

## Vaginal bleeding in early pregnancy

Vagina bleeding in early pregnancy is very distressing for expecting parents. It is fundamental therefore that clinicians approach patients in a sensitive and respectful manner addressing their concerns, providing clear information and a management plan to ensure the safe continuation of pregnancy.

The focus of this article is to look at possible differential diagnosis of bleeding in early pregnancy. It is important to highlight that a draft NICE guideline is currently in consultation regarding the management of early pregnancy bleeding and pain and will eventually provide clear guidance on the management of these patients within clinical practice.

### Definition:

Defined as pregnancy loss within the first twelve weeks of pregnancy (1). Multiple definitions, with varying time differences exist and this can lead to confusion with regards to a definition of early pregnancy loss.

### Epidemiology:

Early pregnancy bleeding is relatively common affecting 1 in 5 confirmed pregnancies. In 50–60% of these cases the women will go on to have a normal pregnancy (3). Bleeding prior to the 24<sup>th</sup> week of pregnancy may be caused by implantation bleeding, spontaneous abortion, ectopic pregnancy, trophoblastic disease and lesions of the cervix or vagina (2).

Comparison studies have demonstrated a correlation between light bleeding in early pregnancy and the onset of pre-eclampsia, preterm birth and placental abruption. They also demonstrated a link between heavy bleeding and loss of pregnancy before 24 weeks and the outcome of the study was that there is an association with the severity of bleeding and the outcome of pregnancy (4).

### Differential Diagnosis:

#### 1. Ectopic Pregnancy

An ectopic pregnancy should be considered as a cause of vaginal bleeding in all women of child bearing age particularly if it is associated with pain. Additional differentials for pain and bleeding include: appendicitis, ovarian cyst, infection, and threatened miscarriage (5).

Ectopic pregnancies usually present at 6–9 weeks gestation and is caused by the abnormal implantation of the blastocyst outside of the uterine cavity (5).

Risk factors for ectopic pregnancy include: Increased maternal age, previous ectopic, tubal surgery, previous PID or STI, Intrauterine contraceptive Device (IUCD) or assisted conception techniques (2).

Signs: Shock, increased heart rate and decreased blood pressure, unilateral iliac fossa pain,

Investigations: confirm pregnancy through  $\beta$ hCG, full blood count as well as group and save,

Management: usually surgical with a laparoscopic/open salpingectomy/salpingostomy or Oophorectomy. Samples should be sent for histology. In the non-acute scenario – high single dose of methotrexate may be offered with follow-up HCG levels.

## 2. Spontaneous Abortion

10–15% of all pregnancies are lost before 20 weeks and spontaneous abortion refers to the complete loss of a pregnancy prior to 24 weeks. Approximately 80% of pregnancies will occur before 12 weeks, with the rest occurring between 13 and 24 weeks. There are many causes of spontaneous abortion; however the majority of early pregnancy losses are due to anembryonic pregnancies and or ova with serious genetic faults (2).

Spontaneous abortion can be sub classified into:

- a. Threatened abortion: Painful or painless bleeding, the cervical os remains closed. Conservative treatment including bed rest is favoured.
- b. Inevitable abortion: The cervical canal is open. Blood loss may be heavy and the mother may present with signs of shock.
- c. Missed abortion or early foetal demise: may be evidence of blood stained or brown loss.
- d. Recurrent miscarriage: term used for 3 or more consecutive miscarriages.
- e. Induced abortion

Management of abortion may be medical, surgical or expectant. Early pregnancy loss is easier to detect due to advances in ultrasound meaning that individual management can be individualised to each patient (6).

## 3. Gestational Trophoblastic Disease

Gestational Trophoblastic Disease refers to a spectrum of pregnancy related tumours both benign and malignant.

Hydatiform mole: Benign Neoplastic disease, due to an abnormal growth of the trophoblast, and proliferation of the chorionic villi, which then become avascular. Management involves suction and curettage to evacuate all diseased tissue.

Placental Site tumour: Can be very difficult to diagnose, and patients may only have raised hCG and vaginal bleeding. These tumours are rare.

Choriocarcinoma: Patients present with persistently raised hCG and vaginal bleeding. This tumour responds very well to chemotherapy (2).

#### **4. Implantation bleeding**

Implantation bleeding occurs as the syncytiotrophoblast erodes the maternal endometrium, around day 6–7. By day 10 the blastocyst is fully encased within the decidual layer and this event occurs just prior to menstruation. Women may therefore perceive this process as a short menstruation. After full implantation this bleeding usually resolves (4).

#### **5. Cervical erosions (ectropion)**

Cervical ectropions are due to a change in the normal cervical epithelium from the normal columnar epithelium found in the cervical canal which is then replaced by stratified squamous epithelium found in the vaginal portion. It is thought to be exacerbated by the oral contraceptive pill and pregnancy as a result of changes in oestrogen levels. Those with lesions may find that they bleed in the initial stages of pregnancy when oestrogen levels are fluctuating (7).

#### **6. Carcinoma of the Cervix**

Cervical cancer causes vaginal bleeding, particularly after sex. It is caused by the Human Papilloma Virus (HPV), which can now be vaccinated against. If diagnosed during pregnancy treatment may depend on the type, stage of cancer and also on the stage of pregnancy.

Cervical Intraepithelial Neoplasia (CIN): When cervical smears are carried out during the antenatal period 1 in 200 expectant mothers would be identified as having some degree of abnormal cell changes. If likely to be CIN, treatment can occur after delivery after assessment by colposcopy (5).

#### **7. Polyps of the cervix**

Cervical polyps are benign overgrowths of the cervix which due to the increased vascular supply during pregnancy may cause vaginal bleeding. They can normally be visualised on speculum examination (2). If troublesome can be removed at colposcopy or in the gynaecology outpatient clinic.

#### **8. Vaginal and Cervical infections**

Vaginal infection with monilia is also known to be a cause of vaginal bleeding in early pregnancy (5). Or infection with any STI.

#### **9. Blood disorders**

Maternal blood disorders including; blood dysplasia, Von Willebrands disease or leukaemia may rarely cause vaginal bleeding in early pregnancy and should be considered when other differentials have been explored (5).

**Management:**

- 1) Ensure women is assessed in ABC fashion
- 2) Establish venous access and that a FBC and G&S have been taken (as minimum)
- 3) Take history any precipitating factors e.g. sexual intercourse, abdominal trauma
- 4) Establish obstetric history e.g. risks of ectopic pregnancy, STI, previous miscarriage
- 5) Regular observations
- 6) Vaginal examination with speculum to directly visualise cervix – may visualise an ectropion/source of bleeding or be able to establish whether cervical os is open or closed. This will also enable you to take swabs to exclude infection as a cause
- 7) Bimanual examination may help to establish presence of an adnexal mass e.g. ectopic pregnancy (may increase risk of rupture, so avoid if you highly suspect an ectopic pregnancy)
- 8) USS to establish cause of bleed and establish fetal viability
- 9) Well, haemodynamically stable patients with minimal pain and bleeding can be safely discharged home with written advice on what to do if symptoms increase – they can be seen in an EPAC (Early Pregnancy Assessment Clinic) asap
- 10) Unwell, haemodynamically unstable patients, with heavy pain, bleeding or very emotionally distressed benefit from admittance for observation, pain relief, urgent USS +/- urgent laparoscopy if an ectopic pregnancy
- 11) Offer all women with confirmed miscarriage bereavement advice and support

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