

Research Article



INTERNATIONAL RESEARCH JOURNAL OF PHARMACY

www.irjponline.com

ISSN 2230-8407 [LINKING]

CLINICAL AND HISTOLOGICAL DIAGNOSIS IN INDIVIDUALS WITH SCALP LESIONS

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How to cite: Chandak SH, Shirsat AD. Clinical and histological diagnosis in individuals with scalp lesions. International Research journal of Pharmacy.2019;10:3):121-125.

DOI: 10.7897/2230-8407.100389

ABSTRACT

Background: With five layers of soft tissue surrounding the skull, the human scalp is distinct from the rest of the skin. Due to decreased visibility, which, when combined with alopecia, undermines confidence, scalp lesions are typically ignored at first. Psoriasis or seborrheic dermatitis are typically the cause of these lesions. There is a dearth of literature data on this topic.

Aim: Using scalp biopsy, the current study sought to determine the relationship between histopathological and clinical diagnosis in patients with scalp lesions at an Indian medical facility.

Methods: 120 participants with scalp lesions who had scalp biopsies were evaluated for the study. Subjects with non-scarring alopecia and invisible scalp lesions were not evaluated in this study. Results from a statistical analysis of the data were obtained.

Results: 56.66% (n=68) of the participants were men, with the majority being between the ages of 31 and 40 and then older than 60. 97% of lesions were cancerous, while 57% of lesions were found in the parietal region. Ninety-seven percent (n=110) and five percent (n=6) of the lesions were benign. Clinical diagnosis revealed sebaceous cysts in 5% of cases, warts/trichilemmal cysts in 5% of cases, and epidermal cysts and lipomas in 43% and 10% of cases, respectively. Trichilemmal cysts were found in 17% of cases, whereas epidermal cysts, lipomas, and epidermal inclusion cysts were found in 12%, 10%, and 8% of cases, respectively, according to histopathological diagnosis.

Conclusion: that histopathological correlation is a critical component of an effective diagnosis because the majority of scalp lesions cannot be clinically separated.

Keywords: squamous cell carcinoma, trichilemmal cyst, scalp lesions, epidermal cyst, and histological connection.

INTRODUCTION

Humans have a special type of skin called the scalp, which covers the cranium with five layers of soft tissues. The protection of the brain is a critical function of these five layers. Due to its susceptibility to tumors, parasite infections, allergic responses, abscesses, inflammation, infection, and trauma, the scalp surface's moist, warm, and dark environment renders it clinically vulnerable to a wide range of pathologies.¹ Additionally, the scalp's epidermis is constantly brushed and comes into contact with styling tools, which can further harm the scalp due to friction and possibly keep microbes out.²

A characteristic of the human scalp makes it vulnerable to superficial mycotic disorders like tinea capitis, seborrheic dermatitis, and dandruff, as well as inflammatory conditions like psoriasis and parasitic infestations like pediculosis capitis. There is a notable overlap in the clinical signs of several scalp diseases.

Inflammatory signals such as purulence, erythema, alopecia, pruritus, and scaling in hyperkeratosis are common indications of scalp problems.³

In dermatological clinics, pruritus and scaling are frequent complaints. Folliculitis decalvans, folliculitis keloidalis nuchae, traction alopecia, and tinea capitis are the main scalp lesions that are being documented. Psoriasis and seborrheic dermatitis are two widespread skin conditions that most commonly affect the scalp. Atopic dermatitis, pityriasis rubra pilaris, secondary syphilis, and lichen planus are among the disorders that frequently affect the scalp.⁴

Approximately 2% of all tumors are found and observed in the scalp area, where 80% of lesions are benign and 20% are malignant. Malignant lesions make up approximately 1% to 2% of all scalp lesions and account for 13% of all malignant cutaneous neoplasms. There is a dearth of information in the literature on the histology of scalp lesions.⁵ The current study used scalp biopsy to investigate the relationship between histopathological and clinical diagnosis in patients with scalp lesions at an Indian healthcare facility.

MATERIALS AND METHODS

The current study used scalp biopsy to investigate the relationship between histopathological and clinical diagnosis in patients with scalp lesions at Indian healthcare facilities.

After receiving approval from the relevant institutional ethical committee, the study was conducted at... from... to. The study participants came from the Institute's Department of Dermatology. Before being included in the study, all individuals gave their written and verbal informed consent.

120 participants with scalp lesions who were over 10 years old and of both sexes were evaluated for the study. Participants who had scalp lesions and were willing to have a scalp biopsy were eligible to participate in the study. Participants who refused to have a scalp biopsy, those who had no apparent scalp lesions, those with non-scarring alopecia, those with keloidal tendencies, those who were bleeding, pregnant women, and children under the age of ten were all excluded from the study.

Every participant received comprehensive information on the study design in a language they could understand. Following the study subjects' final inclusion, a pre-made structured proforma was used to collect comprehensive data for each subject, including the required investigations, clinical findings, clinical history, occupation, gender, age, and name. Scalp lesions were thoroughly evaluated for each patient in order to determine any clinicopathological association. In the minor operating room of the outpatient department of dermatology, a scalp biopsy was carried out using the ho-Vert-Technique under local anesthetic in the form of 2% lignocaine with adrenaline, integrating both vertical and horizontal sections under stringent aseptic and sterile circumstances.

Following a physical examination of each subject's scalp, samples were taken for scalp biopsies and forwarded to the Department of Dermatology for additional evaluation. The obtained tissue was regularly preserved in 10% formalin before being embedded in paraffin. The obtained tissue had a thickness of 4-5 microns and was stained using hematoxylin and eosin.

Light microscopy was used to conduct a thorough section investigation. For a conclusive diagnosis, one slide from each block was regularly stained with Eosin and Hematoxylin stain. Scalp lesions are often classified as either neoplastic or non-neoplastic, with the former being further subdivided into benign and malignant lesions. The study's variables included the subjects' age, gender, gross features, and histological characteristics.

SPSS (Statistical Package for the Social Sciences) software version 16.0 (SPSS Inc., Chicago, USA) was used to statistically analyze the collected data in order to evaluate descriptive measures and the Chi-square test. The findings were presented as frequency, percentages, mean, and standard deviation. A p-value of less than 0.01 was regarded as highly significant in terms of statistics.

RESULTS

The current study used scalp biopsy to investigate the relationship between histopathological and clinical diagnosis in patients with scalp lesions at an Indian healthcare facility. 120 participants with scalp lesions who were over 10 years old and of both sexes were evaluated for the study.

Most of the study participants were between the ages of 31 and 40 and over 60 (21.66%; n = 26), followed by 16.66% (n = 20) from 21 to 30 and 41 to 50 years, 13.3% (n = 16) from 11 to 20 years, and at least 10% (n = 12) from 51 to 60 years. In the current study, there were 43.33% (n=52) females and 56.66% (n=68) males. According to Table 1, 15% (n=18), 20% (n=24), 56.66% (n=67), and 21.66% (n=26) of the study participants, respectively, had involvement of the occipital, temporal, parietal, and frontal sites. According to the study's findings, 12 participants had lipomas for histological diagnosis, and 83.3% of the cases (n=10) had a link between histology and clinical findings.

Syringocystadenoma papiliferum, poorly differentiated SCC, BCC (basal cell cancer), metastases from PTC, hypohidrotic ectodermal dysplasia, and epidermal cysts all showed a 100% clinical and histopathological connection. Neurofibroma, seborrheic keratosis, pseudopelade of Brocq, dermoid cyst, capillary hemangioma, trichilemmal cyst, AV malformation, and compound nevus, sebaceous cyst, epidermal inclusion cyst, proliferating trichilemmal cyst, nevus sebaceous infected sebaceous cyst, infected epidermal cyst, infected dermoid cyst, and neurofibroma showed no correlation or 0%. There was a 38.33% overall correlation (Table 2).

Based on age range and lesion type, the distribution of scalp lesions was as follows: 12.1% (n=14) and 50% (n=2) neoplastic and non-neoplastic lesions in ages 11–20, 15.5% (n=18) neoplastic and 50% (n=2) non-neoplastic lesions in ages 21–30, 22.4% (n=26) neoplastic lesions in ages 31–40, 17.2% (n=20) neoplastic lesions in ages 41–50, 10.3% (n=12) neoplastic lesions in ages 51.60, and 22.4% (n=26) neoplastic lesions. The investigation included 4 non-neoplastic and 116 malignant lesions in total (Table 3).

According to the distribution of scalp lesions by gender and lesion type, the study's female participants had 43.1% (n=50) neoplastic and 50% (n=2) non-neoplastic lesions, whereas the study's female participants had 56.9% (n=66) neoplastic and 50% (n=2) non-neoplastic lesions. In all, 68 lesions were found in males and 52 lesions in females (Table 4).

DISCUSSION

In this study, 120 participants with scalp lesions who were over 10 years old and of both sexes were evaluated. Most of the study participants were between the ages of 31 and 40 and over 60 (21.66%; n = 26), followed by 16.66% (n = 20) from 21 to 30 and 41 to 50 years, 13.3% (n = 16) from 11 to 20 years, and at least 10% (n = 12) from 51 to 60 years. In the current study, there were 43.33% (n=52) females and 56.66% (n=68) males. In 15% (n=18), 20% (n=24), 56.66% (n=67), and 21.66% (n=26) of the study participants, the occipital, temporal, parietal, and frontal sites were implicated, respectively. These findings were equivalent to those of studies conducted by Al-Adnani M et al. (2006) and M Ramani KWH et al. (2013), in which the authors evaluated participants using demographic information similar to that of the current study.

Twelve participants had lipomas for histological diagnosis, and 83.3% of cases (n=10) had a connection between histology and clinical findings. Syringocystadenoma papiliferum, poorly differentiated SCC, BCC (basal cell cancer), metastases from PTC, hypohidrotic ectodermal dysplasia, and epidermal cysts all showed a 100% clinical and histopathological connection.

Neurofibroma, seborrheic keratosis, pseudopelade of Brocq, dermoid cyst, capillary hemangioma, trichilemmal cyst, AV malformation, and compound nevus, sebaceous cyst, epidermal inclusion cyst, proliferating trichilemmal cyst, nevus sebaceous infected sebaceous cyst, infected epidermal cyst, infected dermoid cyst, and neurofibroma showed no correlation or 0%. A 38.33% overall correlation was observed. These findings were in line with those of Manchanda Y et al. (2012) and Leena et al. (2014), who observed a comparable association between the clinical and histological diagnosis of scalp lesions in their respective investigations.

Based on age range and lesion type, the distribution of scalp lesions was as follows: 12.1% (n=14) and 50% (n=2) were neoplastic and 50% (n=2) non-neoplastic lesions in 11–20 years, 15.5% (n=18) were neoplastic and 50% (n=2) non-neoplastic lesions in 21–30 years, 22.4% (n=26) were neoplastic lesions in 31–40 years, 17.2% (n=20) were neoplastic lesions in 41–50 years, 10.3% (n=12) were neoplastic lesions in 51.60 years, and 22.4% (n=26) were neoplastic in >60 years. The study included four non-neoplastic and 116 malignant lesions.

These results were consistent with those of Situm M et al. (2010) and Hegde VK et al. (2014), whose research indicated a comparable distribution of scalp lesions by age range and lesion type to the current study's findings. Based on the distribution of scalp lesions by gender and lesion type, the study's female participants had 43.1% (n=50) neoplastic and 50% (n=2) non-neoplastic lesions, whereas the study's female participants had 56.9% (n=66) neoplastic and 50% (n=2) non-neoplastic lesions. In all, 68 lesions were found in males and 52 lesions in females.

These findings aligned with those of Sellheyer K et al. (2012) in 2005 and Kirsner RS et al. (2001), whose authors observed a comparable distribution of scalp lesions by gender and lesion type to the current study.

CONCLUSIONS

The present study, within its limitations, concludes that the majority of scalp lesions are not distinguished clinically making histopathological correlation a vital aspect of accurate diagnosis. Future longitudinal studies exploring the issue are needed to reach a definitive conclusion.

REFERENCES

1. Anrade P et al. Epidemiology of basal cell carcinomas and squamous cell carcinomas in a Department of Dermatology: a 5-year review. *A Bras Dermatol* 2012;87:212–9.
2. Elewski BE. Clinical diagnosis of common scalp disorders. *J Investig Dermatol Symp Proc.* 2005;10:190-3.
3. Al-khateeb TH, Al-Masri NM, Al-Zoubi F . Cutaneous cysts of the head and neck. *J Oral Maxillofac Surg.* 2009;67:52 – 7.
4. Adu EJ. Tumors of the scalp: a review of ten cases. *J US-China Med Sci.* 2013;10:57-62.
5. Spitz DJ, Reddy V, Selvaggi SM, Kluskens L, Green L, Gattuso P. Fine-needle aspiration of scalp lesions. *Diagn Cytopathol.* 2000;23:35-8.
6. Al-Adnani M, Williams S, Rampling D, Ashworth M, Malone M, Sebire NJ. Histopathological reporting of pediatric cutaneous vascular anomalies about proposed multidisciplinary classification system. *J Clin Pathol.* 2006;59:1278-82.
7. M Ramani KWH, K Geetha, K Ramesh Reddy, P Sreenivasa Reddy, Ramsha Tahoora A, Puja Deshmukh. Histopathologist's outlook of vascular lesions in children - a 2-year study. *Journal of Evolution of Medical and Dental Sciences.* 2013;2:6415-21.
8. Manchanda Y KE, Al-Mutairi N. A clinical-pathological-epidemiological study of Melanoma malignant skin tumors of the scalp. *The Gulf Journal of Dermatology and Venereology.* 2012;19:22-7.
9. Leena et al. A histopathological review of scalp tumors: Hospital-based study. *International Journal of Recent Trends in Science and Technology.* 2014;12:256- 8.
10. Šitum M, Bolanča Ž, Kolić M, Jerković Gulin S, Gulin D. Ten-Year Study on the Correlation of Clinical and Patohistological Diagnosis of Dysplastic Nevi. *Collegium antropologicum.* 2011;35:107–9.
11. Hegde VK, Khadilkar UN. A clinicopathological study of interface dermatitis. *Indian Journal of Pathology and Microbiology.* 2014;57:386.
12. Sellheyer K, Bergfeld WF. A retrospective biopsy study of the clinical diagnostic accuracy of common skin diseases by different specialties compared with dermatology. *Journal of the American Academy of Dermatology.* 2005;52:823–30.
13. Kirsner RS, Federman DG. Interpretation of cutaneous biopsy specimens: choice of pathologist by primary care practitioners. *Southern Medical Journal.* 2001;94:461–3.

S. No	Characteristics	Number (n=120)	Percentage (%)
1.	Age range (years)		
a)	11-20	16	13.3
b)	21-30	20	16.7
c)	31-40	26	21.66
d)	41-50	20	16.66
e)	51-60	12	10
f)	>60	26	21.66
2.	Gender		
a)	Males	68	56.66
b)	Females	52	43.33
3.	Laterality		
a)	Right	52	43.3

b)	Left	60	50
c)	Bilateral	8	6.66
4.	Site		
a)	Occipital	18	15
b)	Temporal	24	20
c)	Parietal	67	56.66
d)	Frontal	26	21.66

Table 1: Demographic and disease data in study participants

Histopathological diagnosis	Total (n=120)	Clinical and histopathology correlation	Percentage (%)
Lipoma	12	10	83.3
Syringocystadenoma papiliferum	2	2	100
Poorly differentiated SCC	2	2	100
BCC	2	2	100
Metastasis from PTC	2	2	100
Hypohidrotic ectodermal dysplasia	2	2	100
Epidermal cyst	14	14	100
Compound nevus	4	0	0
Sebaceous cyst	8	0	0
Epidermal inclusion cyst	10	0	0
Dermoid cyst	10	2	20
Capillary hemangioma	8	2	25
Trichilemmal cyst	20	6	30
A-V malformation	4	2	50
Proliferating trichilemmal cyst	2	0	0
Nevus sebaceous	2	0	0
Infected sebaceous cyst	2	0	0
Infected epidermal inclusion cyst	2	0	0
Infected epidermal cyst	2	0	0
Infected dermoid cyst	2	0	0
neurofibroma	4	0	0
Seborrheic keratosis	2	0	0
Pseudopelade of Brocq	2	0	0
Total	120	46	38.33

Table 2: Correlation of clinical histopathological diagnosis in study subjects with scalp lesions

S. No	Age range	Neoplastic		Non-neoplastic		Total
		n	%	n	%	
1.	11-20	14	12.1	2	50	16
2.	21-30	18	15.5	2	50	20
3.	31-40	26	22.4	0	0	26
4.	41-50	20	17.2	0	0	20
5.	51-60	12	10.3	0	0	12

6.	>60	26	22.4	0	0	26
7.	Total	116	100	4	100	120

Table 3: Distribution of scalp lesions based on age range and lesion type

S. No	Gender	Neoplastic		Non-neoplastic		Total
		n	%	n	%	
1.	Female	50	43.1	2	50	52
2.	Male	66	56.9	2	50	68
3.	Total	116	100	4	100	120

Table 3: Distribution of scalp lesions based on gender and lesion type