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Immaculate Conception in Trauma: The Importance of History, Physical Examination and Bedside Investigations in Detecting Pregnancy

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Abstract: *Detection of early pregnancy in an injured patient remains a constant diagnostic challenge to emergency care providers (ECP) as history taking and physical examination may be insufficient for diagnosis. An emergency care provider working in a busy emergency department can easily miss the diagnosis of pregnancy, resulting in exposure of the fetus to radiation that may be detrimental. Early detection of pregnancy will allow ECP to take necessary steps to minimise the radiation exposure to both the mother and fetus in the course of managing the injured patient. Management of this group of patient will be more challenging if it involves teenage pregnancies, which has social considerations and medico-legal consequences. It is vital to properly assess all injured women of child bearing age in the emergency department (ED) to detect pregnancy as it will affect their management. A proper menstrual history and abdominal examination combined with bedside investigations are pertinent and important before imaging is performed.*

Keywords: *Emergency department, Fetal radiation, Missed Diagnosis, Teenage pregnancy*

I. Introduction

Trauma affects up to 8% of all pregnancies and is a common cause of non-obstetric maternal morbidity and mortality[1]. In management of obstetric trauma patients, detection of unknown pregnancies is frequently missed especially in the first trimester. The diagnosis of pregnancy is not easy in patients who present to a busy Emergency Department (ED) with complaints that are not necessarily suggestive of pregnancy and history taking and physical examination may not be sufficient to detect early pregnancies[2, 3]. Moreover, the ECP may take short cuts and not properly assess the patient's abdomen for a gravid uterus.

Frequently in ED setting, historical information regarding menses and sexual activity is either not obtained, incomplete or inaccurate. Additionally, unmarried ladies might not be forthcoming regarding their pregnancies. The failure to diagnose pregnancy in trauma management may result in unnecessary exposure to radiation during imaging procedures that includes plain x-ray, plain CT scan or contrasted CT scan. There was no single diagnostic procedure resulting in a radiation dose that threatens the wellbeing of the developing embryo and foetus, however exposure to as little as 1 or 2 rad has been associated with a slight increase in childhood malignancies, especially leukaemia[6]. Although the radiation risk is negligible at 5 rad but risk of malformations is significantly increased above 15 rad[8].

II. Case report

A 15-year old female was brought in to ED after a motor vehicle accident. She was a pedestrian hit by a motorcycle from behind and was thrown into a drain. On arrival, she was fully conscious and complaining of lower back and bilateral hip pain. The pain score was 8/10 and she was unable to weight bear. There was no loss of consciousness, neck pain, chest pain or abdominal pain. Her last menstrual period (LMP) was seven days prior to incident. Her vital signs were stable and the primary survey was cleared. There was tenderness over the lumbosacral area with reduced range of motion (ROM) of bilateral hip due to pain. Otherwise, other examinations were initially reported as normal. She was given IM ketorolac 10mg and sent for imaging for pelvic and lumbosacral x-rays. The radiographer called back to inform that foetal skeleton was seen in lumbar-sacral and pelvic x-rays (Figure 1 and 2).

Fig 1: Lumbosacral x-ray showing foetal skeleton image.

Fig 2: Pelvic x-ray showing foetal skeleton image

On further questioning, patient reluctantly revealed that she was abducted several months ago after taking a drink with a friend. She denies any sexual encounter/assault. No police report was made. Subsequent months, she reported irregular menses and was given some medication by her general practitioner to induce her menses, after a negative urine pregnancy test. A second examination of her abdomen revealed a gravid uterus confirmed by a bedside Ultrasound done in ED that showed a viable singleton foetus at 22-week period of gestation. She was subsequently referred to gynaecologist, social worker and counsellor for further evaluation and management.

III. Discussions

It has been shown that an estimated 3% of trauma patients who undergo diagnostic imaging were pregnant and 0.3% may have unidentified pregnancies at the time of exposure[6]. The diagnosis of early pregnancy can be difficult as history and physical examination may not be confirmatory in diagnosing pregnancy[2].As illustrated in our case, the ECP sent the patient for x-ray imaging without detecting the pregnancy. The patient was either unaware herself or had reasons to conceal her pregnancy. However, the ECP did not initially assess the abdomen properly and only detected a gravid uterus on a repeat abdominal examination. This may be due to the fact that patient reported her LMP was 7 days ago. Further questioning would reveal that her menses were irregular in the last few months, and this may have triggered the ECP to suspect pregnancy.

The outcome of radiation exposure in this case is favorable as the fetus is most vulnerable to radiation only during the first 15 weeks of gestation[9]. An average effective dose of single abdominal and pelvic radiograph is 0.7mSv[8]. Even though the radiation risks to the fetus are small compared with the risk of missed or delayed diagnosis of trauma[6], personal protective equipment, (e.g. lead gown) is advised for pregnant women when the position of the uterus is in the direct x-ray beam[9]. The risk to the embryo or fetus have not been observed for intellectual disability, birth defects, growth restriction, neurobehavioral effects, impaired school performance, convulsive disorders, or embryonic or fetal death below an effective dose of 100 mSv[8].

IV. Conclusions

All women with child bearing age should be risk stratified and considered pregnant until proven otherwise when they seek treatment for trauma at ED. This case emphasized the importance of a proper history taking, which includes menstrual history, and a complete physical examination of the gravid uterus, before the patient is subjected to investigation that involves radiation. Adjunct bedside ultrasound and urine pregnancy test should be performed as part of the primary survey.

References

[1]. Einav S, Sela HY, Weiniger CF. Management and outcomes of trauma during pregnancy. Anesthesiol Clin. 2013; 31(1):141-56.
[2]. Barraco RD, Simon BJ, Weiss PM, Chiu WC, Clancy TV, Como JJ, et al. Practice management guidelines for the diagnosis and management of injury in the pregnant patient: the EAST practice management guidelines work group. The Journal of Trauma. 2010; 69(1):211-214.
[3]. Causey AL, Seago K,Wahl NG, Voelker CL. Pregnant adolescents in the emergency department: diagnosed and not diagnosed. Am J Emerg Med. 1997 Mar; 15(2):125-9.
[4]. American College of Radiology. Guideline for imaging pregnant or potentially pregnant adolescents and women with ionizing radiation. Am Coll Radiol. 2008; 26:23–37.
[5]. National Council on Radiation Protection and Measurements. Preconception and prenatal radiation exposure: Health effects and protective guidance, Report No.174. 2013.
[6]. Australian Radiation Protection and Nuclear Safety Agency, 2008. Radiation protection in diagnostic and interventional radiology; Radiation protection series RPS 14.1. 2008.