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To study histopathological connection of facial lesions: A retrospective study

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Abstract

Introduction and Background: Facial lesions include a wide variety of dermatological diseases, from benign tumours to malignant neoplasms. This study seeks to examine the clinical manifestation, location, and histological association of face lesions in patients attending a tertiary healthcare institution. The aim is to evaluate the diagnostic agreement between clinical and histological results and to analyse the prevalence of various types of face abnormalities.

Materials and Methods: A retrospective analysis was performed by examining histopathology data of patients with facial lesions throughout one year at a tertiary care institution. This study was conducted at the department of Dermatology, I-Care Institute of Medical Sciences and Research, Haldia, West Bengal, India from November 2018 to October 2019. Clinical data, encompassing age, gender, lesion form, and location, were extracted from medical records. The lesions were categorised as inflammatory, infectious, benign, or malignant neoplasms according to histological results. The agreement between clinical and histological diagnosis was evaluated using statistical techniques.

Results: There were 1.2 times as many male as female cases among the 350 cases of facial lesions that were examined. People in the age bracket of 31-50 accounted for nearly half of the cases. Benign neoplasms accounted for 42% of all lesions, while inflammatory lesions accounted for 30%, malignant neoplasms for 18%, and infectious lesions for 10%. These include seborrhoeic keratosis (18%), dermoid cysts (10%), and epidermal inclusion cysts (8%). There was a 12% incidence of acne and a 10% incidence of granulomatous dermatitis. Inflammatory and infectious lesions showed the highest frequency of inconsistencies because their clinical characteristics overlapped.

Conclusion: The definitive diagnosis of face lesions relies heavily on histopathological investigation, which is especially useful for differentiating benign from malignant disorders. Although clinical evaluation is still crucial, histopathology greatly enhances diagnostic precision, which helps with better prognosis and treatment planning. For more accurate diagnoses, it is best to use a multidisciplinary approach that incorporates clinical, dermoscopy, and histological evaluations.

Keywords: Facial lesions, histopathology, benign neoplasms, malignant neoplasms, diagnostic accuracy, retrospective study

Introduction

In clinical practice, facial lesions are frequently seen and might signify many dermatological disorders. These lesions can affect any part of the face, from the skin and hair follicles to the sebaceous glands, blood vessels, nerves, and subcutaneous tissue. The severity of the lesions might vary^[1, 2]. Both benign and malignant lesions exist, with the latter having the potential to worsen if not treated or discovered in a timely manner. Inflammatory disorders, benign tumours, infectious lesions, and malignant neoplasms account for the vast majority of facial lesions. Accurate diagnosis and treatment are of the utmost importance for the patient's physical and mental health due to the prominence of these lesions on the face and the potential psychological effects they may have^[2-4].

It is crucial to get a precise diagnosis while dealing with face lesions. Although clinical evaluation provides useful information about lesions based on their shape, size, location, and any symptoms they may be associated with, it is not always easy to tell them apart visually. Clinical diagnosis can be hard since some facial lesions, even benign ones, can look very similar to malignant disorders. In order to determine if the lesion is benign, malignant, or inflammatory, histopathology, which entails analysing tissue samples under a microscope, is crucial^[3-5].

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A definitive diagnosis can be made by histopathological investigation, which identifies the exact cellular features and tissue architecture of a lesion. For malignant lesions including basal cell carcinoma, squamous cell carcinoma, and malignant melanoma, early diagnosis and precise staging area of the utmost importance, as they greatly impact the treatment strategy and the patient's prognosis [4-6]. On the other hand, modest surgical removal or surveillance may be necessary for benign lesions such dermoid cysts, seborrheic keratosis, or epidermoid cysts. There is a high degree of agreement between clinical diagnosis and histological results, according to prior research. This is particularly true for lesions that are clearly characterized [5-7].

Lesions of various kinds have variable rates of diagnostic agreement; for example, inflammatory and infectious diseases tend to have higher clinical overlap than other types of lesions. Acne vulgaris, rosacea, and granulomatous dermatitis are inflammatory skin illnesses that can be difficult to diagnose because they share symptoms with other skin conditions. Similarly, histological confirmation is necessary since viral and fungal infections can seem like benign neoplastic tumours or fungal infections might look like benign lesions.

Examining the clinical characteristics, histological results, and diagnostic concordance for different kinds of face lesions, this study looks back at cases that occurred in a tertiary healthcare institution [6-8].

This study seeks to highlight the importance of histology in proper diagnosis and treatment planning by identifying the most prevalent forms of facial lesions and comparing clinical and histopathological diagnoses. In addition, it hopes to reveal how common certain face lesions are in the sampled population, which would provide light on illness trends across demographics like age, gender, and location. In order to enhance patient care and develop more effective methods for diagnosing and treating face lesions, it is crucial to understand these trends [7-9].

Materials and Methods

A retrospective analysis was performed by examining the histopathology records of patients with facial lesions over a one-year period at a tertiary care hospital. This study was conducted at the department of Dermatology, I-Care Institute of Medical Sciences and Research, Haldia, West Bengal, India from November 2018 to October 2019. Clinical data, including age, gender, lesion morphology, and site, were collected from medical records. The lesions were categorised into inflammatory, infectious, benign, and malignant neoplasms according to histological results. The agreement between clinical and histological diagnosis was evaluated using statistical techniques.

Inclusion Criteria

- Patients of all age groups with facial lesions clinically diagnosed and confirmed by histopathology.
- Lesions that underwent biopsy or excision for

histopathological examination.

- Both new and previously treated cases presenting for diagnostic evaluation.

Exclusion Criteria

- Lesions located outside the facial region.
- Incomplete clinical or histopathological data.
- Lesions not requiring biopsy or excision.
- Patients with previous histopathological diagnoses for the same lesion.
- Lesions treated with chemotherapy, radiation, or systemic treatments.

Results

The study evaluated the clinical aspects and histological findings of 250 cases of face lesions. Cancerous and noncancerous growths, as well as inflammatory and infectious lesions, were used to categorise the distribution of lesions. Both sexes were represented among the patients who were considered.

Table 1: Distribution of Facial Lesions by Type

Type of Lesion	Number of Cases (n=250)	Percentage (%)
Benign Neoplasms	120	48%
Malignant Neoplasms	50	20%
Inflammatory Lesions	60	24%
Infectious Lesions	20	8%

The benign neoplasms accounted for 48% of the face lesions, with epidermoid cysts making up 15% of the cases and seborrheic keratosis 30%. Squamous cell carcinoma (5%), basal cell carcinoma (12%) and malignant neoplasms (20%) ranked second and third, respectively. The most common types of lesions were inflammatory lesions (24%), infectious lesions (8%), and cutaneous TB (3%). Inflammatory lesions included acne vulgaris (12%) and granulomatous dermatitis (10%).

Table 2: Gender Distribution of Facial Lesions

Type of Lesion	Male (n=120)	Female (n=130)
Benign Neoplasms	55	65
Malignant Neoplasms	30	20
Inflammatory Lesions	25	35
Infectious Lesions	10	10

Benign neoplasms, such as seborrheic keratosis and epidermoid cysts, were more common in females (65 instances) compared to males (55 cases), according to the gender distribution. A greater number of malignant neoplasms, including basal cell carcinoma, were found in males (30 instances). Rosacea and acne vulgaris are examples of inflammatory skin disorders that disproportionately affect women (35 instances). Both sexes had an equal number of infectious lesions.

Table 3: Clinical vs. Histopathological Diagnosis Concordance

Type of Lesion	Clinical Diagnosis (%)	Histopathological Diagnosis (%)	Concordance (%)
Benign Neoplasms	118 (98%)	120 (100%)	98%
Malignant Neoplasms	45 (90%)	50 (100%)	90%
Inflammatory Lesions	50 (83%)	60 (100%)	83%
Infectious Lesions	18 (90%)	20 (100%)	90%

There was minimal diagnostic difference for seborrhoeic keratosis and epidermoid cysts, and the highest concordance between clinical and histological diagnosis was for benign neoplasms (98%). There was 90% agreement in malignant neoplasms, mostly because several basal cell carcinomas were mistakenly thought to be benign growths. Acne vulgaris is frequently clinically confused with another inflammatory illness, and there was 83% concordance among inflammatory lesions. There was 90% agreement in infectious lesion diagnoses; most cases of viral warts were appropriately identified, however, cutaneous tuberculosis was initially misidentified for other skin disorders.

Discussion

The term "facial lesion" can refer to a broad range of illnesses, from small growths to larger tumours. Histopathological analysis plays an essential role in validating clinical diagnoses, and this study demonstrates the range of face lesions seen at a tertiary healthcare institution. Below, we address the study's findings, which show a number of noteworthy patterns in the appearance and diagnosis of facial lesions. In this study, benign neoplasms involving the face were the most common type of lesion (48% of cases), with seborrhoeic keratosis and epidermoid cysts making up over half of these instances [10-12].

The results are consistent with previous research showing that seborrhoeic keratosis is a prevalent benign skin tumour, especially in middle-aged and older adults. Despite their usually non-threatening nature, benign neoplasms are quite common, thus it is important to identify and treat them properly [13]. The most common lesion in this study was basal cell carcinoma (BCC), followed by malignant neoplasms (20%). The fact that basal cell carcinoma (BCC) is more common in men than in women is in line with other research suggesting that gender and factors like sun exposure contribute to men's higher BCC incidence. Particularly in the elderly, a complete clinical and histological evaluation is required to distinguish malignant neoplasms from benign growths, since they made up a considerable percentage of face lesions [14-16].

Acne vulgaris and granulomatous dermatitis were the most prevalent inflammatory lesions, making for 24% of the cases. This study's acne vulgaris prevalence rate is in line with the increased frequency of the condition in younger age groups, such as teenagers and young adults. Additionally, granulomatous dermatitis was a common diagnosis; this disorder is characterised by chronic inflammation of the skin and is often associated with rosacea and sarcoidosis [16, 17].

The study found that there were 65 cases of benign neoplasms in females, which is slightly more than the 55 cases in males. Seborrhoeic keratosis and other benign skin problems are more common in middle-aged women, which is likely to blame. However, men were more likely to develop malignant neoplasms (30 cases vs. 14 females). This disparity may be attributable, in part, to men's greater propensity to spend time outdoors, where they are more likely to be exposed to environmental carcinogens such UV radiation [18]. The fact that squamous cell carcinoma and basal cell carcinoma are more common in men lend credence to this finding. Acne vulgaris is more common in females during their reproductive years, and the incidence of inflammatory lesions was 35 cases in females compared to

25 instances in males. This is because, especially in girls, this is a result of the hormonal shifts and increased sebum production that characterise puberty [19, 20].

This study's clinical-histopathological concordance was a crucial component. The study revealed that histological findings and clinical diagnoses were highly concordant, with benign neoplasms showing the highest level of agreement at 98%. Benign lesions with easily proven histological characteristics, including seborrhoeic keratosis and epidermoid cysts, are likely to exhibit such high concordance. Similarly, there was a high concordance rate of 90% for malignant neoplasms, especially basal cell carcinoma, suggesting that doctors are good at identifying these tumours by their unique look [20-22].

The difficulty in differentiating inflammatory lesions from other dermatological disorders with comparable clinical manifestations possibly explains why the concordance rate was slightly lower for these lesions (83%). For example, in moderate or early episodes of acne vulgaris, the doctor may mistake it for rosacea or granulomatous dermatitis. Virus warts and cutaneous tuberculosis are infectious lesions with high concordance (90%) but benign growths were previously thought to be cutaneous tuberculosis in a few instances [23-25]. Although histopathology is useful for verifying face lesion diagnoses, there are a few obstacles to think about, according to the study's results. Diagnosis remains complicated due to the high degree of clinical overlap between different kinds of lesions, particularly in inflammatory and infectious diseases. The necessity of histological investigation for conclusive diagnosis is highlighted by the fact that clinical examination alone can occasionally lead to misdiagnosis, especially in cases when lesions display unusual characteristics or when malignancy is suspected [25-27].

The findings might have been skewed due to data collecting biases and the study's retrospective design. It is possible that some benign lesions were not biopsied, and that certain inflammatory or infectious diseases were treated solely on the basis of clinical suspicion, without histological proof. Additional limitations include the study's setting in a tertiary healthcare facility, where patients may have more advanced lesions and the results' applicability to primary care or healthcare facilities in remote areas [27-29].

Conclusion

Ultimately, when it comes to correctly identifying face lesions, particularly those that are clinically unclear or could be cancerous, histological analysis is vital. Excellent agreement between clinical and histological results for both benign and malignant tumours demonstrates the high diagnostic accuracy of histopathology, as demonstrated in the study. Nevertheless, infectious lesions and inflammatory lesions still need additional tests and more thorough clinical evaluation to confirm a diagnosis. The results highlight the importance of integrating clinical evaluation, dermoscopy, and histopathology into a unified strategy for managing facial lesions for the benefit of patients.

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None

Conflict of Interest

None

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