis were reported which were clinically diagnosed as sebaceous cyst and lipoma/bursitis. On gross examination both the cases had pultaceous necrotic material within the cystic cavity. Biopsy showed cyst wall made of fibrocollagenous tissue with granulomatous reaction with presence of histiocytes, mulitinucleated giant cells, lymphocytes, plasma cells with areas of fibrinoid necrosis admixed with numerous neutrophils in the cyst cavity. Also seen were brown pigmented fungal hyphae which were slender and septate found within the multinucleated giant cells as well as outside in the areas of granulomatous reaction and necrosis. PAS stain highlighted the fungal organisms. Phaeohyphomycosis is a mycotic infection of humans and lower animals caused by a number of dematiaceous (brown-pigmented) fungi where the tissue morphology of the causative organism is mycelia which separates it from other clinical types of disease involving brown-pigmented fungi where the tissue morphology of the organism is a grain (mycoticmycetoma) or sclerotic body (chromoblastomycosis)[33]. The Fontana-Masson stain (specific for melanin), periodic acid-Schiff and Gomorimethenamine-silver stains can be used to confirm the diagnosis [33]. The treatment of choice is surgical excision, but additional anti-fungal therapy is recommended for recurrent cases and immunocompromised patients [34]. Chromoblastomycosis is a chronic fungal infection that results from inoculation of fungi after penetrating cutaneous injury, affects upper and lower limbs as a slow growing verrucous nodule [35]. The microscopic picture shows microabscess formation with granulomas in the dermis and classical copper penny bodies with brown pigmentation [35] as was seen in our case also. Our case was 28 years male who presented with hyperpigmented plaque with multiple tumefactions, discharging sinuses and granulation tissue over the popliteal fossa ; differential diagnosis of actinomycotic/eumycoticmycetoma was given. 78 year old male presented with an ulcero-proliferative lesion over right thigh for last 20 years. Clinical diagnosis of dermatofibroma / melanoma was given. Excision biopsy reported the lesion as eccrineporoma. Eccrineporoma,a variant of poroid neoplasm, represents 10% of all sweat gland tumors[36]. It is a benign tumor of sweat gland composed of epithelial cells with eccrine type distal tubular differentiation [36]. The pathogenesis is unknown, although it has been associated with scarring, trauma and radiation [37]. Malignant changes in long standing cases have been recorded when these lesions present with pain, sudden increase in size, bleeding or itching [38]. Two cases of malignant lesions were reported; one case of squamous cell carcinoma in a non healing ulcer of left foot and other case of malignant melanoma of left foot.The last category of diseases classified as miscellaneous lesions includes the lesions which did not represent the typical histopathological picture of any condition hence they were reported as chronic non specificdermatoses.

Conclusion

Out of 125 cases taken for the study, the most common skin lesion reported was non infectiouspapulosquamous lesion(24%) with psoriasis being the commonest lesion(9.6%), leucocytoclasticvasculitis 16% and 12% infectious diseases, 12% cases of connective tissue disorders with morphea being the most common lesion, 11.2% chronic non specific dermatoses and others. Hence it is imperative to correlate clinical presentation of the patient, with biopsy report, special stains and ancillary studies to help arrive at a final diagnosis especially for skin lesions.

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