

Histological Study of Nodular Outgrowths of the skin in Patients from a tertiary care Hospital, Hyderabad

Tazeen Kouser¹, Mahjabeen Salma^{2,*}, Mohammed Abdul Nasar³

^{1,3}Assistant Professor, Shadan Institute of Medical Sciences, Ranga Reddy Dist., ²Professor, Dept. of Pathology, VRK Women's Medical College, Ranga Reddy Dist.

***Corresponding Author:**

Email: drsalma786@yahoo.com

Abstract

Background: Pathological studies have documented the extent of spread of various skin lesions and have made significant contribution to the understanding of etiology and pathogenesis; Pathologic studies have played an important role in the diagnosis of various skin lesions.

Objective: To study of Nodular Outgrowths of the skin in Patients from a tertiary care Hospital, Hyderabad

Methods: Histopathological study of benign nodular lesions of the skin, studied during the period of October 2010-September 2012 at Department of Pathology, Owaisi Hospital and Research Centre and Princess Esra Hospital. Skin biopsies were received from the Outpatient department of Dermatology. For this study, Clinico-pathologic details were recorded. During this period a total of 67 cases of benign nodular skin disease were studied. The patients were selected, irrespective of age, sex, socioeconomic status and residence. Cases were taken up for study after appropriate consent. All the skin biopsies either Punch or Incisional, were stained with Hematoxylin & Eosin, and examined. Special stains like AFB, PAS etc. were done in required cases.

Results: Maximum number of cases was seen in the age group of 31-50 years. Male to female ratio was 1.16:1 showed male preponderance. Out of 23, syringoma were found in 9 (39.13%), trichoepithelioma in (26.08%), syringocystadenoma papilliferum in 4 (17.39%), sebaceous adenoma in 3 (13.04%), and pilar cyst in 1 (4.34%). Females (65.21%) outnumbered males (34.78%) in our study population.

Conclusion: The present study has emphasized the role of histopathologic examination in cutaneous disorders and disease.

Key words: Nodular Outgrowths, Histopathological study, Cutaneous disorders

Access this article online	
Quick Response Code:	Website: www.innovativepublication.com
	DOI: 10.5958/2394-6792.2016.00042.9

Introduction

Developing countries like India have more than 1 billion population, out of which 60% of the population lives in slums and villages. In addition, problems such as population explosion, urban migration, overcrowding, illiteracy; poverty, starvation and deforestation have resulted in conditions deleterious to human health. In fact the ecological factors are the root of geographic distribution of diseases. It is the interaction of the skin with external influence, such as climate, physical, chemical, biological agents, and socio-cultural and economic factors in relation to skin diseases.¹

India, being a vast country with diverse population groups has different customs, presents a variety of dermatoses. Females in India traditionally apply cosmetics like – Henna, Kajal, and Bindi. Contact dermatitis has been ascribed to all these agents. Walking bare foot or in slippers, which is common in

India, can lead to many dermatoses by predisposing to trauma e.g. Mycetoma, Sporotrichosis, Cutaneous TB, and Dracunculosis. Even today majority of the population live in villages, where the early morning rituals of defecation and urination are still done in open fields. This increases the number of flies and other insects, causing an abundance of Pyodermas, Zoonotic disease and Soil-transmitted Helminthic diseases.

The pattern of skin disease in most parts of India is a consequence of poverty, malnutrition, overcrowding, poor hygiene, illiteracy and social backwardness. In India more than 50% of general hospital skin out-patients attendance consists of infections which are acute and usually recurrent like Scabies, Pyodermas, Superficial fungal infections, Parasitic and viral infections, Eczemas, Acne, Vitiligo, Pigmentary changes, Psoriasis, Lichen planus, Leprosy etc.

Pathological studies have documented the extent of spread of various skin lesions and have made significant contribution to the understanding of etiology and pathogenesis; Pathologic studies have played an important role in the diagnosis of various skin lesions.²

Therefore the present study is designed with the aim of studying the histological features of various skin diseases, so the clinicians can manage the case efficiently.

Materials and Methods

Histopathological study of benign nodular lesions of the skin, studied during the period of October 2010-September 2012 at Department of Pathology, Owaisi Hospital and Research Centre and Princess Esra Hospital. Skin biopsies were received from the Outpatient department of Dermatology. For this study, Clinico-pathologic details were recorded. During this period a total of 67 cases of benign nodular skin disease were studied. The patients were selected, irrespective of age, sex, socioeconomic status and residence. Cases were taken up for study after appropriate consent. All the skin biopsies either Punch or Incisional, were stained with Hematoxylin & Eosin, and examined. Special stains like AFB, PAS etc. were done in required cases.

Skin Biopsy Technique

A Punch/Incisional procedure was followed after testing the patient for Xylocaine sensitivity. Skin lesions of 4 mm for Punch or Incisional biopsy were sent for histopathological study. Fully developed lesions were taken for biopsy, because of their being more informative. Adequate biopsy included epidermis, dermis and subcutaneous fat. Specimen was fixed in 10% formalin, after fixation for 8-24 hours biopsy specimens were processed in an automatic processor. The processing included a succession of increasing concentration of isopropyl alcohol for dehydration then through Xylene for clearing and finally through two changes of hot melted paraffin for impregnation. The specimens were edge embedded with epidermis upwards in the still liquid paraffin which was allowed to harden. The block was then cut on a rotary microtome in to sections of about 3 to 5 microns thickness. The sections were stained with Hematoxylin & Eosin and examined.

Hematoxylin and eosin staining method

Dewax sections/Hydrate the sections through graded alcohols to water. Stain with Harris hematoxylin for 3-5 minutes. Wash well in running tap water for 5 minutes or less. Differentiate in 1% acid alcohol for 5 to 10 seconds. Wash well in running tap water until sections are again blue (10-15 minutes). Blue by placing in Scott's tap water substitute or 1% aqueous lithium carbonate until the sections appear blue- about 30 sec for the lithium, one minute for Scott's tap water substitute. Rinse well in water. Stain in acidified aqueous eosin for 2 min. Place in 70% and then 95% alcohol and then absolute alcohol 2 changes each. Clear in Xylene- 2 changes. Mount with cover slips using DPX mountant.

Observation for staining: Nuclei-Blue, Cytoplasm-Varying shades of pink, Muscle fibers-deep pink/red, Red blood cells-red, Fibrin-deep pink.

Ziehl-Neelsen method for acid-fast bacteria

De-parafinize and hydrate to distilled water, Corbol Fuschin solution for 30 minutes, Wash well in running water, Decolorize with acid alcohol solution or H₂SO₄ until sections are pale pink, Wash thoroughly in running water for 8 minutes, Counter stain by dipping 1 slide at a time in working methylene blue solution. Section should be pale blue., Wash with tap water then rinse in distilled water, Dehydrate in 95% absolute alcohol and clear in xylene two changes each, Mount with cover slips using per mount or histoclad.

Observation for staining: Tubercle bacilli-bright red, Caseous material-very pale grayish blue, Red blood cells- reddish tint

Results

A total of 80 biopsies of benign nodular skin lesions were received by the Department of pathology, Deccan College of Medical Sciences, from October 2010 – September 2012, these cases were studied for histo-pathological correlation.

In the present study clinically diagnosed 80 cases of skin disorders, out of which 67 cases were histo-pathologically correlated.

Acrochordon (7 cases) was the commonest; followed by trichoepithelioma (6 cases), and syringoma (6 cases), pilar cyst (5 cases), rest all of the diseases have not exceeded more than 5 cases.

Age Distribution

Age of the patients ranged from 1 to 70 years (mean age being 35). Maximum number of cases was seen in the age group of 31-50 years, 33 cases (49.5%). Minimum number of cases was seen in the age group of 61-70 years, 3 cases (4.47%). The oldest was 70 years old; a case of kercioa-canthoma and the youngest was 5 years old, a case of prurigo nodularis.

Sex Distribution

Out of the total 67 patients studied, were male 36 (53.73%) and were 31 (46.27%) female patients. Male to female ratio was 1.16:1 showed male preponderance.

Table 1: Age wise Distribution of cases

Diseases	1-10	11-20	21-30	31-40	41-50	51-60	61-70
Prurigo nodularis	1	1	1	1	----	----	----
Seborrheic keratosis	----	----	----	1	3	----	----
Sebaceous adenoma	----	----	----	----	----	2	----
Epidermal cyst	----	----	3	1	----	----	----
Steatocystoma Multiplex	----	1	1	----	----	----	----
Skin tag	---	---	3	1	3	---	---
Pilar cyst	---	---	3	2	---	---	---
Keloid	---	1	2	---	---	---	---
Dermatofibroma	---	---	1	3	---	---	---
Trichoepithelioma	---	---	---	3	2	1	---
Trichoblastoma	---	---	---	---	2	---	---
Cylindroma	---	---	1	2	---	---	---
Pilomatrixoma	1	3	---	---	---	---	---
Syringoma	---	---	1	1	4	---	---
Hidradenoma papilliferum	---	---	---	2	---	---	---
Juvenile xanthogranuloma	1	1	---	---	---	---	---
Keratoacanthoma	---	---	---	---	---	1	2
Pyogenic granuloma	---	4	---	---	---	---	---
Total	3	11	16	17	14	4	2

Table 2: Sex wise distribution of cases

Sex	Number	Percent
Male	36	53.73
Female	31	46.27
Total	67	100.00

Table 3: Site wise distribution of cases

Site	Prurigo nodularis	Seborrheic Keratosis	Sebaceous adenoma	Epidermal cyst	Trichilemmal cyst	Skin tag	Keloid	Steatocystoma Multiplex
Scalp	---	---	2	1	5	---	---	---
Face	---	2	1	1	---	---	2	---
Neck	---	---	1	---	---	3	---	1
Upper extremities	---	---	---	---	---	2	---	1
Plams	---	---	---	---	---	---	---	---
Chest	---	---	---	---	---	---	1	---
Trunk	1	2	---	2	---	2	---	---
Lower extremities	3	---	---	---	---	---	---	---
Genitalia	---	---	---	---	---	---	---	---
Soles	---	---	---	---	---	---	---	---
Generalised	---	---	---	---	---	---	---	---
Total	4	4	4	4	5	7	3	2

Discussion

Among twenty eight thousand four hundred sixty six patients attending OPD, 30 suspected cases of ATs underwent histopathological examination. Histopathology was confirmatory in only 23 (76.67%) cases. Out of 23, syringoma were found in 9 (39.13%), trichoepithelioma in (26.08%), syringocystadenoma papilliferum in 4 (17.39%), sebaceous adenoma in 3 (13.04%), and pilar cyst in 1 (4.34%). Females

(65.21%) outnumbered males (34.78%) in our study population.

In the present study syringoma was seen in the age range of 20-50 years. A total of 6 cases were studied, three were males and three were female. Distributions of lesions in syringoma were seen predominantly in lower eyelid and lower extremities.

In the present study trichoepithelioma comprised of 6 cases with a female predominance and were in the age

range of 40-60 years. Distributions of lesions in trichoepithelioma were seen predominantly in nasolabial fold, nose and forehead.

Patrice SJ et al³ observed that Forty-two percent of the lesions occurred in the first five years of life; only 12% appeared in infants less than 1 year old. The male: female ratio was 3:2. Most patients (74.2%) had no history of trauma or predisposing dermatologic condition. The mean lesional size was 6.5 mm and the mean duration at diagnosis was 3.8 months. The granulomas were most commonly located in the head and neck area (62.4%), followed in order of decreasing frequency by trunk (19.7%), upper extremity (12.9%), and lower extremity (5.0%). The preponderance (88.2%) occurred on the skin; the remaining ones involved the mucous membranes of the oral cavity and conjunctivae.

Mills SE et al⁴ noted that of 639 vascular lesions of the oral cavity and upper respiratory tract yielded 73 cases with the characteristic features of LCH. The lip was the most common site (38%), followed by the nose (29%), oral mucosa (18%), and tongue (15%). LCH usually presents as a spontaneous, painless, bleeding mass. There is a predilection for males less than 18 years old, females in the reproductive years, and an equal sex distribution beyond 40 years of age. No examples of LCH were found in 68 vascular lesions from the larynx or trachea.

Zelger B et al⁵ compared thirteen cases of juvenile xanthogranuloma (JXG) and 13 cases of adult-type xanthogranuloma (AXG) at the light and immunohistochemical levels. Histologically, four main cell types (vacuolated, xanthomatized, spindle-shaped, and "oncocyctic") were seen in variable proportions (from monomorphous to mixed variants) with different types of giant cells (nonspecific, foreign body, Touton, and "ground-glass"). Giant cells were more prominent in AXG than in JXG; oncocyctic cells (characterized by an eosinophilic, slightly granular cytoplasm similar to thyroid oncocyctic cells) and mostly periodic acid-Schiff (PAS) negative giant cells with a ground-glass appearance (6 of 26) were not observed in classic JXG (i.e., occurring in children < 2 years old).

Virgili A et al⁶ found that the clinical aspects of hidradenoma papilliferum are confusing. The tumor is uncommon, so physicians do not gain enough experience to recognize it. Histology is diagnostic and simple excision curative.

Solanki P et al⁷ reported that Pilomatrixoma are neoplasms of the hair cortical cells. They are most common during the first two decades of life and, usually, involve the head, neck, and upper extremities. These tumors may be encountered during aspiration biopsy of subcutaneous masses, and are, occasionally, confused with other neoplasms, particularly squamous cell carcinomas and epidermal inclusion cysts. The cytologic features of three such neoplasms are presented, and the characteristics that differentiate them

from other benign and malignant lesions of the skin are discussed. The presence of two cell populations, the anucleated shadow cells and the basaloid cells, which lack nuclear features of malignancy, is fairly specific for pilomatrixoma.

Gilks CB et al⁸ studied three cases of trichoblastic fibroma, a rare benign skin tumor of hair follicle origin, are reported. On clinical examination, solitary, mobile, subcutaneous nodules with normal overlying skin were found on the vulva (one case) and scalp (two cases) in women aged 57, 46, and 19 years, respectively. On microscopic examination, the tumors were composed of complex nests and strands of basaloid, focally keratinized epithelium arranged in a moderately cellular fibroblastic stroma. No connection with the overlying epithelium or adjacent adnexal structures was observed. Immunohistochemical staining supported a trichogenic origin for these tumors. Trichoblastic fibromas are histologically distinctive lesions that should be distinguished from other tumors of follicular origin and from keratotic basal cell carcinoma.

Tatnall FM et al⁹ studied very large solitary trichoepitheliomas which arose in the perianal region in three patients are described. Although these tumours showed a striking histological similarity to classical multiple or solitary trichoepitheliomas of the face, they differed in their massive size, unusual location and by their involvement of deeper tissue. We suggest that giant solitary trichoepitheliomas is a distinct variant of trichoepithelioma that may have a predilection for the perianal region. At this site this rare tumour must be distinguished from basal cell carcinoma of the perineum and from malignant basaloid (cloacogenic) carcinoma of the anal canal.

Conclusion

The present study has emphasized the role of histopathologic examination in cutaneous disorders and disease. It serves as very valuable diagnostic tool to understand and explain the pathology of various skin lesions. With appropriate clinical diagnosis or differential diagnosis provided by dermatologists or clinicians, the concordance levels can definitely be improved. Addition of Immuno fluorescence techniques in relevant cases will further enhance the diagnostic accuracy.

Reference

1. Chandrasekhar HR. Basic Dermatopathology. In: Valia RG, Valia AR editors IADVL text book of and Atlas of Dermatology. Bombay: Bhalani Publishing House; 1994. P. 34-51.
2. Murphy GF. Histology of the skin. In: Elder DE, Elenitsas R, Johnson Jr. BL, Murphy GF, editors. Lever's histopathology of skin. 9th ed. Philadelphia: Lippincott Williams and Wilkins; 2005. P. 9-58
3. Patrice SJ, Wiss K, Mulliken JB. Pyogenic granuloma: a clinic pathologic study of 178 cases. *Pediatr Dermatol* 1994;8(4):167-76.

4. Mills SE, Cooper PH, Fechner RE. Lobular capillary hemangioma the underlined lesion of pyogenic granuloma. A study of 73 cases from the oral and nasal mucous membrane. *Am J Surg Pathol* 1980;4(5):470-9.
5. Zelger B, Cerio R, Orchard G, Wilson Jones E. Juvenile and adult xanthogranuloma. A histological and immunohistological comparison. *Am J Surg Pathol* 1994;18(2):126-35.
6. Virgili A, Marzola A, Corazza M. Vulvar hidradenoma pappilliferum. A review of 10.5 years experience. *J Reprod Med* 2000;45(8):616-8.
7. Solanki P, Ramzy I, Durr N, Henkes D. Pilomatrixoma, cytologic features with differential diagnostic consideration. *Arch Pathol Lab Med* 1987;111(3):294-7.
8. Gilks CB, Clement PB, Wood WS. Trichoblastic fibroma. A clinicopathologic study of three cases. *Am J Dermatopathol* 1989;11(5):397-402.
9. Tatnall FM, Jones EW. Giant solitary tricoepitheliomas located in the perianal area: a report of 3 cases. *Br J Dermatol* 1986;115(1):91-99.