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ORIGINAL ARTICLE

EVALUATION OF MALIGNANT SKIN LESIONS ON FINE NEEDLE ASPIRATION CYTOLOGY AND THEIR CLINICOPATHOLOGICAL CORRELATION IN A TERTIARY CARE HOSPITAL IN NORTH-EAST INDIA

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ABSTRACT: BACKGROUND: Malignant lesions of skin often come to clinical attention. Fine needle aspiration cytology (FNAC) is an easy and commonly used technique to diagnose them. Basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and malignant melanoma predominant the picture. **AIM:** To evaluate the malignant skin lesions by FNAC and their clinicopathological correlation. **MATERIAL AND METHODS:** FNAC from patients with the suspected malignant skin lesions coming to the department of pathology is done. Their MGG stained sections are studied and clinic-pathological correlation is done. **RESULTS:** Out of the 21 malignant skin lesions 85.7% cases accurately diagnosed by FNAC in our study. This is similar to other studies done on malignant skin lesions.

KEYWORDS: Fine needle aspiration cytology, Basal cell carcinoma, Malignant.

INTRODUCTION: Primary neoplastic disease of the skin is common. Early recognition of such lesions is important because complete excision will cure almost all. Patients who develop squamous cell carcinoma and malignant melanoma often have recognizable precursor conditions. A few skin lesions resemble malignancies. Lesions that are growing, spreading or pigmented, or those that occur on exposed areas of skin are of particular concern. Knowing the similarities and differences between these lesions allows the primary physician to make a diagnosis in most cases by simple inspection and palpation. When in doubt, it is appropriate to perform an excisional biopsy of small lesions or punch biopsy of larger lesions. Removal of premalignant lesions will reduce the occurrence of malignant disease.[1]

Almost all skin cancers can be cured by early excision or destruction. Fine-needle aspiration cytology (FNAC) on the other hand is an even simpler procedure, which can provide accurate diagnosis to confirm or exclude the malignancy.[1] Basal cell carcinomas are the most common type of skin cancer, making up more than 80% of the nonmelanoma cancers.[2] FNAC showed both a high sensitivity and specificity in the diagnosis of malignant skin tumors, specifically basal cell carcinoma (BCC) and squamous cell carcinoma (SCC).[3] Therefore it is recommend for the initial evaluation of a patient with suspected BCC or in cases of recurrence. The technique is cheap, quick, less invasive, and highly accurate for the diagnosis of malignant skin lesions.

FNAC can be also helpful for other malignant tumors of skin like squamous cell carcinoma and malignant melanoma of skin. FNAC is a useful diagnostic procedure for clinically suspicious lesions in patients with a previous diagnosis of melanoma. The morphologic features of malignant cells in smears, can be helpful in making the preoperative cytologic diagnosis of malignant melanoma of the skin.[4] It is a common procedure that can be done in the clinic using simple palpation for more superficial lesions or with the assistance of image guidance for more deeply seated lesions.[5]

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This prospective study was done to observe the pattern of malignant skin lesions in the Pathology department at Silchar Medical College and Hospital, Assam and to correlate skin lesions diagnosed as cytologically malignant with their histological findings.

MATERIALS AND METHODS: This prospective study was carried out on the patients coming for FNAC at department of pathology, Silchar Medical College and Hospital, Assam referred from department of dermatology for suspected malignant disease. Before initiating the study, proper approval was taken from the Institutional Ethics Committee (IEC) and the Chief Superintendent of Silchar Medical College and Hospital. Total 21 patients coming for FNAC in the institution from 1st June 2014 to 31st May 2015, a period of 12 months were collected for the study. FNAC is done with 23 g needle and scraping whenever necessary. Two smears immediately before drying were immersed in jar containing a mixture of 50% ether and 50% absolute alcohol in equal quantity and kept for at least 30 min and then stained with Papanicolaou technique. The other 2 slides were air dried and fixed in methanol and were stained with MGG. The cytomorphological features are studied. Punch biopsies were taken to confirm the clinical and cytologic impression. Histopathological sections were stained with hematoxylin and eosin stain and correlation is done with histopathology for the malignant cases. Correlation is done for 21 malignant cases.

The data were collected in a data sheet as shown above, containing information regarding age and sex of the patients along with the clinical diagnosis. The data obtained & the patient related parameters were computed using MS-Excel 2007. The results were expressed as percentage/ proportion either as pictorial representation in the form of bar diagram a pie chart or in the tabular form.

RESULTS: The age range of total 21 patients was 19-82 years with the mean age of 41.2 years. Highest frequency of malignant skin lesion was found in the age group of 31-40 years.

AGE GROUPS	NUMBER OF PATIENT	PERCENTAGE
0-10	0	00
11-20	2	9.5
21-30	4	19.0
31-40	10	47.6
41-50	3	14.2
51-60	1	4.7
61-70	1	4.7
71-80	0	0
Total	21	100

Table 1: Distribution of patients according to age

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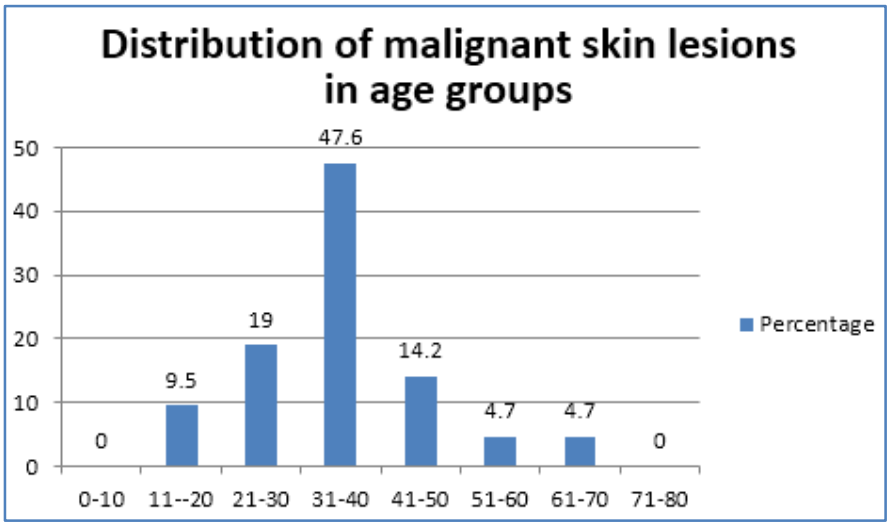
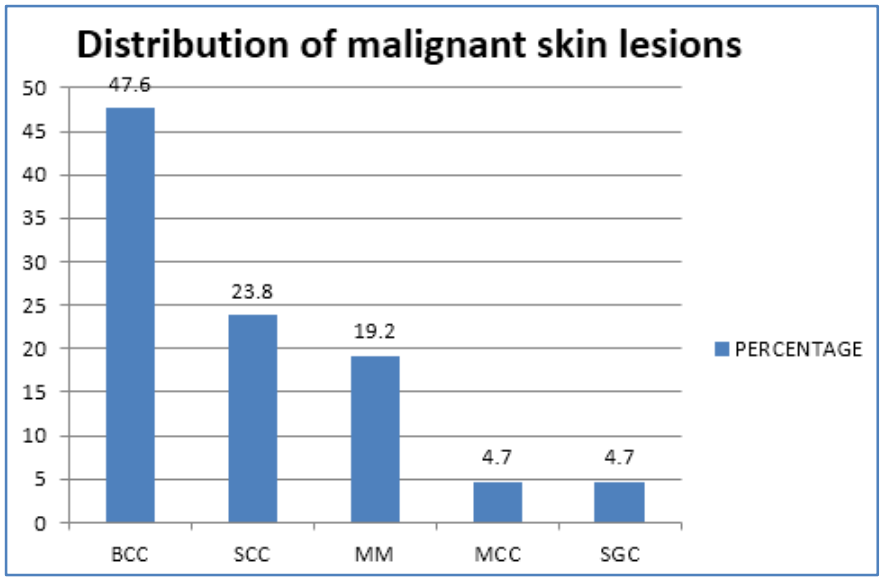
FNAC Diagnosis	Number	Percentage
Basal cell carcinoma	10	47.6
Squamous cell carcinoma	5	23.8
Malignant melanoma	4	19.2
Adenosquamous carcinoma	1	4.7
Sebaceous gland carcinoma	1	4.7
Total	**21**	**100**

Table 2: FNAC Diagnosis of skin lesions



Graph 1: Distribution of malignant skin lesions in age groups



Graph 2: Distribution of malignant skin lesions

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BCC presented clinically with single or multiple nodules and ulcerated swelling either on the cheek, or eyelid or forehead. Imprint smears revealed cohesive sheets of round to oval tumor cells having basophilic cytoplasm, uniform dark, oval nuclei with evenly distributed chromatin. Histology revealed uniform dark closely packed cells, peripheral palisading and retraction artifact.

Malignant melanoma lesions showed mottled appearance due to pigmentation with irregular borders. On cytology poorly cohesive, some plasmacytoid even binucleated cells with prominent nucleoli and melanin pigment seen. Histology revealed atypical melanocytes with nuclear pleomorphism and hyperchromasia, prominent nucleoli and abundant melanin pigment. There is lateral extension and asymmetry.

Histological examination of merkel cell carcinoma showed small round cells in the dermis in a diffuse pattern. The cells had scanty cytoplasm, round and vesicular nuclei with fine granular dusty chromatin and multiple nucleoli.

The lesion of sebaceous gland carcinoma was infected and bloody discharge was present. Cytology showed clusters of epithelial cells with enlarged nucleus, prominent nucleolus and eosinophilic cytoplasm having clear droplets. Occasional mitotic figures were also seen. Histology revealed sheets and trabeculae of malignant cells in lower dermis with variation in size, eosinophilic and clear vacuolated cytoplasm with enlarged hyper chromatic nucleus, prominent nucleoli and abnormal mitotic figures.

Clinical Diagnosis	No. of Cases	Cytology	Histopathology correlation	Concordant	Discordant
Basal cell carcinoma	10	10	10	8	2
Squamous cell carcinoma	5	5	5	4	1
Malignant melanoma	4	4	4	4	0
Adenosquamous carcinoma	1	1	1	1	0
Sebaceous gland carcinoma	1	1	1	1	0
Total	**21**	**21**	**21**	**18**	**3**

Table 3: Clinicopathological correlation of the malignant lesions

FNAC Results	No. of Cases	Percentage
Concordant	18	85.7
Discordant	3	14.3
Total	**21**	**100**

Table 4: FNAC results showing accuracy of diagnosis

85.7% cases accurately diagnosed by FNAC in our study.

DISCUSSION: In our study most common malignant lesion is basal cell carcinoma. In the study by Masoom Kassi also most common malignant lesion was basal cell carcinoma followed by 2 squamous cell carcinoma.[2]

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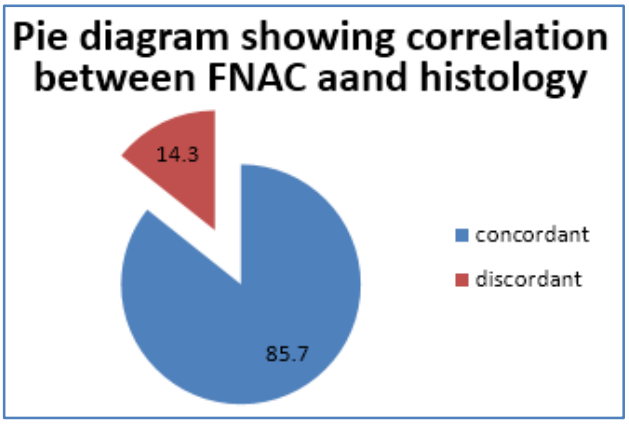
85.7% cases accurately diagnosed by FNAC in our study. It is similar to the study of Fauziya Sabir et al where sensitivity was 88.9% cases.[6] Lesions were seen on the face in all the cases of BCC in our study, similar to the findings by Allen and Malberger et al.[7,8] Our cytological findings correlated with the observations of Lay field and Glasgow, Malberger et al.[7] as well as Arya et al.[5] and Dey et al.[9] Similar results were seen in study of Masoom Kassi et al with 94.3% sensitivity.[2]



Graph 3: Distribution of malignant skin lesions

FNAC can be useful for diagnosis of malignant skin lesions. It also helps avoid general anesthesia, a short hospital stay, and other associated costs of general surgery.

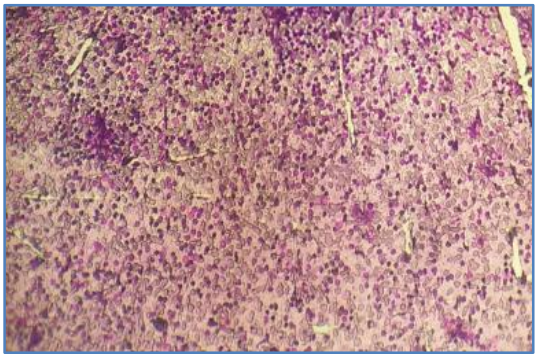


Fig. 1: Basal cell carcinoma on FNAC

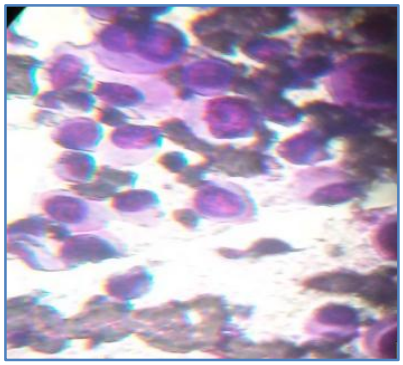


Fig. 2: Malignant melanoma on FNAC

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