

Uterine Cancer: Review

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Abstract: - The uterine cancer can be viewed by the ultrasound scan (or) MRI scans. The ultrasound scanned image is taken for the entire process. The ultrasound scan is more comfortable than MRI scan for diagnosis. It is not affect the human body because it does not use a radiation. Ultrasound doesn't emit radiation. There are different types of algorithms were developed for uterine cancer detection. An ultrasound device uses sound waves that can't be heard by humans. The sound waves make a pattern of echoes as the bounce off organs inside the pelvis. Echoes' create a picture of uterus.

Keywords: Ultrasound, Cancer, Uterus

1. Introduction:

Uterine cancer is also known as endometrial cancer. The two main types of endometrial cancer are: [1] Endometroid adenocarcinoma [2] Uterine carcinosarcoma

Endometroid Adenocarcinoma: This type of uterine cancer forms in the glandular cells of uterine lining, it accounts for as much as 75 present of all uterine cancers. Endometroid adenocarcinoma commonly detected early and as a high cure rate.

Uterine Carcinosarcoma: This rate form uterine cancer felt to be an endometrial cancer. It has elements of both adenocarcinoma and sarcoma. These cancer have a high risk of spread to lymph nodes and other parts of the body. Ultrasound or ultrasonography is a medical imaging technique. Ultrasound is used in medicine to view internal organs of the body. It can also use to locate objects. Ultrasound scans are used to detect problems in the liver, heart and kidney (or) uterine. That uses high frequency sound waves and their echoes. The sound waves travel in to our body and a boundary between tissues. The most noticeable advantages of ultrasound scanning are safety, cost effectiveness, speed,

easy handling and portability. Ultrasound is based on the principle of sound wave echoes. Sound wave travels from the probe to the object, passes through it and is continuously reflected back to the probe from multiple points inside the object. Ultrasound involves sound wave of frequency in the range of megahertz; typically this ranges between 3.5-10 MHz the machine display the two dimensional image. The quality of ultrasound images is limited by granular speckle noise. This makes it difficult to segment the images. The image is pre-processed in order to crop it such that unnecessary portions as well as the speckle noise are removed. We use a morphological cleaning algorithm to clean the image. Then it is segmented by an algorithm which uses a collection of rules to locate the cancer and morphological concepts to segment the image.

2. Methods

A) Image Segmentation

In computer vision, image segmentation[2] is the process of partitioning a digital image into multiple segments (sets of pixels, also known as super pixels). The goal of segmentation[4] is to simplify and/or change the representation of an image into something that is more meaningful

and easier to analyse. Image segmentation[5] is typically used to locate objects and boundaries (lines, curves, etc.) in images. Image segmentation [6,7] is a set of segments that collectively cover the entire image, or a set of contours extracted from the image (edge detection)[11]. Each of the pixels in a region is similar with respect to some characteristic or computed property, such as colour, intensity, or texture. Some methods are using in to the image extracted for image segmentation [8,9].

There are four methods such as

1. Clustering method [1]
2. Thresholding method
3. Edge detection method [10]
4. Region growing method

The purpose of edge detection is to mark the points in a digital image at which the luminous intensity changes sharply. In Image analysis process to interpret an image, one first must be able to detect the edges of each object in the image. Edge representation of an image significantly reduces the amount of data to be processed, yet it retains useful information about the shapes of objects in the scene.

B) Image Feature Extraction and Detection

The goal of feature extraction[3] is to improve the effectiveness and efficiency of analysis and classification. This may be done by

- 1) Eliminating redundancy in the image data[12,13].
- 2) Eliminating variability in the image data that is of little or no value in classification -even discarding entire images if that is appropriate.
- 3) Restructuring the data (in feature space) in order to optimize the performance of the classifier[14,15].
- 4) Extracting spatial information (texture, size, shape) which is crucial to target identification[16]. That is, one would like to 1) minimize the number (and detail) of the features, 2) maximize pattern discrimination[17].

Conclusion:

The ultrasound methods are used in medical image processing. It can be used to give more information about cancer detection, segmentation and classification. The target area is segmented and the evaluation of this tool from the doctor and this helps the doctors in diagnosis,

the treatment plan making and state of the cancer monitoring.

Future Work:

In future we can improve the efficiency of image. The system can be improved by adapting more segmentation algorithm to suit the different medical image segmentation. Using colour based image segmentation. It is possible to reduce the computational cost avoiding feature calculation for every pixel in the image. Like ultrasound diagnosis tool also use other diagnosis tool to detect cancer and also detected ratio will be estimated easily.

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