

Literature Survey on Analysis of Uterine Contraction

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Abstract:- In this paper we make an effort to search different type research work and Proposed approaches suggested by them regarding uterine contraction, Hilbert-Huang Transform (HHT), which has been used already successfully. And it is useful engineering field. But during the survey there is no unique method to identify the pain occurs for pregnant women is real labor pain or some other hence we are going to study the systems and their results available so that it will be beneficial for others. We study many things like temporal energy of frequency in distribution form for localizing events in time-frequency space.

Keywords:- MMG, EMD, HHT, Uterine Contraction.

I. INTRODUCTION

Experiment conducted for getting different types of extract the contraction locations of a pregnant lady uterine by MMG. Some specified properties of the HHT (1) but when the data collection starts the variable responses are available hence calculation of the frequency at different instants will produce the exact duration of the pain decomposing data into components so-called Intrinsic Mode Functions (IMF) (2) localizing events in time in first step. Here we need an automatic contraction detection in medical science for prenatal examination, so as to save the time duration which is very important for medicos. And naturally error of observation will get reduced, we are implementing automatic contraction detection algorithm.

II. SURVEY OPINIONS

➤ According to Kemal Aydin and Murat Demirel.

Some specified important properties of the HHT are used. Which will go to provide the information on frequency event basis to medical team but when the data collection starts the variable responses are available hence calculation of the frequency at different instants will produce the exact duration of the pain decomposing data into components so-called Intrinsic Mode Functions which is called as IMF [1]

➤ According to the authors Sarwan Kumar 1, Sneha Anand2, Amit Sengupta3.

In this paper for monitoring uterine contraction a real time VI have been design and fetus movement are collected by sensor which are based on MEMS. complete detail of this sensor are discussed. The experimental test has been done by 10 women's in particular duration of pregnancy and age

considered between 20 years to 30 years. Because of new sensor which requires more exploration in data recording of different types of electrical signal in maximum biomedical fields. The sensor also used for health monitoring. It is light in weight. The result gives the narrow zone as well as wider zone may help in diagnostic or remedies for being of the fetus. [2][4]

➤ According to Terrien J., Hassan M., Germain G., Marquet C. and Karlsson B.

They are going to propose the use of a new corrected statistic send from the available surrogate data. They also going to propose a common method for defining a statistical threshold by using the surrogate distribution with respect to give significance for test. By using this method we get exact correct the nonlinear correlation coefficient which is implemented for synthetic and real signals. It means that by using this technique we are getting much better results than previously obtain results. In the case of the synthetic signals the corrected measure which are producing the results that were very closed to the imposed underlying coupling rather than an uncorrected one. In the case of real signals the corrected signals is a solid proof for a physiological phenomenon which is invisible to the uncorrected measure. It will have relevance for reducing a serious problem of public health problem.

➤ According to the research scholars Hassan M., Terrien J., Karlsson B. and Marquet C.

This research is an investigation of spatial synchronization among the uterine via electrical activities by making a use of non linear regression analysis. This gives a very important clue regarding the proof of pregnancy and the labor it define some metrics this is very useful information for the treatment of pregnant lady. Clinical use will reduce the chances of virtual thinking. And predict preterm deliveries.

➤ According to case study of Kemal Aydin

In American countries there are 27% of increment in premature birth since last 20 years. Because of insufficient and effective method use for differentiating between the true labor and the false labor which will cause unnecessary hospital stays and treatment which can be prevented if there is good observations of the uterus dynamics. The research work indicates that labor progress along with electrical activities of the uterus. There has to be a specific pattern in the contractions or coordination which will go to reveal the difference among uterine contractions which will go to lead to delivery and the ones which will don't. for understanding low level activities of uterus, first upon we have

to understand magnetic recordings which is receive from the maternal abdomen it will occupied from Squid Array for Reproductive Assessment which is known as S.A.R.A. system for Medical Sciences. Neural networks are also used to classify those recordings into 2 different groups. 1st group of classes having the signals which include contraction and the 2nd group of signals having the ones which will not include contractions. Wavelet transforms are use for feature extraction of the signal. Uteri.

➤ According to the research of Jean-Luc Gennisson¹, Marie Muller¹, Olivier Ami², Valérie Kohl², Petra Gabor², Dominique Musset², Mickaël Tanter¹.

There are only 3 research material are published which is based on cervix elasticity. The first publish material says that demonstrated the utility of static elate graph for tumor characteristics of the cervix. The 2nd published material one investigates muscular properties of the uterus, shows the tremendous differences in elasticity among the patients. 3rd one is a basic study of the ultrasonic attenuation of cervix, which is based on elasticity. The above three study publications gives qualitative information related to cervix elasticity. The latest work indicates shows feasibility of the technique for elasticity related to the cervix. Such measurements does not require any additional set up, or particular training given by doctor, and can perform while

routine exam of medical. Hence this technique is helpful for obstetricians for getting supplemental parameter. Moreover this preliminary study work indicating that pathological cervix looks like softer as compare to normal cervix. This kind of information is helpful in the case of modified cervix.

➤ According to Malunoud Hassan*, Jer'emy Terrien, Charles Muszynski, Asgeir Alexandersson, Catherine Marque, and Brynjar.

In the benefit of clinical application the nonlinear correlation coefficient has been use to analyzed the relationships among uterine electrical activity which will be a very ideal way for enhancement regarding clinical use of the EHG signal use to monitor during pregnancy as well as labor detection, & predicting PL. In the recording phenomenon of EHG it uses a 4 × 4 electrode which are arranged in matrix shown in figure 1 on the woman's abdomen were used to gather the signals for different analysis. A central observed the details of study and conclude that the correlation analysis is much more advance than the Power spectrum PF to differentiate among labor signals and non labor signals.. Further work planned to compare our results with the mixing among correlation parameters with and the parameters which are based on frequency such as combining PF with the.

III. SENSOR APPLICATION

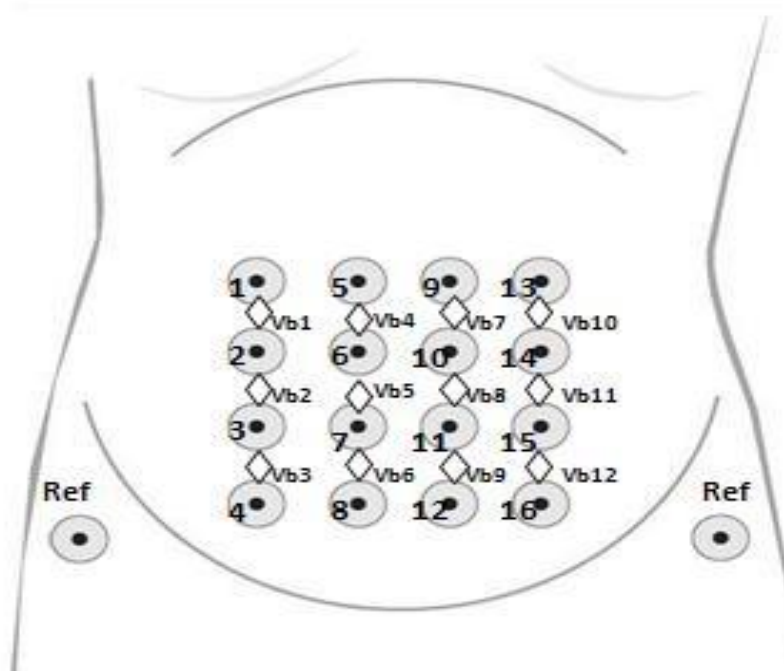


Fig 1:- Complete setup of non-invasively measurement Of the signals

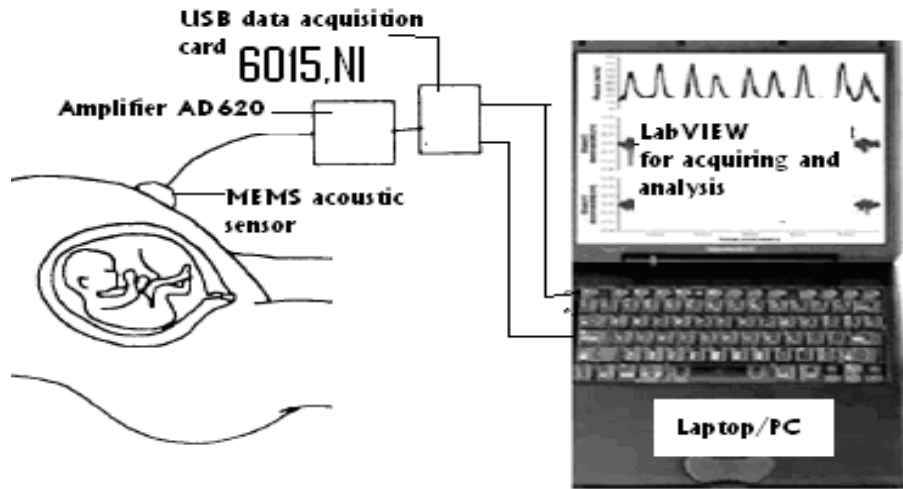


Fig 2:- Electrode configuration on the woman’s abdominal wall. Vbi represent the derived bipolar signals

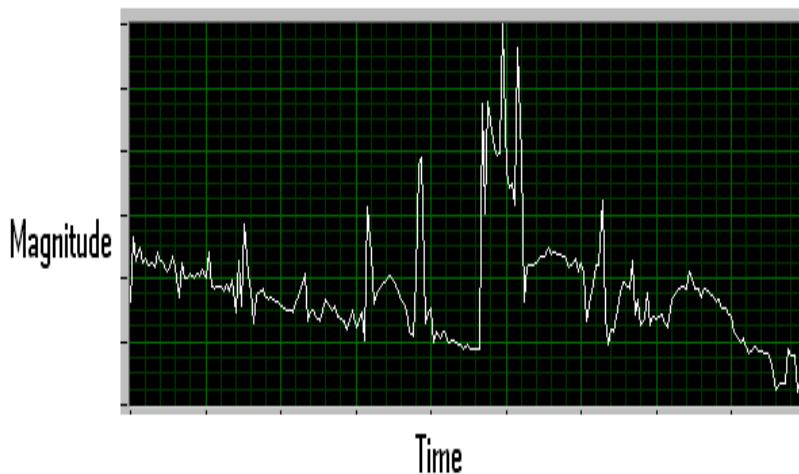


Fig 3:- Front Panel for recording signal from the mother’s abdomen Snapshot of the uterine contractions response

IV. CONCLUSION

From the literature survey we get different activates done by many researcher but still any researcher is not going to find out any concrete solution so as they was going to close for betterment. But true and false statement are not still available for the labor pain of pregnant lady. It means that there is a scope to make more research to get the exact solution and premature birth will get prevented

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