CASE REPORT

Variation in Ultrasound and CT Scan Interpretation: A Case Report.

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Abstract

Malpractice in medicine is a global health problem. In recent year's medical malpractice was reported in Iraqi community. Good quality information for patients help with decision making, compliance and effective therapy. Medical malpractice is an act or omission by a healthcare provider which deviate from accepted standards of practice in the medical community and which causes injury to the patients. These standards of medical practice are formulated in guidelines that must be followed by healthcare providers. Simply, medical malpractice is professional negligence (by healthcare provider) that causes an injury. This health problem is associated with social and psychological impact on the patient and his filmily. Here I report a case of ultrasound and CT scan misinterpretation.

Keywords: Malpractice, Ultrasound, CT scan, Medico- legal, Sonography training.

Introduction

Malpractice in medicine is a global health problem [1]. In recent year's medical malpractice was reported in Iraqi community [2-4]. Good quality information for patients helps with decision making compliance and effective therapy [5]. Medical malpractice is an act or omission by a healthcare provider which deviate from accepted standards of practice in the medical community and which

causes injury to the patients. These standards of medical practice are formulated in guidelines that must be followed by healthcare providers. Simply, medical malpractice is professional negligence (by healthcare provider) that causes an injury. In some countries the dealing with the medical malpractice is arranged according to certain regulation (law or principles). However, in our society this issue is neglected. The Ethical Medical National Association, High Committee for Medical Colleges Supervision and Iraqi Medical Association started a project at 2000, to develop a regulation for dealing with medical malpractice, but the project dose not completed [1].The survey for medical malpractice claims can help to identify areas where primary healthcare needs improvement [6]. Thus the Ministry of Health should encourage surveys of medical malpractice to build a base line data to determine the problem of negligence in healthcare. Additionally, the survey afforded baseline data that may be a vital tool to determine the training levels of health care delivery profession.

Malpractice is not just an issue of mistakes, but it is with a medico-legal issues. Disease diagnosis in about 2/3 of cases is depending on history and physical examination of patients. However, laboratory investigations, X-ray, Sonography and CT scan confirmed the professional diagnosis of the disease. Medico-legal issues covered all branches of medicine including radiology. In radiology practice, the area of legal liability is the diagnosis errors [7]. Here we report a cognitive type of radiological errors.

Case Report:

A 25 years old male complaining of abdominal colic and went to a radiology clinic to perform ultrasound. The radiologist (Radiology general practitioner, M B Ch B) performed an ultrasound (29th May, 2019) for him and the results are shown in Fig. 1 and 2. The ultrasound radiologist interpretation is (Liver display normal dimension with homogenous fine texture, smooth outline, 10.4 cm thin wall unilocular simple cyst seen at left lobe just under diaphragm dome, mostly ecchinococcal type {hydatid}, normal hepatic and portal vessels architecture). Chest X-ray exclude presence of cysts in the chest, Fig 3.Liver functions test and blood test are normal, Figs. 4-6.

He consulted a general surgeon and advice him to perform CT scan and referred him to a special radiologic centre. The CT scan performed on 1st June, 2019 and the result as shown in Fig 7. The radiologist (Arab and Jordanian boards in diagnostic radiology, European Diploma in diagnostic radiology, M Sc in radiology) interpretation [There is an oval shaped thick walled unilocular cyst seen at the midline of the upper abdomen measuring 14.6 X 11.6 cm in cross section located between the inferior border of the left lobe of the liver and the lesser curvature of the stomach with clear surrounding fat planes, findings are mostly representing a hydatid cyst, less likely to be a mesenteric cyst]. Although the patient is male but the radiologist mention in his report [Normal uterus and both ovaries].

The patient consulted 4 general surgeons (work in Iraq) and another 4 specialist radiologist (2 works in Iraq, 1 UAE, and 1 Bahrain).

- Two general surgeons interpreted CT scan as either HYDATID or Mesenteric cyst. However, then gave a diagnosis of HYDATID and gave him Mebendazole 200 mg tablet twice daily for 1 month.
- One general surgeon interpreted the CT scan as intrahepatic HYDATID cyst and gave him advice a surgical treatment.
- One general surgeon interpreted the CT scan as a MESENTERIC cyst located between the left live lobe and stomach.

- While the 4 radiologist interpreted the CT Scan as follow:
  - ▪ One diagnosed the case as MESENTERIC cyst.
  - ▪ One diagnosed the case as two cystic lesions within liver parenchyma, no solid component, mostly hydatid cyst.
  - ▪ One diagnosed the case as left liver lobe hydatid cyst with pancreatitis and pancreatic cyst.
  - ▪One diagnosed the case as liver hydatid cyst.

On 14th, July, 2019, an ultrasound performed [Fig 8] by a specialist radiologist (Arab, Iraqi and Jordanian boards in diagnostic radiology) and ultrasound interpreted as (There is 13 X 10 cm unilocular cyst in the epigastric region without solid element or calcifications. Its origin is not clear. It could be arising from the liver or GIT mesentery). According to these ultrasound findings, two general surgeons advised him to continue on Mebendazole for another month.

On 4th September, 2019, Laparotomy performed [by the general surgeon who insisted that the diagnosis case is intrahepatic hydatid cyst depending on CT scan] and intrahepatic HYDATID cyst was removed.

Discussion

The interpretation of CT scan and ultrasound by general surgeons and diagnostic radiologists varied and it was confusing for the patients. Of 7 radiologists, 4 agreed as the lesion is hydatid cyst, one is insisted that the lesion is mesenteric cyst, while 2 suggested that it is either hydatid or mesenteric cyst. Unfortunately, 2 of the radiologists gave a wrong location for the cyst. Of the 4 general surgeons, one insisted that it is hydatid cyst, 1 insisted that it is mesenteric cyst, while 2 think that it was either hydatid or mesenteric cyst.

In this case the general surgeons are not blamed because their diagnosis is depending on the radiologist's interpretation reports. Of the 7 radiologists, 3 [43%] of them gave information that mislead the diagnosis by the general surgeons. What is underlying cause for such high rate of wrong diagnosis?

Berlin [2001] [8] stated that radiologic errors of two types, perceptual and cognitive errors." The perceptual errors or the radiologic miss, are one in which a radiologic abnormality is not seen by the radiologist on initial interpretation. The cognitive errors are those in which an abnormality is seen but its nature is misinterpreted. Perceptual errors form the most common radiologic errors forming 80% and termed as false-negative errors [7].

Perceptual errors maybe attributed to lack of knowledge, limitation inherent to the diagnostic test, faulty reasoning, and non-communication with the referring physician, inadequate exposure, no adequate clinical information available, under reading, observer alertness, fatigue and workload, distracting factors, duration of observer task, conspicuity of abnormality and other factors [8-11].

The misinterpretation in this case is a cognitive type as the entire radiologist saw the abnormality but with varied interpretation. Why? The misinterpretation mainly attributed to inadequate training.

Misinterpretation and giving a wrong diagnosis by the radiologist mislead the general surgeon and may be accepted in ultrasound interpretation but not that CT scan.

Radiological errors may increase morbidity and mortality rate and associated with social and economical burden on patient families.

In conclusion, 43% of the radiologist gave misinterpretation for this case and this rate is high which may affect the patient health.

Recommendation

1. Proper radiologic training.
2. Establishment of radiologic sub-specialties in Iraqi, Jordanian and Arabic board in radiology.
3. Health care system practicing should be admitted to establishment of supervision after board graduation for at least one year under a consultant radiologist.

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