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DSOG Guideline Bulletin: Retained Products of Conception in postpartum women

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Abstract

The aim of this guideline was to update an existing guideline from 2014. Retained products of conception (RPOC) is a recognized cause of secondary postpartum hemorrhage (PPH), affecting 1-6% of postpartum women. Despite its clinical significance, evidence on the diagnosis and management of RPOC remains limited. This guideline provides recommendations for both hemodynamically stable and unstable patients.

Seven research questions were formulated to evaluate diagnostic methods of RPOC and compare different treatment modalities. The level of evidence was graded according to the Oxford Centre for Evidence-based Medicine Levels of Evidence. Diagnosis of RPOC remains challenging, as RPOC can mimic normal postpartum uterine changes on ultrasound, but can however when correlated with clinical symptoms help guide management in particular Doppler flow, together with a midline echo ≥10 mm or an intracavitary hyperechogenic mass.

Management options include watchful waiting and surgical intervention. Medical management has shown limited success, often requiring secondary surgery. Watchful waiting may be considered in hemodynamically stable patients regardless of ultrasonographic findings, though comparative data with active treatment is inconclusive. Surgical treatments include dilation and curettage (D&C) or hysteroscopic resection. Though widely used, D&C is a blind procedure with risk of uterine perforation and intrauterine adhesions, potentially affecting future fertility. Hysteroscopy offers direct visualization and targeted removal minimizing endometrial damage and adhesions and is increasingly preferred where expertise and resources are available. Hemodynamically unstable patients with severe bleeding may undergo D&C, preferably guided by ultrasound. Hysteroscopy in the early postpartum period can be technically difficult, especially with heavy bleeding, but remains the preferred choice when feasible. Study evidence ranged from levels 2b to 4, emphasizing the need for further research.

Keywords: Retained products of conception; secondary postpartum hemorrhage; ultrasound; hysteroscopy; dilation and curettage

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Introduction

Secondary postpartum hemorrhage (PPH) is defined as excessive bleeding from the uterus from 24 hours up to 12 weeks postpartum [1, 2]. Secondary PPH may be due to retained products of conception (RPOC), which occurs in 1-6% of postpartum women after both vaginal and caesarean delivery [3, 4]. Risk factors for RPOC are excessive primary PPH, manual removal of the placenta, intrauterine palpation, and RPOC after a previous delivery [5]. The clinical presentation of RPOC is excessive vaginal bleeding, abdominal/pelvic pain, and uterine tenderness. However, these symptoms are not diagnostic, as they may account for normal findings postpartum [5, 6]. Long-term complications are reported to be intrauterine adhesions and infertility [7].

Ultrasound diagnostics, while central to identifying RPOC, present unique challenges. RPOC often mimics normal postpartum uterine changes on ultrasound, such as fluid, blood clots, and decidual tissue, complicating accurate diagnosis [8, 9]. Differentiating between normal physiological findings and pathological conditions can be challenging and requires careful correlation with clinical symptoms and diagnostic indicators. Treatment of RPOC typically involves surgical interventions such as dilation and curettage (D&C) or hysteroscopic resection. While widely used, D&C carries a risk of complications including perforation of the uterus, endometrial damage and intrauterine adhesions due to its blind approach. Hysteroscopy, however, allows direct visualization and targeted removal of RPOC, thereby significantly reducing the risk of damage to the endometrium. The choice of treatment modality depends on the clinical presentation, with hysteroscopy increasingly preferred in settings where resources and expertise are available [7, 10-13].

This guideline did not assess diagnostic indicators and treatment modalities for endometritis or retained tissue after 1st and 2nd trimester abortions.

This guideline provides an update on the clinical management of RPOC to provide evidence-based recommendations for healthcare providers.

Objectives

The primary objective of this guideline was to outline evidence-based approaches to the diagnosis and management of RPOC. The guideline included one PIRO and six PICO questions:

1. Can ultrasound contribute to the diagnosis of RPOC postpartum in women with secondary PPH and clinical suspicion of RPOC?
2. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo medical treatment or watchful waiting?
3. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo dilation and curretage or watchful waiting?
4. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo hysteroscopic resection or watchful waiting?
5. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo medical treatment or dilation and curretage?
6. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo medical treatment or hysteroscopic resection?
7. Should women with abnormal uterine bleeding and suspected RPOC postpartum undergo hysteroscopic resection or dilation and curretage?

Methods

The guideline is a result of a comprehensive review of the literature, which included studies up to 2024. The search was conducted in PubMed on the 19th of February 2024. The Oxford Centre for Evidence-based Medicine (2009), Levels of Evidence grading system, was used to grade the scientific quality of the studies. The guideline was presented and approved at the "Danish Society of Obstetricians and Gynaecologists" guideline meetings on the 7th of September 2024 and the 25th of January 2025.

Results

1. **Can ultrasound contribute to the diagnosis of RPOC postpartum in women with secondary PPH and clinical suspicion of RPOC? (PIRO 1):** Ultrasound, with the addition of Doppler flow, is a valuable diagnostic tool for detecting RPOC

in women with secondary PPH. Key ultrasonographic indicators include midline echo ≥10 mm, a hyperechogenic intracavitary mass, and the presence of Doppler flow [9, 14, 15]. However, distinguishing between normal and pathological findings can be challenging. Therefore, ultrasonographic findings are not definitive and should be interpreted alongside clinical symptoms to guide intervention [16]. Sensitivity and specificity of ultrasound findings for RPOC vary significantly across studies, with Doppler flow enhancing diagnostic accuracy but not excluding RPOC in its absence [5, 17].

2. **Medical treatment vs. watchful waiting (PICO 2):** Medical treatment consists of uterotonics and antibiotics. Studies concluded that primary medical management or watchful waiting of patients with secondary PPH and ultrasonographic suspicion of RPOC has limited success, with more than two-thirds of patients requiring secondary surgical treatment. The likelihood of secondary surgical treatment is higher with increasing midline echo [18, 19]. No conclusive evidence directly compared medical treatment to watchful waiting in terms of outcomes like hemorrhage, need for subsequent intervention, or long-term complications.

3. **D&C vs. watchful waiting (PICO 3)**: While D&C remains a common intervention for RPOC, evidence suggests that watchful waiting could be justified in hemodynamically stable patients with weak ultrasonographic indications of RPOC. D&C is associated with potential complications, including uterine perforation and intrauterine adhesions, which highlights the importance of a cautious approach [4, 8, 20].

4. **Hysteroscopic resection vs. watchful waiting (PICO 4)**: Hysteroscopic resection allows targeted removal of RPOC under direct visualization, minimizing endometrial trauma and reducing the risk of intrauterine adhesions compared to D&C. Although no studies directly compare hysteroscopy to watchful waiting, hysteroscopy appears safe and effective when surgical intervention is required [10, 21-24].

5. **Medical treatment vs. D&C (PICO 5)**: Available data indicate that both approaches have their limitations [19]. Medical treatment may be less invasive but may lead to secondary surgical intervention, whereas D&C provides immediate resolution of symptoms but is associated with higher risk of complications, such as uterine perforation, intrauterine adhesions, and potentially reduced fertility.

6. **Medical treatment vs. hysteroscopic resection (PICO 6)**: No direct comparative studies exist between these two modalities. However, hysteroscopy is preferred in settings requiring surgical intervention due to its precision and reduced risk of adhesions.

7. **Hysteroscopic resection vs. D&C (PICO 7)**: Hysteroscopy is increasingly favored over D&C in experienced centers due to its lower complication rates and potentially superior fertility outcomes. Intrauterine adhesions are notably less common with hysteroscopic techniques [7, 11-13, 25].

Recommendations

- Hemodynamically unstable patients with ongoing severe bleeding should undergo D&C, preferably guided by ultrasound.
- For hemodynamically stable patients, watchful waiting should be considered.
- When feasible, hysteroscopic resection (preferably cold loop resection) and targeted removal of RPOC is preferred over blind D&C to minimize complications.

Conclusions

Retained products of conception represent a significant diagnostic and management challenge in obstetrics and gynaecology. Effective diagnosis relies on a combination of clinical assessment and ultrasonographic findings. While watchful waiting is a viable option for stable patients, surgical intervention remains necessary in many cases. Hysteroscopy is emerging as the preferred surgical

method due to its precision and anticipated reduced risk of complications. Medical treatment appears to have limited effect.
This guideline provides an overview of the diagnosis methods of RPOC and emphasizes that decisions for treatment of RPOC should be guided by the patient's clinical presentation and clinical stability. The summary of evidence and clinical recommendations are listed in two tables below. An evidence-score of 1 is considered the highest level of evidence, and a recommendation strength of A is considered the highest recommendation.

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TABLE OF SUMMARY OF EVIDENCE

Summary of evidence	Level of evidence
Diagnostic value of ultrasound	
Ultrasound can contribute to the diagnosis of RPOC in women who have given birth after gestational week 24. The diagnostic value ranges widely: Sensitivity: 29-98%, Specificity: 20-92%, PPV: 46-85%, NPV: 15-96%	2b
Ultrasound can contribute to strengthen or weaken the clinical suspicion of RPOC.	2b
Ultrasound probably has a higher precision than clinical assessment alone for diagnosing RPOC.	2b
The average size of the uterus 14 days postpartum is 6.3cm in AP diameter and 10cm in length.	2b
Ultrasonographic indicators of RPOC	
An ultrasonographic finding of an intracavitary echogenic mass and/or a midline echo ≥ 10 mm supports a clinical suspicion of RPOC but is not diagnostic.	2b
An ultrasonographic finding of a narrow endometrium (< 10 mm) and absence of an intracavitary echogenic mass leads to a low likelihood of RPOC.	2b
Diagnostic value of Doppler flow	
Ultrasound, either alone or in combination with Doppler flow, demonstrates greater diagnostic accuracy compared to clinical parameters in predicting RPOC.	2b
Color-Doppler can be used to detect hypervascularity in a thickened endometrium and/or an intracavitary echogenic mass. This can be useful in differentiating e.g. clots (without blood supply) from retained tissue (with blood supply).	2b
The sensitivity of ultrasound is increased when using Color-Doppler.	2b
Doppler has a high sensitivity when diagnosing RPOC, but does not have a high specificity, and cannot exclude RPOC.	2b
Other diagnostic modalities	
Other modalities (Sonohysterography, 3D ultrasound, CT, MRI, biochemistry) can also be used in the evaluation of women with symptoms of RPOC postpartum.	2b
There is no evidence of using modalities other than ultrasound as the primary diagnostic examination in women suspected of having RPOC postpartum.	2b

Sonohysterography depicts a better picture of the intracavitary conditions and thus has a higher diagnostic value than conventional ultrasound. Due to the risk of infection, the use of sonohysterography is not recommended over conventional ultrasound.	2b
Medical treatment vs. watchful waiting	
No studies examined the difference in the effect of primary medical and primary conservative treatment of RPOC.	
A large proportion of patients with RPOC, primarily treated medically or conservatively, subsequently need secondary surgical treatment.	2c
Primary medical or conservative management of secondary PPH is associated with a lower success rate if RPOC is suspected by ultrasound compared with secondary PPH without RPOC suspicion.	2c
The efficacy of medical and conservative treatment of secondary PPH is less successful with increasing ultrasonographic midline echo.	2c
Dilation and curettage vs. expectant treatment	
Symptomatic RPOC after delivery can be treated with observation or dilation and curettage in hemodynamically stable patients, but there are no studies to support which approach is preferrable.	2c
Expectant treatment of RPOC after birth probably leads to more subsequent inquiries compared to primary dilation and curettage and some patients need further treatment.	4
Compared to conservative treatment of RPOC after delivery, dilation and curettage carries a risk of serious complications such as perforation, bleeding, infection, need for blood transfusion and Ashermann's syndrome	4
Hysteroscopic resection vs. watchful waiting	
There are no studies comparing hysteroscopic resection of RPOC after birth versus expectant treatment.	
The incidence of intrauterine adhesions (IUA) in women suspected of RPOC is reported to be 5.8-18.7%, but the literature does not always distinguish between postpartum and post-abortion women, or how they are treated.	2c
Hysteroscopic resection of RPOC is a safe procedure with no serious complications reported.	2b
Medical treatment vs. dilation and curettage	
No studies examined the difference in the effect of primary medical and surgical (dilation and curettage) treatment of RPOC after birth.	
The success rate of primary medical treatment for stopping bleeding: 8.2 – 84.6%. Excluding studies > 30 years old, the success rate was: 44 – 73.7%.	2c

After primary medical treatment, secondary treatment with surgical intervention was required in 0-91.8%.	2c
Hysteroscopic resection vs. dilation and curettage	
There may be a shorter time from surgical removal of RPOC to new pregnancy after hysteroscopy than after dilation and curettage.	2c
IUA may be seen more frequently after dilation and curettage compared to after hysteroscopic resection.	2c
There is a trend towards better fertility outcomes with hysteroscopic resection of RPOC compared to dilation and curettage.	2c
An increased risk of recurrent RPOC in new pregnancy is reported after previous dilation and curettage compared to after previous hysteroscopy (based on sparse data).	2c

TABLE OF CLINICAL RECOMMENDATIONS

Recommendations	Strength
Diagnostic value of ultrasound	
If there is clinical suspicion of RPOC after birth (secondary PPH and/or pain), ultrasound with Doppler flow can be used as a diagnostic supporting tool.	B
Ultrasonographic exam of women with clinical suspicion of RPOC after delivery should focus on the following: 1) Midline echo ≥ 10 mm 2) Intracavitary hyperechoic mass 3) Presence of Doppler flow	B
In case of ultrasound findings of endometrium <10 mm and absence of both intracavitary hyperechoic mass and Doppler flow, the probability of RPOC after delivery is very low.	B
Ultrasound findings raising suspicion of RPOC after delivery may be difficult to distinguish from findings in the normal postpartum uterus. Therefore, ultrasound cannot stand alone but should be compared with clinical symptoms when deciding on intervention.	B
Watchful waiting	
Conservative treatment is probably equivalent to medical treatment and can therefore be considered in hemodynamically stable patients with secondary PPH and suspected RPOC after birth.	C
In the case of a hemodynamically unstable patient with ongoing secondary PPH, initial surgical treatment with dilation and curettage, preferably guided by ultrasound, may be beneficial.	D

In hemodynamically stable patients with secondary PPH and a strong ultrasonographic suspicion of RPOC after delivery, expectant treatment may be considered instead of dilation and curettage as initial treatment.	C
In hemodynamically stable patients with secondary PPH and ultrasonographic unclear or low suspicion of RPOC after delivery, expectant treatment may be considered instead of dilation and curettage.	C
Conservative (expectant) treatment can be considered in clinically stable patients with secondary PPH and suspicion of RPOC.	C
Surgical treatment	
Hysteroscopic removal of RPOC after birth (primarily with a cold loop) is a suitable intervention if surgical intervention is required.	C
No studies support an evidence-based choice between primary medical or surgical (dilation and curettage) treatment of RPOC after delivery in patients with secondary PPH.	
If surgical intervention is needed, hysteroscopic removal of RPOC (primarily with cold loop) after birth can be considered, if possible, rather than dilation and curettage, to reduce the risk of intrauterine adhesions.	C
Hysteroscopic removal of RPOC is difficult within the first 1-2 weeks postpartum and especially with heavy ongoing bleeding, which is why dilation and suction and, if necessary, blunt curettage can be performed if there is a strong indication.	*Expert recommendation*

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