

ULTRASONOGRAPHY AND MODERN DIAGNOSIS

J. Ubee Terna, I. Zenith – Sumy State University, group GP 217
N.O. Simonenko – EL Adviser

Ultrasonography is an imaging technique used very often in the medical field for purposes of diagnosis or evaluation. It is a completely noninvasive procedure that involves the use of high-frequency sound waves to map an image of internal body structures the result of which has brought a revolution in modern diagnoses in medicine.

Ultrasonography like radiography requires intense knowledge on human anatomy for proper location and diagnoses of organs in the human body. It requires the attention of a professional (sonographer) as the appearance of the organs on the screen differs from the normal appearance when seen with the naked eyes.

The discovery of ultrasonography as a diagnostic means has led to a revolution in various medical fields such as obstetrics and gynecology, cardiology, nephrology, hepatology, andrology and urology, to mention but a few. Unlike radiography, no effect such as radiation due to its usage which causes damages to tissues or organs in humans has yet been discovered but it is advised that early fetus should not be exposed much to scanning due to the heat it emits when the rays hit the organs and return to the machine through the transducer. This according to research can be harmful to early developing fetus. Despite this, it's still a more preferable means of diagnosing of soft tissues, organs and the fetus in humans.

In obstetrics, which is one of the main fields which is used as a means of diagnoses, it is used to detect the following;

- to view the appearance and condition of a zygote in the uterus
- to monitor the development of the fetus and detect any abnormalities
- the amount of amniotic fluid present.
- how old the fetus is
- the sex of the baby
- the position of the baby

- to show the expected date of delivery
- ectopic pregnancy

In Gynecology, the use of ultrasonography is also of great importance and can be used to diagnose the following:

- ovarian cysts and masses
- tumor in the uterus
- fluid content in the uterine cavity
- to monitor the size of the uterus
- the position of an intrauterine device (IUD)
- Pelvic inflammatory diseases
- ascites in the pelvis

Furthermore, in hepatology, nephrology and activities involving the abdominal cavity, it can be used to diagnose the following:

- abscesses and calcifications on the liver
- the size of the liver
- abnormalities in the gallbladder such as sludge and its size and fluid content
- to predict future liver problems
- to diagnose acute and chronic ulcer

The secret about ultrasonography which still seems a mystery is how it has made patients especially pregnant women more friendly with the hospital and how eager they are in carrying out their prenatal care. Abnormalities in size and shape of organs are no longer determined by feeling it externally which at times lead to incorrect diagnoses but can be confirmed with viewing it right on the screen living no doubts.

However, current research on ultrasonography and the ultra-high frequency waves which it produces shows that it has some effect on the tissues. Despite this, its importance in the medical field is so great and thus is still recommended as it is the only way of confirming certain abnormalities in human just like x-ray. A hospital with an ultrasound machine is a patient friendly hospital and thus it is recommended that every hospital should have an ultrasound diagnostic unit or as it has continuously proven to be of great importance in our modern world of diagnoses.

New Technology and Modern World: матеріали VII науково-практичної студентської конференції лінгвістичного науково-методичного центру кафедри іноземних мов, м. Суми, 22 травня 2013 р. / Відп. за вип. Г.І. Литвиненко. - Суми: СумДУ, 2013