Specialist and general emergency room: from "A to Z" case series of possible misdiagnosis due to the influence of gender

To the Editor,

Gender medicine is an important achievement of the last years. Nevertheless, in the emergency room (ER), women are often referred to gynaecologists even with problems related to other specialities or organ systems, because of their gender. We wanted to focus on the importance of not underestimating the difficulties encountered in general and specialist ERs, taking into account that no physician can be experienced in all fields and cannot know all the typical or atypical presentations of all pathologies.

A routine request for gynaecological counselling is: "I have in the ER a woman with almost certain diagnosis of appendicitis/pancreatitis/or … but I'd rather you evaluate the uterus and the annexes for differential diagnosis". Patient gender and a crowded general ER often lead to a reference to gynaecologist directly, without further examinations. Moreover no one can be experienced in all fields; therefore, especially with the onset of atypical symptoms, an emergency diagnosis can become a real challenge, both for gynaecologists and for colleagues in other disciplines (1,2). This not rare (1,2), as highlighted in our summary report, and may be the result of direct and indirect experience acquired over the years in different hospitals and settings.

1. Pathologies of other branches, referred directly to the obstetrics and gynaecological emergency room

All the cases summarized below were referred directly for gynaecological evaluation, either because of the pregnant state or simply because the patient was female.

Patients from"a to g" were referred just for pregnancy state.

a) Twenty-six-week pregnant woman complaining of confusion.

Diagnosis: Central nervous system stroke, detected by tomography, performed only after gynaecologist's insistence. The radiologist was frightened of potential risks to the foetus.

b) Twelve-weeks pregnant woman with toothache.

Diagnosis: Dental sepsis, treated with a maxillofacial surgery.

c) Thirty-seven-week pregnant woman with toothache, wearing veil and presenting with language barrier.

Diagnosis: Dental abscess treated with urgent tooth extraction and drainage of submandibular abscess.

d) Twelve-week pregnant woman complaining of sensory impairment.

Diagnosis: Cerebellar haemorrhage, diagnosed and treated only thanks to the presence of an experienced anaesthesiologist and gynaecologist in the gynecological ER.

e) Thirty-week pregnant woman with paraparesis of lower extremities, and had landed recently from Africa.

Diagnosis: Vertebral fracture related to bone tuberculosis, diagnosed by a standard X-ray.

f) Ten-week pregnant woman brought to ER by ambulance following car accident.

Diagnosis: Polytrauma. Nevertheless, the first evaluation was assessment of the pregnancy.

g) Eight-week pregnant woman involved in a road traffic accident.

Diagnosis: Bleeding secondary to pelvic fracture. The orthopedist postponed emergency surgery after pregnancy assessment.

Patients from "h to n" were referred to the gynaecologist only because they were female gender or due to recent obstetric or gynaecological diagnoses.

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h) Thirty-five-year-old woman with acute rectal and perineal pain and paraesthesia of the lower limbs.

Referred to gynaecologist due to a recent C-section.

Diagnosis: Dissection of the internal iliac artery diagnosed with a computed tomography scan.

i) Forty-two-year-old woman with haemorrhagic shock, following an accident.

Referred first to the gynaecologist to suture a perineal lesion with slight bleeding.

Diagnosis: Pelvic fracture treated with embolization.

l) Forty-five-year-old women, anaemic and sleepy.

Referred to the gynaecologist for moderate vaginal bleeding but with severe anaemia (hemoglobin 6.6 g/dL).

Diagnosis: Advanced stage of haemolytic uremic syndrome, diagnosed by an older and experienced gynaecologist.

m) Sixty-eight-year-old woman complaining of worsening leg pain.

Referred to the gynaecologist for personal history of gynaecological cancer and chemotherapy.

Diagnosis: Leg ischaemia that required urgent positioning of stent.

n) Eighteen-year-old woman with neurological impairment; relatives who brought her reported severe asthenia, menstrual irregularities and metrorrhagia.

Referred to the gynaecologist for reported menstrual irregularities with metrorrhagia, not present at the time of access.

Diagnosis: Fulminant acute lymphatic leukaemia.

2. Gynaecological-obstetrical cases, misdiagnosed by other specialists

o) Twelve-week pregnant woman with intrauterine gestation with haemorrhagic shock.

Suspect: The surgeon detected abundant free fluid in the abdomen, which was referred to gastrointestinal disease, therefore a laparoscopy was performed.

Diagnosis: Heterotopic pregnancy, carried out by the gynaecologist who was called for consultation in the operating room.

p) Twenty-seven-year-old women with gastrointestinal symptoms associated with lipothymia. She also presented with amenorrhea.

Suspect: She was evaluated for gastrointestinal disease.

Diagnosis: Extrauterine pregnancy with atypical presentation; the gynaecological examination was requested after some delay, following exclusion of other pathologies.

q) Twenty-six-year-old woman with hypovolemic shock with a menstrual delay.

Suspect: Other causes of shock.

Diagnosis: Rupture of ectopic pregnancy; the gynaecological examination was delayed, again because of prior exclusion of other pathologies.

r) Thirty-two-weeks pregnant woman with abdominal pain after Easter lunch.

Suspect: The surgeon thought of indigestion and did not focus on blood pressure of 160/100 mmHg, thinking that the increase in blood pressure was caused by pain.

Diagnosis: HELLP syndrome detected at obstetric assessment that was only requested just before discharge.

s) Thirty-five-week pregnant woman complaining of malaise. Blood pressure was 140/90 mmHg.

Suspect: Other system disease.

Diagnosis: Preeclampsia diagnosed by gynaecological evaluation that was only requested after changes in blood test results.

t) Puerpera 7 days after delivery with visual changes.

Suspect: The ophthalmologist discharged her without any particular indication.

Diagnosis: Post-partum preeclampsia complicated by a posterior reversible encephalopathy syndrome, diagnosed after a second accessment, a few hours later for worsening headache. At that time, the blood pressure detected was 150/100 mmHg and a gynaecological evaluation was requested.

u) Thirty-seven-year-old woman with abdominal pain and lipothymia. She reported amenorrhea for 6 months.

Suspect: Gastrointestinal disease.

Diagnosis: Abdominal pregnancy at 17 weeks, diagnosed by the gynaecologist, called for hemoperitoneum.

v) Puerpera 4 days after delivery with seizure.

Suspect: Epileptic attack not responsive to antiepileptic administration.

Diagnosis: Eclampsia in puerperium.

z) Thirty-weeks pregnant woman with poor hemoperitoneum after a minor abdominal trauma due to lose of consciousness.

Suspect: Epileptic attack with abdominal trauma, suggesting abdominal bleeding. Since the patient arrived by ambulance she was unconscious. Therefore, a diagnostic laparotomy was carried out under general anaesthesia to find the origin of bleeding.

Diagnosis: Hemorrhagic stroke related to misdiagnosed eclamptic attack. The diagnosis was made by the gynaecologist, called to carry out a simultaneous emergency caesarean section.

Our report emphasizes the inability for a doctor to formulate a proper differential diagnosis in all systems, even more so in case of atypical symptoms, with a high-risk of diagnostic errors. This overlap of symptoms is present in all fields. Therefore, the obstetrics-gynecology ER presented particular difficulties in

being the referral site only when considering female gender or the state of pre-existing pregnancy; in contrast, the general ER reported rare and specific gynaecological complications.

Although during the course of university studies, all future doctors study emergencies in different specialist fields, without continuous re-training, the diagnostic aptitude may be lost, especially for rare diseases. Moreover, in cases of rare diseases or atypical symptoms, misdiagnosis may even more likely.

Other studies have tried to understand and reduce ER diagnostic and clinical errors, even if no specific strategies have been reported yet (1,2). Thus, we would like to share this "a to z" summary of cases to focus on some basic, but frequently forgotten points.

1) In a road traffic accident involving a pregnant woman, the woman must always be evaluated and treated first, even before a pregnancy assessment. The foetus may be saved thanks only to appropriate care given to woman.

2) Septic diseases during pregnancy can be severe and rapidly progressive and any system or body location may be involved.

3) Pre-eclampsia and eclampsia may affect second and third trimester and puerperium. All doctors should pay attention to blood pressure.

4) Extra uterine pregnancy may present with atypical symptoms and remain a life-threatening emergency.

We understand that our report does not analyse a specific approach or scheme to reduce these risks. Our aim was to focus attention on the need for continuous training and implementation of the skills of doctors working in a first aid position, the various ERs, not only in a specific speciality. Regular attendance in the general ER and the possibility to follow additional lessons, given by all physicians working in the field of emergency, on all life-threatening events, with both typical and atypical presentations, would help specialists to obtain adequate and continuous training. Moreover, the acquisition of skills by young doctors doing on-call shifts alongside colleagues of greater experience may encourage the sharing of a wealth of unwritten knowledge acquired over time and prevent the situation of "not written, not known".

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