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DETECTION IRIS MELANOMA IN HUMAN EYE

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Abstract: Iris Melanoma is nothing but type of eye tumor. Iris is colored part of eye that surrounds pupil. The Melanoma is evil tumor grows and develops in tissues in middle layer of eyeball. Symptoms of Melanoma are dark spots in iris section of eye , change in size as well as shape of pupil, changes in vision. To detect these dark spots the proposed system is developed. This system consist of different techniques from image processing. This paper aims to develop a computerized automatically detects the presence of abnormalities or tumor in iris. Image filtering, image fusion, edge detection, image segmentation are methods used in order to analyze and segment tumor into iris, and mark abnormal part onto normal eye image.

I .INTRODUCTION:

The word 'iris' is generally used to denote the colored portion of the eye. The iris of human eye is globally identified as the better solution for biometric systems with its unique feature and complex pattern. Iris is regarded as an inner organ of human body. However it may be easily observed from exterior. Iris has a very fine structure that contains five layers of fiber like tissue. These tissues are very complex and reveal in various forms. The surface of iris also contain very complex structure such as crystals, thin threads, spot concaves, radials, furrows, stripes and other. In other side, the iris has the significance to reflect the changes in human body with the varying health condition. Iris analysis studies the relationship between human health and changes in the anatomy of the iris. Iris diagnosis emphasizes the detecting and analyzing of local variations in the characteristics of irises.

The structure of eye is explained as follow, The eye has 3 major parts: the eyeball (globe), the orbit (tissues surrounding the eyeball) and the Adnexal (include the eyelids and tear glands) structures. The Eyeball consist of the sclera which is the white part of eye and the iris is the black part of the eye excluding the pupil which is the black part into the iris.

Eye cancer can be defined as an fast growth of abnormal cells[1]. This may be produced in or around the eye and then develop into a mass (tumor). A tumor is a mass of tissues formed by an uncontrolled growth of cells. There are different types of eye tumors and each type can affect certain parts of the eye. They are categorized as either primary meaning it started in the tissues of the eye or secondary meaning that the cancer started somewhere else in the body and metastasized or spread to the eye. Secondary eye cancer is more common than primary eye cancer. Breast cancer and lung cancer are the most common types of cancer that can cause secondary eye cancer. Symptoms of eye tumor are change size of pupil as well as vision, dark spots containing iris part of eye.

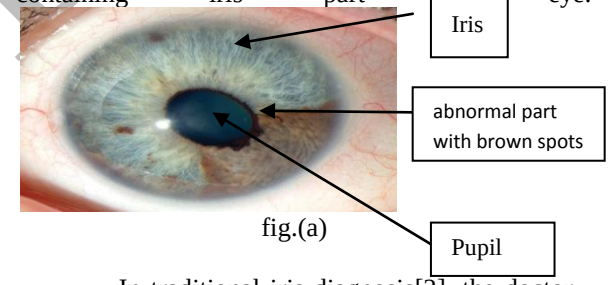

fig.(a)

In traditional iris diagnosis[2], the doctor firstly uses a microscope and a slit lamp to examine the patient's iris and then identifies symptoms on the basis of professional knowledge, finally makes a handwritten record of the examination. Obviously, this process has some fault. The slit lamp is tiring for the eyes of both doctor and patient. And the examination and identification are very subjective and dependent on the experience of the doctors. Ultrasound examinations, high-resolution ultrasound biomicroscopy (UBM), optical coherence tomography, computerized tomography (CT), magnetic resonance imaging (MRI), and fine-needle aspiration biopsy are technologies that may help with early tumor detection.In the Proposed work, which stimulates

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the human vision, so it can detect the first two signs which are the dark spots and the change in the size and shape of the discussed iris tumors. The proposed work aims to automatically detect the tumor into the iris region.

II.METHODOLOGY

Iris tumor detection system is nothing but our Proposed system. This paper gives idea about detection system. Fig.(b) gives idea about Proposed work system. Input images ie. normal eye and test image will be collected from available database. Test image is nothing but abnormal eye containing dark spots on iris part. Then preprocessing[3] will be done on both eye images. From abnormal eye input image abnormal part will be segmented. After that, segmented part & normal eye will be fused using image fusion technique. Feature extraction of fused image and normal eye will be take place. Classifier classify that abnormal part according to its features .

In preprocessing section both input images will go through RGB to Gray conversion, image filtering for removing the noise, background extraction. Addition of abnormal eye gray scale image and removed background will be performed. After that abnormal part segmentation will be done by edge detector operators. For better result for tumor image fusion will be done using pixel or feature level fusion[4]. After fusion of image feature extraction of fused image will be performed[5] [6] . According to extracted features classifier helps to classify tumor. For classification artificial neural network will be used. According to size of abnormal part ANN will be classify that test image of eye will be tumorous or not.

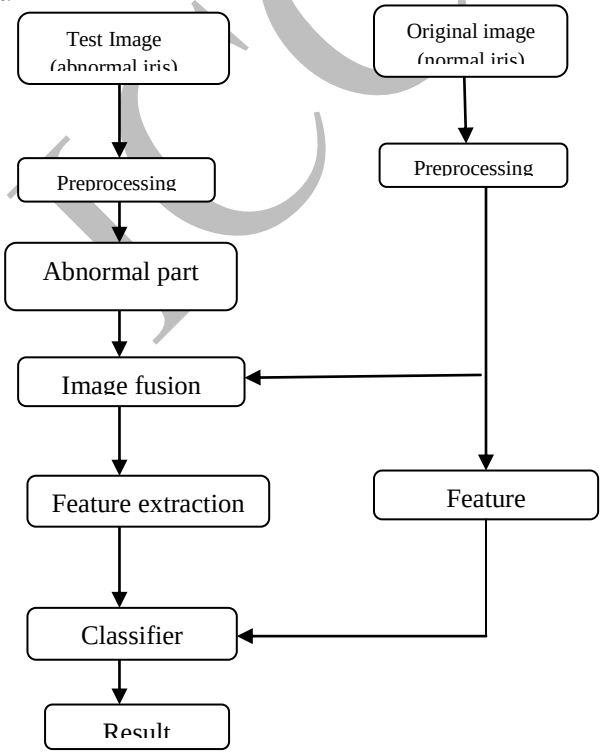

fig.(b): Flow Graph of Proposed Work

CONCLUSION:

The Iris Melanoma is nothing but type of eye tumor which grows in eye ball section of eye. The proposed system will be help in detection of symptoms of this type of tumor. Using some image processing techniques we can find out actual affected part due to tumor and using ANN we can classify that eye will be tumorous or not.

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