

Clinico-Pathological Study of Papular Lesions of the Skin

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Abstract

Although histological study is one of the most valuable means of diagnosis in dermatology, it has its own limitations. Often no definitive diagnosis can be made. The reason for this is often very few dermatoses, aside from tumors are regularly associated with a diagnostic histopathological picture. *Materials and Methods:* This study is a prospective cross sectional study done at Adichunchanagiri Medical College, BG Nagar, Karnataka, India, over a period of 2 years from march 2015 to 2017 march comprising of 120 cases of papular lesions of the skin. *Results:* 120 case of papular lesions were divided into 11 groups and subgroups. The infectious disease constituted the majority of cases and degenerative disease and tumors of vascular tissue was the least. *Conclusion:* From this study is that histopathological diagnosis although is one of the valuable means of diagnosis in dermatology, it has been shown to have its own limitations as often no differential diagnosis is made. In many instances the chief value of histopathology lies in corroborating the clinical diagnosis or in ruling out the possible diseases. In spite of that histopathology has a major investigative role in papular lesions of the skin.

Keywords: Papular Lesions; Inflammation; Diagnosis.

Introduction

The skin is the largest and the most exposed organ of the body which is subjected to many pathological conditions. Although the lesions of skin are mainly diagnosed by a dermatologist according to clinical signs and symptoms, histopathological diagnosis also plays a key role in arrival of the diagnosis and helps in the treatment of patients [1].

Although histological study is one of the most valuable means of diagnosis in dermatology, it has its own limitations. Often no definitive diagnosis can be made. The reason for this is often very few dermatoses, aside from tumors are regularly associated with a diagnostic histopathological picture. In many instance

the chief value of histopathology lies in corroborating the clinical diagnosis [2].

The skin like most other body tissue has a limited number of reaction pattern with which it can respond to stimuli. So, clinically different lesions may show essentially similar histopathology pattern [3].

It is very important to know the clinical details, site of biopsy, clinical diagnosis and differential diagnosis [1].

The clinical picture of a skin disorder may not be diagnostic. It is further complicated by secondary changes in the lesion or by the indiscriminate use of cortico steroids and other local applications. In such situations histological picture varies. On the other hand the histological picture of a classical clinical lesion may not be specific and may have variants. In such cases accurate clinical, bacteriological, and serological details may be of great help to pathologist to arrive at the final diagnosis.

So, the aim of the present study is to correlate the clinical and histopathological findings of papular lesions of the skin.

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Materials and Methods

This study is a prospective cross sectional study done at Adichunchanagiri Institute of Medical Sciences, BG Nagar, Karnataka, India, over a period of 2 years from march 2015 to march 2017.

The study comprised of histopathological study of 120 cases of papular lesions of the skin. The detailed clinical history was obtained from the patient like age, sex, duration of complaint, past history, and drug history. The most important was the site of biopsy and the differential diagnosis obtained by the clinician.

Inclusion Criteria

Papular lesions of the skin.

Exclusion Criteria

Other lesions of skin

The biopsies as soon as obtained were fixed in 10% formalin and processed and were cut in to small 5 μ thickness and were stained with haematoxylin and eosin stain. Special stains were done where ever necessary.

Results

The lesions were diagnosed histopathologically and divided into 11 groups and subgroups.

This table depicts the histopathological diagnosis made with sex distribution and the percentage of each lesions in a particular group.

Histopathological diagnosis Male Female Total number of cases Percentage of lesions in each group.

Histopathological Diagnosis	Male	Female	Total Number of Cases	Percentage of Lesions in Each Group
Congenital Diseases				
Acrokeratosis verruciformis	2	1	3	
Urticaria pigmentosa.	1	-	1	3.3%
Non Infectious Erythematousus				
Lichen planus	11	6	17	
Lichen striatus	-	1	1	
Lichen simplex chronicus	1	1	2	
Psoriasis	3	1	4	
Parapsoriasis	1	-	1	
Pityriasis rubra pilaris	1	-	1	
Pityriasis rosea	1	-	1	
Papular erythema multiforme	-	1	1	23.3%
Inflammatory Diseases				
Acne vulgaris	3	1	4	
Acne rosacea	1	-	1	
Polymorphous light eruption	1	-	1	
Granuloma annulare	1	-	1	5.8%
Drug Eruptions				
Fixed drug eruption	2	-	2	1.66%
Infectious Diseases				
Verruca (Wart)	6	2	8	
Molluscum contagiosum	1	-	1	
Tuberculous verrucous cutis	2	2	4	
Tuberculids	1	-	1	
Lepromatous leprosy	6	1	7	
Erythema nodosum leprosum	3	1	4	
Secondary syphilis	7	2	9	28.3%
Degenerative Diseases				
Kyrles disease	-	1	1	0.8%
Metabolic Diseases				
Phrynoderma	1	1	2	
Lichen amyloidosis	1	-	1	
Tuberous xanthoma	1	-	1	5%

Tumors and Cysts of Epidermis and

Appendages				
Seborrheic keratosis	1	-	1	
Solar keratosis	2	-	2	
Inverted follicular keratosis	1	-	1	
Warty Dyskeratoma	1	-	1	
Nevus comedonicus	1	-	1	
Linear epidermal nevus	-	1	1	
Epidermal cysts	1	1	2	
Syringoma	2	-	2	10%
Tumors of Vascular System				
Pyogenic granuloma	1	-	1	0.83%
Tumors of Fibrous Tissue				
Adenoma sebaceum	-	1	1	
Keloid	-	1	1	
Non Specific Dermatitis	16	7	23	19,6%
Total			120	100%

Discussion

The aim of the present study is to correlate the clinical and histopathological findings and to note the variants of histopathological picture in skin disorders manifesting predominantly as papular lesions.

Jyothi Singh et al did clinopathological study of non neoplastic skin disorders of 60 cases and concluded that, maximum number of cases were due to infectious causes, followed by non infectious papulosquamous lesions consisting of 15 cases, They concluded that skin biopsy study is a worthwhile investigative procedure [3].

Similar study was done by Rakesh Mehar and team, the histopathological study of dermatological lesions, on 112 cases and found that 56% were males, and 44% females. And the commonest lesions were granulomatous skin lesions [4].

Grace D Costa also did similar studies and found positive correlation of histopathology and clinical diagnosis in 97.52 % of cases and negative in 2.48% of cases [6].

Bertram et al did study on papular lesions of skin and concluded that many papular urticarial skin lesions are also related to insect bite [7].

In our study we have got positive correlation between clinical diagnosis and histopathological diagnosis in many lesions. The clinical diagnosis matched with the histopathological diagnosis in 78.34% of cases. In 21.66 % of cases they both did not match.

Acrokeratosisverruciformis is a rare autosomal dominant disorder, clinically they were verrucous papular lesions over hands and feet. We

noticed 3 cases of these in a patient of 23, 25, and 38 years. In none of these clinical diagnosis was made accurately. Clinically they were diagnosed as lichen planus and amyloidosis.

Histologically the classical features of hyperkeratosis, papillomatosis and church spires were seen.

A single case of Urticaria pigmentosa was encountered, in a male child aged 8 years who complained of multiple maculopapular lesions on the back and chest since 3yrs with intense itching. Clinically it was diagnosed with the same. Histologically it showed streaks of eosinophils and mast cells around the blood vessels with spindle shaped cells. On toluidine blue stain the metachromatic granules of mast cells were seen.

In the present study 17 cases of lichen planus were encountered. 11 were male and 6 were female. Youngest was 7 year old one was 57 year aged. Common sites were flexor aspect of extremities, chest and back. All cases were diagnosed clinically.

Similar study was conducted by Abdel-Hamid et al. Out of 57 cases 43 were female, 14 cases were male and there also youngest was 7 years aged and older one was 72 years [3]. So there was female predominance here.

Histologically in their study, 10 cases showed classical picture of lichen planus, 6 cases with lichen planus hypertrophic picture, 3 cases showed features of lichen planopilaris and 1 case showed subepidermal vesicle. In all cases all the classical features were present except colloid bodies which were present in 3 cases.

Lichen striatus was seen in a 30 years aged woman as a linear row of pink papules on shin with history of

itching. On histology it showed intracellular edema and exocytosis. There was heavy infiltration with chronic inflammatory cells in perivascular area. The histological and clinical diagnosis correlated here.

We encountered 2 cases of lichen simplex chronicus. 1 patient was male aged 54 yrs with scaly papular lesion over leg and other one was in a 19 yr with scaly papule. They both presented with itching, and clinical diagnosis was made as psoriasis in both the cases. However in histopathology classical picture of chronicus was seen with prominent granular layer in epidermis with heavy chronic inflammatory cells in upper dermis unlike in psoriasis. There were no microabscesses and psoriasis was clearly ruled out in both these cases.

We encountered 4 cases of psoriasis with classical clinical and histopathological findings. Auspitz sign was positive.

In our study we noticed a single case of parapsoriasis in a 12 yr aged boy. He presented with maculopapular lesions bilaterally symmetrical over the extremities.

Pityriasis rubra pilaris was seen in 1 case in a 10 yr aged male presented with a follicular papules and itching. Histologically it showed hyperkeratosis, keratotic plugging, mild acanthosis and chronic inflammatory cells which were suggestive of the diagnosis [4].

Erythema multiforme was seen in a single case in a 20 yr aged female. The clinical picture with which patient presented was diagnostic and histopathology supported it. There was history of sulpha drug intake.

Coming to the inflammatory conditions 4 cases of acne rosacea were seen. The lesions were seen on face, back and chest. Histopathologically all cases showed disintegration of follicle and discharge of keratin material into dermis. Granulomatous reaction was seen in 2 cases at the site of follicle rupture.

Polymorphous light eruption was made in a 50 yr aged male who presented with multiple flat topped brown papules, on histology there was hyperkeratosis, parakeratosis and upper dermis showed streaks of chronic inflammatory cells around blood vessels.

A classical case of granuloma annulare was seen with papules and annular lesions. Histopathology showed area of incomplete degeneration of collagen surrounded by chronic inflammatory cells.

Fixed drug eruptions were seen in 2 cases, of 10 and 14 yrs males who presented with erythematous papules and plaques over upper and lower limbs and trunk. They presented with a history of intake of phenylbutazone. On histology epidermis showed

spongiosis and inflammatory cells. Blood vessels showed dilatation with prominent endothelial lining.

Infectious conditions are common and verruca or warts were noticed in 8 cases. All patients had warty papules on dorsum of hand, finger and feet. Out of this 6 were males and 2 females. Histology showed marked papillomatosis, hyperkeratosis, patchy parakeratosis and elongation of rete ridges. One case showed church spires.

Molluscum contagiosum was seen in a 18 yr aged male with a classical umbilicated papular lesions.

Tuberculosis verruca cutis were seen in 4 cases, 2 were males and 2 were females. On histology all cases showed classical features of epidermal changes and granuloma in dermis, none of the cases showed caseous necrosis.

Leprosy were seen in 7 cases. The age ranged from 28 to 68 yrs. All presented with papulonodular lesions over face and trunk and had sensory disturbance. In all the cases clinical diagnosis of leprosy was made except in one case where it was diagnosed as neurofibroma. On histology all of these showed Grenz zone with histiocytes with foamy cytoplasm, lymphocytes and spindle cells. A diagnosis of histiocytoid leprosy was made in one case [5].

Erythema nodosum leprosum were seen in 4 cases, 3 were males. All had painful erythematous papules and nodules. Histology showed neutrophilic vasculitis with edema of dermis and diffuse foamy histiocytic infiltration. On Fite-Faraco stain lepra bacilli were seen.

Secondary syphilis were seen in 9 cases. All of them had coppery red non-itchy papules. In 2 cases chancre was seen in genitalia. VDRL was positive. On histology the epidermis was thinned out. Plenty of plasma cells were seen with lymphocytes and histiocytes. Vasculitis was seen in 4 cases. Granuloma formation in 2 cases.

Degenerative skin diseases are rare. We encountered a single case of Kyrle's disease. It was in a 20 yr aged female who presented with a conical hyperpigmented papules with a central greyish plugging on extremities. No history of itching was present with no positive family history. Histopathology showed typical features of heavy keratosis and invagination of parakeratotic plug to epidermis. Basophilic debris were seen in most plugs. A differential diagnosis of perforating folliculitis was ruled out considering the absence of involvement of hair follicle and hair.

Metabolic diseases like phrynodema were seen in 2 cases. Clinical diagnosis was made in these cases

and histology showed horny plugs in the upper part of epidermis. The sebaceous lobules were reduced in size.

Lichen amyloidosis was seen in a male aged 25 yrs, with multiple dark brown pruritic papules. Clinical diagnosis of lichen planus was made. On histology epidermis showed thinning, the dermal papillae showed globular fissured masses of eosinophilic material. Special stains of amyloid like congo red was positive.

Tuberous xanthoma was seen in 35 yrs male with smooth yellowish papule. On histology flattened epidermis with collection of foamy histiocytes, lymphocytes and fibroblasts were diagnostic.

In tumors of epidermal appendages the most common one is seborrheic keratosis. we encountered 2 cases, and they both showed classical features in histopathology and correlated clinically.

Solar keratosis was seen in a male aged 50 yrs where single smooth globular growth was seen in forehead. Clinical diagnosis of fibroma was made. On histology it showed the down growth of epidermal squamous and basal cells as larger masses in to dermis .

Warty dyskeratoma occurred in a 5 yr aged child which is unusual, as it usually occurs in older age group. Although it was missed clinically it was diagnosed in histopathology by characteristic feature of cup shaped invagination connected to the surface by a channel. The channel was filled with keratinous material.

Nevus comedons was seen in 9yr boy with small dark brown papules on face. We could see the comedo which is represented by invagination of epidermis filled with keratin.

Epidermal cysts were seen in 2 cases, and clinical diagnosis was not made since they were not cystic, only on histology we could diagnose.

Syringoma were seen in 2 cases, clinically differential diagnosis was given and histopathological features were suggestive. Contained numerous small ducts lined by two rows of epithelial cells, the lumen contained amorphous debris.

Pyogenic granuloma seen in a 65 yr male with a papular growth on forehead, pedunculated and smooth.

Adenoma sebaceum was seen in a 8 yr girl with multiple discrete smooth yellowish papules. On histopathology there was dermal fibrosis, perifollicular proliferation of collagen leading to compression of hair follicles.

Keloids was seen in a 50 yr female, a known case of

leprosy, clinically histioid leprosy was made but in histopathology epidermis was unremarkable and dermis showed increased collagen.

Non specific dermatitis was given in 23 cases, clinical diagnosis was made as psoriasis in 5 cases, syphilis in 5 cases and scabies in remaining cases, but the histopathological features were not matching in to any of the diseases, and Showed some non specific changes.

So in summary the ratio between male and female in our study is 2.45:1. Males were more affected than females. Study done by Piyush Vaghela also had more incidence in males in non neoplastic skin lesions [6].

The infectious disease constituted the majority of cases and degenerative disease and tumors of vascular tissue was the least. This finding matched with study done by Betram et al [7].

Lichen planus constituted to maximum number of cases of 17 cases followed by leprosy and syphilis.

The clinical diagnosis was not thought of in rare cases like acrokeratosis verruciformis, inverted follicular keratosis, and warty dyskeratoma.

A clinical diagnostic dilemma was settled with differential diagnosis in lichen simplex chronicus and parapsoriasis.

Grannuloma annulare was shown to be associated with diabetes in many studies and it was proven in our study also.

In 23 cases non specific dermatitis was given eventhough specific clinical diagnosis was made.

A study done by Chaudhry Raju and team on papulosquamous lesions of skin consisting of 179 cases concluded that certain tissue reaction pattern are seen in papulosquamous lesions of skin and it leads to newer approaches in diagnosis. They found lichenoid and psoriasiform reaction pattern common in their study [8].

Conclusion

Our study concludes that histopathological diagnosis is goldstandard investigative procedure in diagnosis of papular lesions of skin. Although is one of the valuable means of diagnosis in dermatology, it has been shown to have its own limitations as often no differential diagnosis is made. In our study we have got a positive correlation between clinical diagnosis and histopathological diagnosis in many lesions. The clinical diagnosis matched with the histopathological diagnosis in 78.34% of cases. In 21.66 % of cases they

both did not match. In many instances the chief value of histopathology lies in corroborating the clinical diagnosis or in ruling out the possible diseases that are being considered on the basis of clinical appearances. In spite of that histopathology has a major investigative role in papular lesions skin biopsies.

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