



## Complete Summary

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### GUIDELINE TITLE

Second and third trimester bleeding.

### BIBLIOGRAPHIC SOURCE(S)

Thurmond A, Fleischer AC, Andreotti RF, Bohm-Velez M, Fishman EK, Horrow MM, Hricak H, Zelop C, Expert Panel on Women's Imaging. Second and third trimester bleeding. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 2 p. [8 references]

### GUIDELINE STATUS

This is the current release of the guideline.

It updates a previously published version: Thurmond A, Mendelson E, Bohm-Velez M, Bree R, Finberg H, Fishman EK, Hricak H, Laing F, Sartoris D, Goldstein S. Role of imaging in second and third trimester bleeding. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215 Suppl:895-7.

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

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## SCOPE

### DISEASE/CONDITION(S)

Second and third trimester vaginal bleeding

### GUIDELINE CATEGORY

Diagnosis  
Evaluation

### **CLINICAL SPECIALTY**

Obstetrics and Gynecology  
Radiology

### **INTENDED USERS**

Health Plans  
Hospitals  
Managed Care Organizations  
Physicians  
Utilization Management

### **GUIDELINE OBJECTIVE(S)**

To evaluate the appropriateness of radiologic examinations for patients with second and third trimester vaginal bleeding

### **TARGET POPULATION**

Women in the second and third trimester of pregnancy who are experiencing vaginal bleeding

### **INTERVENTIONS AND PRACTICES CONSIDERED**

1. Ultrasound (US), uterus
  - Transabdominal (TA) and repeat TA
  - Transperineal
  - Transvaginal
2. Magnetic resonance imaging (MRI), pelvis

### **MAJOR OUTCOMES CONSIDERED**

Utility of radiologic examinations in differential diagnosis

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

The guideline developer performed literature searches of peer-reviewed medical journals, and the major applicable articles were identified and collected.

### **NUMBER OF SOURCE DOCUMENTS**

2 of 10

The total number of source documents identified as the result of the literature search is not known.

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Not Given)

## **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Not stated

## **METHODS USED TO ANALYZE THE EVIDENCE**

Systematic Review with Evidence Tables

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus (Delphi)

## **DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed for reaching agreement in the formulation of the appropriateness criteria. The American College of Radiology (ACR) Appropriateness Criteria panels use a modified Delphi technique to arrive at consensus. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1 to 9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are unified to the highest degree possible. Eighty percent agreement is considered a consensus. This modified Delphi technique enables individual, unbiased expression, is economical, easy to understand, and relatively simple to conduct.

If consensus cannot be reached by this Delphi technique, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible.

If "No consensus" appears in the rating column, reasons for this decision are added to the comment sections.

**RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS**

Not applicable

**COST ANALYSIS**

A formal cost analysis was not performed and published cost analyses were not reviewed.

**METHOD OF GUIDELINE VALIDATION**

Internal Peer Review

**DESCRIPTION OF METHOD OF GUIDELINE VALIDATION**

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

**RECOMMENDATIONS**

**MAJOR RECOMMENDATIONS**

**ACR Appropriateness Criteria®**

**Clinical Condition: Second and Third Trimester Vaginal Bleeding**

**Variant 1: No other signs or symptoms.**

<b>Radiologic Exam Procedure</b>	<b>Appropriateness Rating</b>	<b>Comments</b>
US, pregnant, uterus, transabdominal (TA)	9	
US, pregnant, uterus, transperineal	8	
US, pregnant, uterus, transperineal	6	
MRI, pelvis	2	
<p><b><i>Appropriateness Criteria Scale</i></b>  <b>1 2 3 4 5 6 7 8 9</b>  <b>1 = Least appropriate 9 = Most appropriate</b></p>		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 2: Internal cervical os not visible by transabdominal ultrasound.**

<b>Radiologic Exam Procedure</b>	<b>Appropriateness Rating</b>	<b>Comments</b>
US, pregnant, uterus, transperineal	9	
US, pregnant, uterus, transvaginal	8	
US, pregnant, uterus, repeat TA	4	
MRI, pelvis	2	
<b><i>Appropriateness Criteria Scale</i></b> <b>1 2 3 4 5 6 7 8 9</b> <b>1 = Least appropriate 9 = Most appropriate</b>		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

**Variant 3: Placenta previa diagnosed before 32 weeks.**

<b>Radiologic Exam Procedure</b>	<b>Appropriateness Rating</b>	<b>Comments</b>
US, pregnant, uterus, 32-34 weeks	8	
US, pregnant, uterus, once per month	4	
<b><i>Appropriateness Criteria Scale</i></b> <b>1 2 3 4 5 6 7 8 9</b> <b>1 = Least appropriate 9 = Most appropriate</b>		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Vaginal bleeding after the first trimester of pregnancy and before term may be due to premature delivery, placenta previa, placental abruption, placenta accreta or its variants, or of unknown origin. Placenta previa can be excluded if the placenta is shown to lie away from the internal os of the cervix, which can almost always be accomplished by transabdominal ultrasound examination of the cervix and lower uterine segment with the bladder full. If the anatomy is obscured by the fetal head, by hematoma, by a suspected lower uterine segment contraction,

or by an overly full bladder, transperineal scanning or more commonly transvaginal scanning with the bladder empty will almost always result in the correct diagnosis. MRI has been suggested as an alternative to transvaginal or transperineal scanning if ultrasound is inconclusive; however, MRI is rarely needed.

Placenta previa diagnosed in the second trimester may not persist until term because of growth of the lower uterine segment. One should avoid the use of terms such as "low-lying placenta," "marginal previa," "total previa," or "complete previa" since these terms are vague and difficult to quantify. It is better to describe the relationship of the inferior placenta to the internal cervical os in centimeters. If a placenta extends to, or partially covers, the internal os of the cervix before 28 weeks gestation, there is a 4% to 5% chance it will persist in this abnormal location until term, as compared to more than a 50% chance if it completely covers the os at 28 weeks. At any point in gestation if the placenta covers the cervix and is fully implanted on both the anterior and posterior walls of the lower uterine segment, placenta location is unlikely to change.

Placental abruption can be imaged by ultrasound. However, the echogenicity of clot and the echogenicity of placenta can be similar, and therefore a normal exam does not exclude abruption. In general, in a patient with second or third trimester bleeding, in the absence of diagnosis of placenta previa by ultrasound, the management of the pregnancy depends on the clinical circumstances. If clinical circumstances or ultrasound findings are confusing, MRI may help better define the location of the placenta and the presence of abruption

### **Abbreviations**

- MRI, magnetic resonance imaging
- TA, transabdominal
- US, ultrasound

### **CLINICAL ALGORITHM(S)**

Algorithms were not developed from criteria guidelines.

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The recommendations are based on analysis of the current literature and expert panel consensus.

## **BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS**

### **POTENTIAL BENEFITS**

Selection of appropriate radiologic imaging procedures for the evaluation of patients with second and third trimester vaginal bleeding

## POTENTIAL HARMS

Not stated

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Personal Digital Assistant (PDA) Downloads

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## IDENTIFYING INFORMATION AND AVAILABILITY

### **BIBLIOGRAPHIC SOURCE(S)**

Thurmond A, Fleischer AC, Andreotti RF, Bohm-Velez M, Fishman EK, Horrow MM, Hricak H, Zelop C, Expert Panel on Women's Imaging. Second and third trimester bleeding. [online publication]. Reston (VA): American College of Radiology (ACR); 2005. 2 p. [8 references]

### **ADAPTATION**

Not applicable: The guideline was not adapted from another source.

### **DATE RELEASED**

1996 (revised 2005)

### **GUIDELINE DEVELOPER(S)**

American College of Radiology - Medical Specialty Society

### **SOURCE(S) OF FUNDING**

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

### **GUIDELINE COMMITTEE**

Committee on Appropriateness Criteria, Expert Panel on Women's Imaging

### **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

*Panel Members:* Amy Thurmond, MD; Arthur C. Fleischer, MD; Rochelle F. Andreotti, MD; Marcela Böhm-Vélez, MD; Elliot K. Fishman, MD; Mindy M. Horrow, MD; Hedvig Hricak, MD, PhD; Carolyn Zelop, MD

### **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

### **GUIDELINE STATUS**

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The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

## **GUIDELINE AVAILABILITY**

Electronic copies: Available in Portable Document Format (PDF) from the [American College of Radiology \(ACR\) Web site](#).

ACR Appropriateness Criteria® *Anytime, Anywhere*™ (PDA application). Available from the [ACR Web site](#).

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

## **AVAILABILITY OF COMPANION DOCUMENTS**

The following is available:

- ACR Appropriateness Criteria®. Background and development. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the [American College of Radiology \(ACR\) Web site](#).

## **PATIENT RESOURCES**

None available

## **NGC STATUS**

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