

A histopathological review of scalp tumors: Hospital based study

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Abstract

Background: Lesions of the scalp are rare comprise a heterogeneous assemblage varying from benign to malignant. The clinical experience regarding these rare lesions is limited. Hence there is corresponding paucity of data in the medical literature regarding the incidence and prevalence of scalp lesions with an extremely wide range of pathology appearances. This study is intended to determine the distribution of both benign and malignant lesions. **Materials and Methods:** This is a 2 year (2010-2012) retrospective study of all scalp lesions received at our referral teaching hospital, Father Muller medical college, Mangalore, India. All the histopathologically proven cases of scalp lesions were reviewed and clinical details were obtained from the archives. Age, gender, and histology of all the specimens were evaluated. **Results:** Among the 45 cases, 39 (87%) cases were benign lesions and remaining 6 (13%) were malignant lesions. Most common clinical presentation was a scalp swelling or a nodule. The male to female ratio among the benign tumors was 1.5:1. Age distribution in benign lesions was 20-40 years whereas malignant lesions were seen in the elderly. Tricholemmal cyst was the most common benign lesion and basal cell carcinoma was the most common malignant lesion. **Conclusion:** Scalp lesions are rare, benign tumors are more common and malignant tumors are not uncommon. In each case of a scalp lesion a broad differential diagnosis has to be considered. Improved clinical experience and hospital attendance with more comprehensive reporting would yield more representative data.

Keywords: Scalp tumors, tricholemmal cyst, basal cell carcinoma, metastatic mammary osteosarcoma.

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occurring in the scalp are not common. 20% of scalp tumors are malignant.¹ Malignant scalp tumors can be primary or metastatic. Overall, primary tumors are more common than metastatic tumors.⁴ Only few articles regarding the epidemiology and histology of scalp lesions could be found in the literature.^{5,6} Furthermore most of the literature on scalp lesions is on individual tumors or malignant lesions.^{7,8} The clinical experience with these rare lesions is limited. Hence there is corresponding paucity of data in the medical literature regarding the incidence and the prevalence of scalp neoplasms.

INTRODUCTION

The scalp is a specialized anatomic region, in which the highest density of pilosebaceous follicles is present and terminal hairs are concentrated.¹ Scalp tumors are the most neglected since they are not easily noticed with subsequent delay in detection and late treatment.² Approximately 2% of tumors are located on the scalp. Most of the tumors are benign.³ Malignant tumors

MATERIAL AND METHODS

A retrospective statistical analysis was made of 45 cases, confirmed by histopathology from January 2010 to June 2012 from the department of pathology, Father Muller medical college, Mangalore. Scalp lesions were then classified as benign or malignant. The benign category included non neoplastic cysts and benign tumors. The malignant category included both primary and metastatic

tumors. For each tumor the age and sex of the patient were also recorded.

RESULTS

A Total of 45 cases were included during the study period. Age group of benign lesions had a wide range with common lesions presenting in the age group of 20-40 years. Malignant lesions were seen in the elderly. The male to female ratio among the benign tumors was 1.5:1. Most of them presented with scalp swelling or nodule. Majority 39 (87%) were benign lesions and the remaining 6 cases of the malignant lesions accounted for 13% of the cases. (Figure1). Out of total 39 benign tumors (Table 1) common tumors included trichilemmal cyst 8 (20%), followed by epidermoid cyst 7(18%), pyogenic granuloma 7 (18%) and lipoma 5 (7%).(Figure 2) Of the 6 malignant tumors diagnosed, 50% were primary tumors and remaining 50% were secondaries. Histopathologically the primary malignancies included 1 case of squamous cell carcinoma (SCC) and 2 cases of basal cell carcinoma (BCC). The metastatic tumors were one case of mammary osteosarcoma and 2 cases of adenocarcinoma. (Table 2)

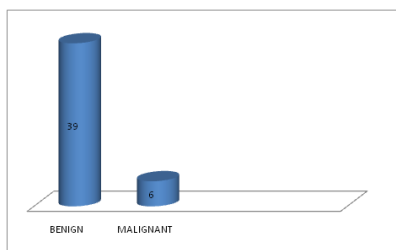


Figure 1: Distribution of the scalp tumors

Table 1: Distribution of Benign tumors of the scalp

Benign Tumors	Number
Hidradenoma	2
Neurofibroma	2
Hemangioma	3
Seborrhic keratosis	3
Squamous papilloma	2
Nevus	1
Trichilemmal cyst	8
Epidermoid cyst	7
Lipoma	5
Pyogenic granuloma	7
Total	39

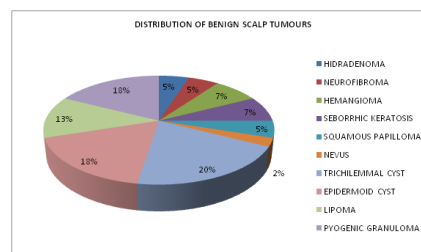


Figure 2: Shows the distribution of benign tumors

Table 2: Distribution of Malignant tumors of the scalp

Malignant Tumors	Number
Adenoid basal cell carcinoma	1
Pigmented basal cell carcinoma	1
Squamous cell carcinoma	1
Metastatic mammary osteosarcoma	1
Metastatic adenocarcinoma	2
Total	6

DISCUSSION

The scalp is a common site for the development of tumours. These may be benign or malignant, primary or secondary. These may include conditions such as epidermoid cysts, pilar tumours, actinic keratosis.^{9,10} There is paucity of studies done on benign tumors of the scalp, their incidence and prevalence is not exactly known but there are individual case reports of the uncommon histological types of benign tumors.¹¹ The lack of data is probably due to the benign nature of the tumors, small size, covering of the tumor by hair follicles which go unnoticed and neglected.¹⁰ Only two percent of epithelial tumors are located on the scalp.¹² In the present study the benign tumors were the commonest with majority being epidermoid cysts, trichilemmal cysts and pyogenic granulomas. Trichilemmal cyst was the most common benign tumor in our case. Trichilemmal cysts are keratin-filled cysts with a wall resembling the external root sheath of a hair follicle. These cysts affect 5% to 10% of the population. They are most often benign and can recur after incomplete excision. In some cases, malignant degeneration and invasion can occur.¹¹ In a study done on scalp biopsies in Loyola University Medical Center, majority were benign lesions followed by malignancies similar to our study.⁴ Malignant tumors of the scalp are uncommon. Most of the malignant tumors are squamous cell carcinoma and basal cell carcinomas. In our study malignancies constituted 13% of all the cases. Scalp is a vascular tissue, and is a common site for metastatic tumors. Common primary tumors observed in this study were basal cell carcinoma followed by squamous cell carcinoma. Adu and Annan in a prospective study of 31 primary malignant skin tumours in Ghanaians observed equal proportions of Malignant Melanoma (42%) and SCC (42%); the rest were BCC (3%) and sarcomas

(13%).¹⁰ Another study by Yashpal Manchanda *et al*³ showed that basal cell carcinoma was more common than squamous cell carcinomas and was seen in elderly patients which is similar to that seen in our data. In women, the vast majority of scalp tumors were BCCs, whereas in men SCCs outnumbered BCCs.¹³ In our study both were female patients in the 6th decade. A study by Connor and Cohen, found breast cancer as the primary malignancy in 84% of the patients with neoplastic alopecia.¹⁴ Other tumours to metastasize were gastric carcinoma, colon carcinoma, cervical carcinoma, carcinoma larynx, thyroid and trophoblastic tumours.^{3,8} Metastatic tumors in our case was from the breast. The patient was 83 year old female, a known and treated case of primary mammary osteosarcoma who presented subsequently with scalp nodule. Two cases were adenocarcinoma; one was an unknown primary and the other had adenocarcinoma of right upper alveolus. A study by Saikia *et al*⁴ found that the most common primary site of metastatic adenocarcinoma to the scalp was head and neck region. The most common site of metastasis is the closest capillary bed the tumor cells encounter as in our case.⁴

CONCLUSION

The scalp is the most neglected system and not an uncommon site for tumors. Although benign tumors are observed more frequently in this region, a high index of clinical suspicion is essential to ensure early detection of malignancies and initiate appropriate treatment.

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