

ORIGINAL ARTICLE

Does speculum examination have a role in assessing bleeding in early pregnancy?

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Objectives: To assess to what extent a speculum examination after a bimanual examination influences the accuracy of diagnosis and subsequent management of women with bleeding in early pregnancy in an accident and emergency (A&E) department.

Method: A prospective study over a five month period included women presenting to A&E with vaginal bleeding at <20/40. Exclusion criteria were haemodynamic instability or known cervical carcinoma. The clinician recorded a diagnosis and management plan on a standard questionnaire after bimanual examination and after subsequent speculum examination.

Results: 236 women were included in the study. Of these, a total of three (1.3%) had a change of management plan and 10 (4.2%) patients had a change of diagnosis after speculum examination.

Conclusion: The results suggest that speculum examination contributes to a minority of management decisions. The need for speculum examination should be assessed on a case by case basis depending on whether the findings on bimanual are conclusive.

Vaginal bleeding is common in early pregnancy. Up to 20% of pregnant women will have vaginal spotting or heavier bleeding. Of these, about half will go on to abort.^{1,2} Box 1 lists other causes for vaginal bleeding in early pregnancy.

Pregnant women with vaginal bleeding frequently attend accident and emergency (A&E) departments. Over 90% of A&E departments see women with bleeding in early pregnancy.³ Some hospitals have standard guidelines for managing these patients.^{4,5} In the initial assessment of the pregnant patient (<20/40) many authors recommend both bimanual and speculum examinations to assess the cause of the bleeding and the state of the os.^{1,6–9}

Bimanual examination should differentiate patients into those with threatened abortion, incomplete abortion, and inevitable abortion based on the state of the cervical os.⁶ It permits assessment of motion tenderness that may suggest ectopic pregnancy, endometritis, or possible septic abortion.^{2,10} It will also identify adnexal tenderness and masses that may suggest ectopic pregnancy or cyst abnormality.⁵

Speculum examination gives additional information as it enables a visual inspection of the vagina and cervix. It also permits an important intervention, the removal of endocervical products of conception in the shocked patient. A speculum examination arguably takes additional time, equipment, and expertise. It may be uncomfortable and stressful for the patient, especially when performed by an A&E SHO who is unlikely to have postgraduate training in gynaecology.^{4,5} Patients may also worry about the safety of the fetus. As a general principle, it is ethical to advise a patient to undergo an invasive examination only if useful information (such as would change diagnosis or management) will be obtained.

This study was performed to assess whether diagnosis and management were influenced by the results of a speculum examination, performed after a bimanual examination in pregnant patients (<20/40) presenting to an A&E department with vaginal bleeding.

METHOD

A prospective study was carried out over a five month period, on all pregnant women <20/40 with vaginal bleeding,

Box 1 Causes of bleeding in early pregnancy

- Cervical lesions
- Decidual reaction of the cervix
- Ectopic pregnancy
- Hydatidiform mole
- Physiological bleeding
- Polyps
- Spontaneous abortion
- Vaginitis

Box 2 Inclusion criteria

- Positive urine β human chorionic gonadotrophin
- History of vaginal bleeding
- <20/40 by dates/scan
- Pulse rate >60/min and <100/min
- Systolic BP >90 mm Hg
- No known carcinoma of the cervix

presenting directly to the A&E department at a central London teaching hospital.

Patients had to meet all criteria listed in box 2 for inclusion in the study.

Table 1 Change of management after speculum examination

Initial plan	Plan after speculum examination	Total number	Percentage
Ultrasound	Gynaecology referral	3	1.3

Table 2 Diagnostic changes after speculum examination

Initial diagnosis	Diagnosis after speculum examination	Total number	Percentage
Threatened abortion	Inevitable abortion	7	3.0
Missed abortion	Threatened abortion	1	0.4
Inevitable abortion	Threatened abortion	1	0.4
Unknown diagnosis	Inevitable	1	0.4

Women who were haemodynamically unstable, or with known carcinoma of the cervix were excluded from the study.

The clinician recorded a diagnosis and management plan on a standard questionnaire (for full questionnaire see

journal web site, <http://www.emjonline.com/supplemental>) after completing the bimanual examination and subsequently after speculum examination. The results were analysed to assess whether the diagnosis and management were changed after speculum examination.

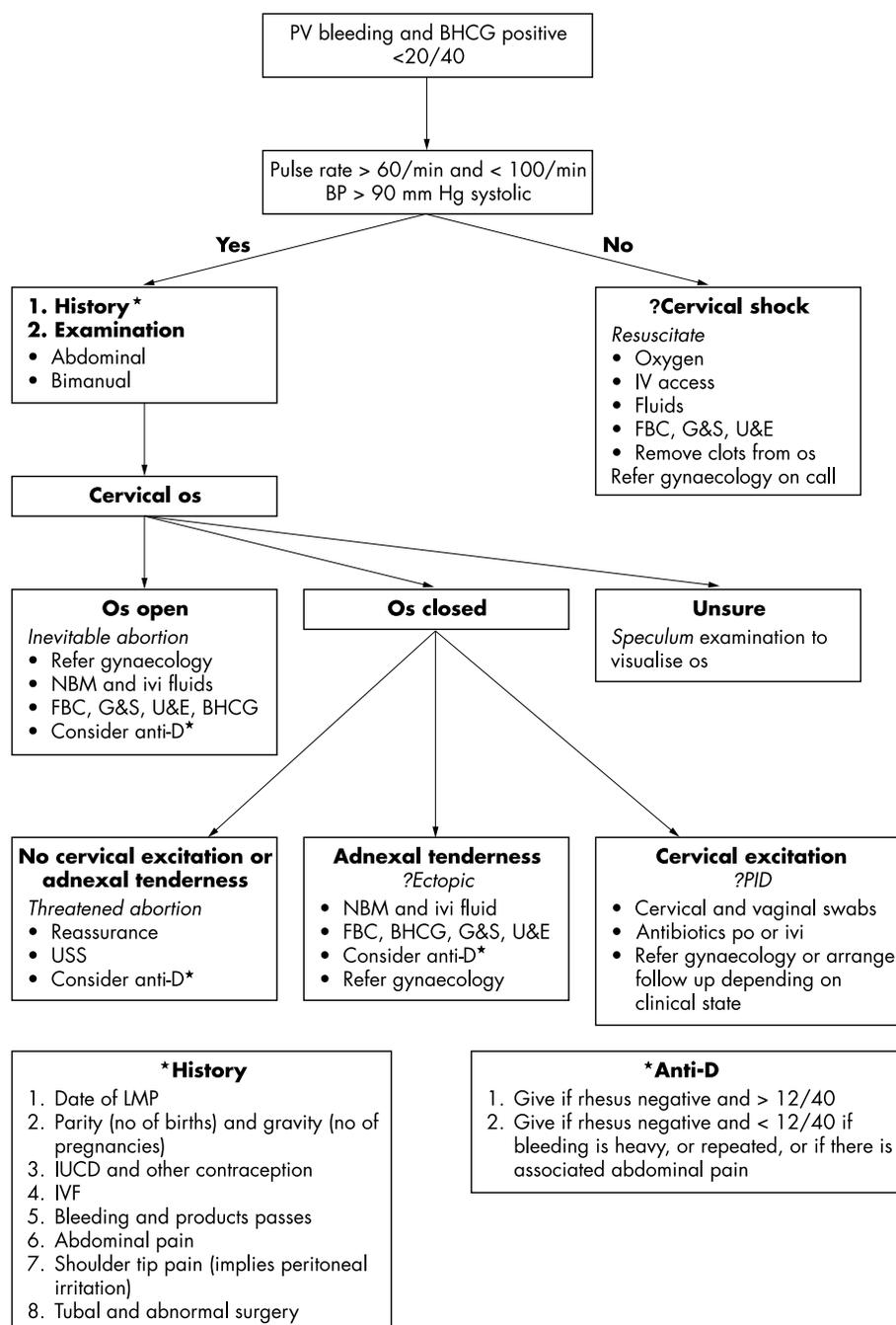


Figure 1 Clinical care pathway for vaginal bleeding in early pregnancy. (Do not do a vaginal examination on a woman >20/40 with bleeding.)

RESULTS

Altogether 313 women seen at Chelsea and Westminster Hospital between 1 September 2001 and 5 February 2002 met the inclusion criteria. A questionnaire was completed on 240 (77%) of these and analysis performed on 236 (75%).

Four women were withdrawn from analysis because they had had an incomplete examination. Two of these patients refused speculum; one had a cord prolapse visible on speculum and one was in too much pain to be examined.

Three women (1.3%) had a change of management (table 1). In these, the plan after bimanual was to refer to ultrasound but then, after speculum they were referred to a gynaecologist. The first was noted to have an open os and products visualised on speculum. The second revealed amniotic fluid on speculum examination. The third was referred because of patient preference.

Ten women (4.2%) had a change in diagnosis (table 2). In seven the diagnosis of threatened abortion was changed to one of inevitable abortion. In four of these, the examining doctor was unsure of the state of the os on bimanual. In two cases the products of conception or blood clot were seen and removed from the vagina. In the final case amniotic fluid was seen during the speculum examination.

The other three women with a change in diagnosis were as follows. A diagnosis of missed abortion changed to threatened abortion in a patient of 15/40 who had an appropriate fundal height for dates. This possibly shows a lack of understanding of the definition of a missed abortion by the doctor. In another, the clinician was not able to decide on a diagnosis on bimanual, but diagnosed an inevitable abortion after examination with the speculum. The final diagnostic change was an inevitable abortion changed to threatened abortion.

Twenty three per cent of women fitting the criteria were missed at presentation and consequently did not have a questionnaire completed, representing a 77% recruitment and compliance.

DISCUSSION

The results suggest that speculum examination contributes to a small minority of management decisions. It could therefore be limited to those patients in whom it will make a difference to outcome.

The speculum contributes to diagnosis and management when the clinician is unable to assess the cervical os by bimanual examination. This was most important for the differentiation between threatened and inevitable abortion. The uncertainty may be attributable to lack of experience of the attending clinician, the position of the uterus, or possibly patient discomfort and anxiety. If the os cannot be properly assessed on bimanual, a speculum permits a more accurate diagnosis that may lead to a change in the management plan. It is important for the patient to have an accurate working diagnosis as her anxiety may be alleviated and ultrasound may not be always be immediately available or even necessary.^{7 11}

In this series, when ectopic pregnancy was diagnosed on bimanual the subsequent speculum examination made no difference to diagnosis or management. This suggests that a speculum examination may not be necessary in women with a clinical diagnosis of ectopic pregnancy. This is in agreement with previous studies.⁸

We acknowledge that there are other causes of vaginal bleeding in early pregnancy, which are both rare and serious. Of particular concern is cervical carcinoma, which may be identified by a competent speculum examination. However,

in this study of 240 women a non-pregnancy related cause was not evident.

Another important point is that of junior doctors' training. The reduction in junior doctors' hours has had a direct consequence on training opportunities and time to develop new skills. An A&E SHO job may be the only opportunity for some clinicians to gain experience in speculum examination.³ However, it can be argued that the A&E department is not necessarily the best environment to improve technique in gynaecological examination, with limited privacy and at a particularly traumatic time for the woman.

Our overall conclusion for this study is that in the minority of cases the speculum examination led to a change in diagnosis and in management plan. We feel the need for speculum should be assessed on a case by case basis depending on whether the findings on bimanual are conclusive. If the clinician is confident with bimanual there is little to be gained from a speculum examination. Each patient should be treated independently and the examination tailored accordingly. This may be incorporated into a clinical care pathway (fig 1).¹²

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Contributors

Rachel Hoey and Kate Allan jointly initiated the research, designed the study, carried out data collection, analysis, and wrote the paper. Kate Allan and Rachel Hoey act as guarantors.

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