ARTIGO ORIGINAL

PUERPERAL APPENDICITIS IN A 16-YEAR-OLD ADOLESCENT: CASE REPORT AND DIAGNOSTIC APPROACH IN A POST-CESAREAN WOMAN

Apendicite puerperal em adolescente de 16 anos: relato de caso e abordagem diagnóstica em puérpera pós-cesariana

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ABSTRACT

Puerperal appendicitis is a rare and challenging condition to diagnose due to the overlap of its symptoms with normal postpartum physiological changes. This study reports the case of an 8-day post-cesarean 16 years old puerperal woman who presented with persistent abdominal pain, fever, and leukocytosis, symptoms initially attributed to physiological postpartum processes. Clinical evaluation and laboratory tests revealed anemia and leukocytosis, while computed tomography showed findings suggestive of pelvic abscess and inflammation. Exploratory laparotomy confirmed the diagnosis of suppurative appendicitis with generalized peritonitis, leading to an appendectomy and abscess drainage. This case highlights the complexity of diagnosing puerperal appendicitis, especially after cesarean sections, where anatomical and hormonal changes may mask the classical signs of the disease. Early use of imaging exams, such as ultrasound and tomography, is crucial for diagnostic confirmation and for preventing severe complications such as peritonitis. Surgical management, preferably by laparoscopy, is recommended to reduce morbidity and accelerate recovery. This study emphasizes the importance of high clinical suspicion in puerperal patients and the early use of complementary imaging exams, allowing for prompt and effective intervention. Furthermore, it reviews the literature on the diagnostic challenges of puerperal appendicitis and discusses the best therapeutic strategies based on current evidence. Delayed diagnosis may lead to increased maternal mortality and a higher incidence of complicated appendicitis.

Keywords: Puerperal appendicitis, differential diagnosis, cesarean section, peritonitis.

RESUMO

A apendicite no período puerperal é uma condição clínica rara e de diagnóstico desafiador, devido à sobreposição de seus sintomas com as alterações fisiológicas normais do pós-parto. Este estudo relata o caso de uma puérpera de 16 anos com 8 dias pós-cesariana que apresentou dor abdominal persistente, febre e leucocitose, sintomas inicialmente atribuídos a processos fisiológicos do puerpério. A avaliação clínica e exames laboratoriais revelaram anemia e leucocitose, enquanto a tomografia computadorizada evidenciou sinais sugestivos de abscesso pélvico e inflamação. A laparotomia exploratória confirmou o diagnóstico de apendicite supurada com peritonite generalizada, sendo realizada apendicectomia e drenagem do abscesso.O caso ilustra a complexidade do diagnóstico da apendicite puerperal, especialmente após cesarianas, onde as alterações anatômicas e hormonais podem mascarar os sinais clássicos da doença. O uso precoce de exames de imagem, como ultrassonografia e tomografia, é crucial para confirmar o diagnóstico e evitar complicações graves, como a peritonite. A abordagem cirúrgica, preferencialmente por laparoscopia, é recomendada para reduzir a morbidade e acelerar a recuperação. Adicionalmente, a ocorrência em adolescentes traz desafios particulares, relacionados à imaturidade emocional e fisiológica, o que pode contribuir para atrasos no diagnóstico e agravamento clínico.Este estudo reforça a importância, em situações de alta suspeição clínica, da realização de exames complementares por imagem para diagnóstico da apendicite puerperal, possibilitando uma intervenção rápida e eficaz. Além disso, revisa a literatura sobre os desafios diagnósticos da apendicite puerperal e discute as melhores estratégias terapêuticas, considerando as evidências atuais. Destaca-se o impacto do atraso na identificação da condição, associando-se ao aumento da mortalidade materna e à incidência de apendicite complicada.

Palavras-chave: Apendicite puerperal, diagnóstico diferencial, cesariana, peritonite.

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INTRODUCTION

Puerperal appendicitis is a rare condition and a challenging diagnosis due to the overlap of its symptoms with normal postpartum physiological changes. Although the incidence of appendicitis is higher during pregnancy, cases in the postpartum period are less suspected in clinical practice, making early diagnosis more difficult and potentially increasing the risk of complications, such as peritonitis.

The occurrence of this condition in adolescents presents an additional challenge due to emotional and physiological immaturity, which may lead to delays in diagnosis and worsen the clinical condition. Furthermore, the literature is limited regarding puerperal appendicitis in adolescents, with few published reports[2], making it difficult to develop guidelines for appropriate management in these cases.

Therefore, this report aims to describe a case of puerperal appendicitis in an adolescent patient, discussing the diagnostic and therapeutic challenges, and contributing to the early recognition of this condition in a poorly documented population.

METHODOLOGY

This study is a case report of puerperal appendicitis in a 16-year-old adolescent, 8 days after a cesarean section. The research was approved by the Ethics Committee in Research under opinion number 7.546.724, in accordance with the principles established by Resolution No. 466/12 of the National Health Council.

The study design is observational, retrospective, and descriptive, focusing on the clinical analysis of a specific patient who presented with persistent abdominal pain, fever, and leukocytosis, initially attributed to physiological postpartum processes. Data collection was carried out through a detailed review of the patient's electronic medical record, which provided information on her hospital admission, clinical progression, laboratory tests, imaging studies, and therapeutic approach.

Laboratory findings revealed anemia, leukocytosis, and elevated C-reactive protein levels, while computed tomography showed signs suggestive of a pelvic abscess. Surgical intervention, performed via exploratory laparotomy, confirmed the diagnosis of suppurative appendicitis with generalized peritonitis, leading to an appendectomy and abscess drainage.

Data analysis was descriptive and focused on the patient's clinical progression, considering the challenges of early diagnosis, especially in adolescents during the postpartum period, where appendicitis symptoms may be confused with normal physiological changes. The study emphasizes the importance of early use of imaging studies for diagnostic confirmation and the need for prompt surgical intervention to reduce complications and improve outcomes, especially considering the impact of delayed diagnosis on maternal morbidity.

Case Report

A 16-year-old postpartum patient, 8 days after cesarean section, presented to the clinic with persistent abdominal pain, moderate vaginal bleeding, intermittent fever, and intense fatigue. On physical examination, she was conscious, oriented, eupneic, and febrile, with a globular abdomen and tenderness in the right iliac fossa, without signs of abdominal guarding.

Laboratory tests showed anemia (hemoglobin = 9.9 g/dL), leukocytosis (15,000/mm³), and elevated C-reactive protein (119.56 mg/L), suggesting a significant inflammatory process. The coagulation profile showed prolonged activated partial thromboplastin time (aPTT) (37 s). Hepatic and renal functions were within normal limits. The main laboratory results are presented in Table 1.

Tabela 1. Exames laboratoriais pré-operatórios

Parâmetro	Resultado
Hemácias	3,78 x10^6/mm³
Hemoglobina	9,9 g/dL
Hematócrito	33,3%
Leucócitos	15.000/mm³
Neutrófilos totais	80,4%
Linfócitos	15,2%
Plaquetas	380.000/mm³
Proteína C reativa	119,56 mg/L
TTPa	37 s

Abdominal and pelvic CT revealed mild hepatosplenomegaly, areas suggestive of renal inflammatory processes, and the presence of hypodense content in the pelvis with small gas foci, compatible with a pelvic abscess.

In light of these findings, exploratory laparotomy was indicated, which revealed a large accumulation of pus in the subcutaneous tissue, requiring extensive cavity irrigation. Generalized peritonitis was observed, along with an enlarged, edematous, and intensely inflamed appendix, with the presence of a fecalith, confirming the diagnosis of suppurative appendicitis. An appendectomy was performed, along with abscess drainage and further irrigation, and two drains were placed to control the infection. The surgical specimen is shown in Figure 1.

Figura 1. Apêndice vermiforme pós excisão

Abdominal wall closure was done in anatomical layers. In the immediate postoperative period, the patient remained stable, afebrile, and without signs of peritoneal irritation. The abdomen showed mild distension, without significant pain. The drain was eliminating sero-hematic fluid, without purulent secretion. Diuresis was preserved, with no signs of edema or deep vein thrombosis.

During hospitalization, the patient received continuous monitoring, clinical support, a six-hour fasting period followed by a light diet, as well as broad-spectrum antibiotic therapy, analgesics, and antipyretics. On the third day, laboratory improvement was observed, with a reduction in leukocytosis and stabilization of the inflammatory process. The patient progressed well and was discharged in good general condition with instructions for outpatient follow-up.

DISCUSSION

Puerperal appendicitis presents a diagnostic challenge, as its symptoms can be confused with normal postpartum physiological changes. Studies indicate a higher incidence of the disease during pregnancy than in the postpartum period, which reduces clinical suspicion during this time. Moltubak et al.[1] identified 1,157 cases of appendicitis during pregnancy compared to 238 in the puerperium, reinforcing its lower prevalence after delivery.

In the reported case, the patient presented with persistent abdominal pain, fever, and leukocytosis—symptoms consistent with both appendicitis and puerperal infections. During the puerperium, uterine involution can displace the cecal appendix, making it difficult for the classic signs, such as McBurney's point tenderness and peritoneal irritation, to manifest. The increase in uterine volume can also compress abdominal structures, resulting in an atypical presentation and diagnostic delay, emphasizing the importance of early imaging for confirmation.

Additionally, cases in adolescents after cesarean section present additional challenges related to emotional and physiological immaturity, less experience, and difficulty in communicating symptoms. These factors contribute to delays in seeking medical attention and worsening clinical conditions, increasing the complexity of management[3].

The literature also indicates a higher incidence of puerperal appendicitis after cesarean sections. According to Şahin et al.[4], 75% of appendectomies in postpartum women occur in the first week after delivery, a finding also

observed in this case. Computed tomography was crucial in identifying inflammatory signs and guiding early surgical intervention.

Although laparoscopy is the preferred method due to lower morbidity and faster recovery, laparotomy remains indicated in cases of generalized peritonitis[6]. Studies emphasize that, in cases of disseminated infection, laparotomy provides greater safety[5].

Finally, this case not only illustrates the diagnostic complexity of puerperal appendicitis but also highlights the need for special attention to the characteristics of the age group, particularly in adolescents after cesarean sections. The scarcity of similar reports in the literature underscores the novelty and relevance of this case, which contributes to the early recognition and appropriate management of this condition in a poorly studied population. Furthermore, it emphasizes the importance of attentive clinical practice and timely surgical decision-making in reducing maternal morbidity and mortality. This report reinforces the need for vigilance and sensitivity by multidisciplinary teams when dealing with acute abdominal conditions in the puerperium, especially in adolescents.

Final Considerations

Although rare, puerperal appendicitis should be considered in the differential diagnosis of postpartum women with persistent abdominal pain, especially after cesarean section. In the present case, involving an adolescent patient, the additional difficulties imposed by the age group are highlighted, such as emotional immaturity and limitations in expressing symptoms—factors that contribute to delays in seeking medical attention and worsening clinical conditions. In this context, the use of imaging, particularly computed tomography, was crucial for confirming the diagnosis and determining the therapeutic approach.

Therefore, early recognition and timely surgical intervention are crucial in reducing maternal morbidity and mortality. In light of these aspects, the importance of raising awareness and training healthcare teams is emphasized, as well as the need for future studies that can support the development of specific guidelines for managing puerperal appendicitis in adolescents.

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REFERENCES

1.Moltubak K, Hollekim-Strand SM, Aandahl EM, et al. Major variation in the incidence of appendicitis before, during and after pregnancy: a population-based cohort study. Br J Surg. 2021;108(1):101-9.
2.Novo A, Chen L. Apendicite aguda puerperal: relato de caso. Latin Am J Public Health. 2022;5(3):45-51.
3.Menezes LA, Siqueira ACG, Sá MCA. Vulnerabilidade de adolescentes em pesquisa e prática clínica. Rev Bioética. 2019;27(1):31-8. https://doi.org/10.1590/1983-80422019271206
4.Şahin C, Tinelli A, Augustin G. Are cesarean section and appendectomy in pregnancy and puerperium interrelated? A cohort study. Am J Obstet Gynecol. 2020;223(2):246.e1-246.e9.
5.Sanar Medicina. Apendicite: quando é indicado operar e como é a cirurgia? Disponível em: https://sanarmed.com/apendicite-quando-e-indicado-operar-e-como-e-a-cirurgia-de-retirada-do-apendice-colunistas-projetoq2-2022. Acesso em: 24 mar. 2025.
6.Lee SH, Lee JY, Choi YY, Lee JG. Laparoscopic appendectomy versus open appendectomy for suspected appendicitis during pregnancy: a systematic review and updated meta-analysis. BMC Surg. 2019;19(1):55.

Observação: os/(as) autores/(as) declaram não existir conflitos de interesses de qualquer natureza.