



IDENTIFICATION OF SQUAMOUS CELL CARCINOMA AND ITS PATHOLOGICAL DIAGNOSIS

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Abstract

While the establishment brags that more cancer patients survive than ever before, the horrific side effects inflicted by conventional therapy often leave patients partially or severely debilitated, and set the stage for deadly secondary diseases. For those people suffering from cancer the dangerous mix of chemotherapy and surgery not only failed to cure the cancer, but destroyed their remaining quality of life. Developing the stains of the collected samples, We can easily distinguished Normal (N) from malignant (M).

Keywords: Oncogenes, Tumor suppressor genes (TSG), Malignant.

INTRODUCTION

Cancer is one of the major causes of mortality in human beings. Its place in mortality is only second to that of cardiovascular diseases. Cancer is going to become a leading cause of death in the twenty first century. It is a morbid phenomenon caused by uncontrolled cell division, growth and differentiation. The normal cell division is a regulated phenomenon guided by the functional units of DNA molecules, called genes. The life of the normal cells also regulated. It grows, becomes old, and dies automatically after its programmed function is accomplished. But cancer cells are immortal. They do not die automatically. The genes which are responsible for uncontrollable growth of cell in the human body are known as oncogenes. But the human body is so formed that it is well equipped with self guarded mechanisms. The oncogenes are kept under control by another set of protective genes, called tumor suppressor genes (TSG). Therefore if a normal cell happens to acquire a new oncogenes lose the protective capacity of its TSG by some mechanism, it is

liable to become cancerous with the formation of malignant growth.

Results and Discussion:

Tumor cell continue to grow because the newly formed cells in them give rise to new generation of cells. The cells composing a tumor originate from pre existing cells in the body. The tumor cells usually resemble one another but they are often quite unlike the normal adult cell from which they spring. The collection of aberrant cells which compares a tumor is an independent growth and serves no useful purpose in the body. Few characteristics of the cancer muscles are listed below:

1. Enlargement of the Nucleus: It is an indication of rapid cell grown of an embryonic cell.
2. Multiple Nucleuses in a Cell: This is another indication of rapidly growing embryonic cells types. The nuclei are dividing more rapidly than is the cytoplasm and as a result multiple nuclei are found within a single cell and such cells are called 'tumor giant cells'.
3. Enlargement of Nucleolus: In cancerous cell the rate of growth of nuclear material is more than the rate of growth of nuclear matter in normal cell consequently, the nucleolus may become two to three times its normal size.
4. Increased Number of Mitotic Figures: The more rapidly the cells are multiplying the greater is the chance that the mitotic figures will be found.
5. Ityper-Chromasia of the Cell: The more embryonal the cell the more intensely the cell strains with heamatoxylin, specially the nucleus the intensity of the

normal adult cell gives an indication as to the maturity of the cell.

6. Embryonal Type Cells: The cancerous cell loses its resemblance to the cells from which it is originated and approaches the undifferentiated embryonal cell type.

This indicates that the cell growth is no longer under the control of growth regulating and maturing factors.

CHARACTERISTICS OF SQUAMOUS CELL CARCINOMA

A squamous-cell carcinoma is a malignant tumor of stratified squamous epithelia. It has been observed that the squamous cell carcinoma shows different characteristics of a papilloma.

- 1) The epithelia cells of a carcinoma are more embryonic as determined by their larger size the apparent deficiency of nuclear chromatin the large nucleus and the presence of numerous mitotic cell bodies.
- 2) The tumor cells are not confined within the epidermis or mucosa they infiltrate the underlying tissues.
- 3) The infiltrating cells grow randomly in direct ions of least resistance i.e. into soft tissues thin walled blood vessels and lymphatics.
- 4) The proliferating cells appear in large groups without an admixture of stroma but individual groups are separated from one another by stands of the stroma. This is a different arrangement than occurs in sarcomas in which the parenchyma and stroma are uniformly mixed.
- 5) In cutaneous carcinomas round masses of eukaryotes epithelial cells arranged, centrally may be numerous. They are called epithelial pearls.
- 6) The underlying tissues usually display signs of a chronic inflammatory reaction

PATHOLOGICAL DIAGNOSIS: CONVENTIONAL METHOD

When we observed the following symptoms, go to the doctors.

- 1) The human showed abnormal behavior.
- 2) The breast of female showed swellings.
- 3) Some part of breast showed growth of muscles.

The doctors suspected the possibility of the growth of cancer in the breast of the female of human. In order to confirm the growth of abnormal tissues the part of the abnormal and normal tissues were cut and merged in normal saline and then sent to pathological laboratory for the test. In the pathological laboratory the tissue from the human were sliced and stained and slides were prepared. We photographed the stains and they are displayed in the following figure(Fig 2.1)

. Staging:

It is usually necessary to perform specialized investigations to determine the extent of dissemination of the tumor prior to selecting treatment –the process of staging the tumor. Staging investigations take time and the delay causes anxiety for the patients. Staging is important both for the selection of appropriate treatment, and to provide information about prognosis. Usually advancing stage indicates a worse prognosis, even if the tumor has not yet metastasized. Inadequate or inaccurate staging may lead to under or over treatment, resulting in failure to cure or unnecessary toxicity respectively.

RESULT AND DISCUSSIONS:

In the present work several samples are collected for the study. The collected samples belong to the category of malignant cancer. We have collected samples from different organs of human beings. The collected samples are affected by “Squamous Cell Carcinoma”. The diseases of the samples were confirmed by histo-pathological test. We have developed the stains of the collected samples. We consulted the pathologist who was experts in identifying the cancerous growth. From the analysis of the stains it is very clear that the cancerous tissues show following distinguishing features.

- 1) The stains show stratified squamous epithelium with loss of Nuclear and cellular polymorphism.
- 2) Cells become large and hyper chromatic
- 3) The symptoms of scanty cytoplasm were seen
- 4) The nuclear and cellular papilomorphylism also was seen.
- 5) The karyotin purls were seen at various places.

CONCLUSIONS:As the stains showed above mentioned symptoms, it was diagnosed that there is presence of squamous cell carcinoma

with large scale keratrinol type. It was also found that the human squamous cell carcinoma shows histological as well as histopathological similarity with that of human beings. From the analysis of the stains, we can easily distinguish normal (N) and malignant (M) tissues.

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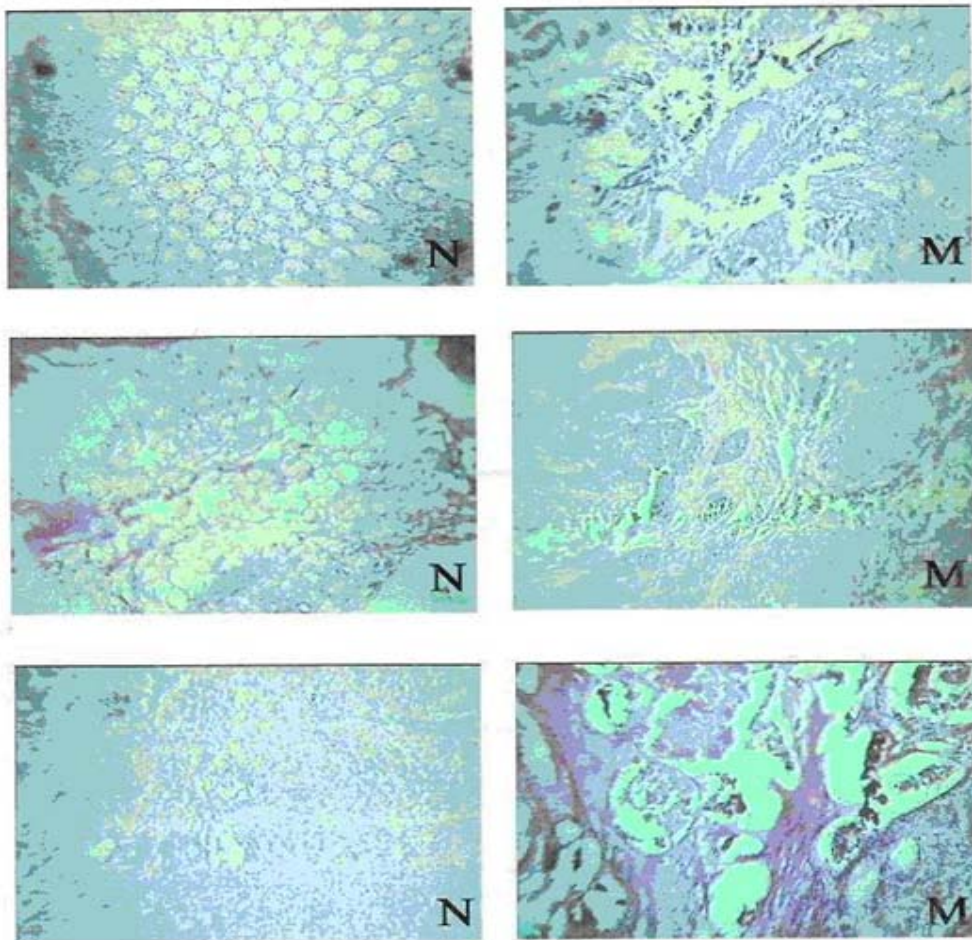


Fig. 2.1 Stains of normal (N) and malignant (M) tissues
Top: Rectum Cancer, Middle: Breast cancer and
Bottom: Buccal Mucosa Cancer