



Disseminated Intravascular Coagulation (DIC) After Cesarean Section: A Comprehensive Review

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ABSTRACT

Disseminated Intravascular Coagulation (DIC) is a complex condition that can occur following a cesarean section, presenting serious implications for both the mother and baby. In order to effectively manage DIC after a cesarean section, it is crucial to understand its definition, classification, causes, and appropriate treatment. This article aims to provide a comprehensive review of DIC following a cesarean section, shedding light on this grave obstetric complication and aiding healthcare professionals in its management.

Keywords: Disseminated intravascular coagulation, Intravascularly, Haemostasis, International Society of Thrombosis and Haemostasis (ISTH), Haematology

INTRODUCTION

A cesarean section is a routinely conducted surgical intervention to deliver a baby in the event vaginal birth is not feasible or noted associated risks to the mother or baby. While it is generally a safe procedure, it can occasionally lead to complications such as DIC, which can result in appreciable morbidity and mortality. DIC is a syndrome denoted by widespread activation of blood coagulation, resulting in blood clots formation intravascularly throughout the body. This activation of coagulation cascade consequently depletes the body's clotting factors, eventually progressing into excessive bleeding. Understanding the pathophysiology, causes, and treatment of DIC after cesarean section is crucial for preventing adverse outcomes in affected patients.

Definition and classification

DIC is classified into various categories, including acute DIC, chronic DIC, and overt versus non-overt DIC based on the duration and severity of the condition and underlying pathologies. It can also be sorted into organ

failure, massive bleeding, and non-symptomatic types (Levi M, et al. 1999).

DESCRIPTION

This classification is dependent on the key features of DIC which are hyper coagulation and hyper fibrinolysis (Toh CH, et al. 2007). There are a number of guidelines that propose to give the exact definition such as The British Committee for Standards in Hematology, Japanese Society of Thrombosis and Hemostasis, and the Italian Society for Thrombosis and Haemostasis: However, due to deviations in these guidelines the International Society of Thrombosis and Haemostasis (ISTH) published an expansively used scoring system that aimed to coalesce these differences (Kobayashi T, et al. 2014).

Causes of DIC after cesarean section

DIC after a cesarean section can be triggered by various factors including:

Placental complications: Placental abruption, wherein the placenta detaches from the uterine wall

prematurely, can lead to the release of pro coagulant substances, triggering DIC (Levi M, et. 1999).

Amniotic fluid embolism: In rare cases, the entry of amniotic fluid into the maternal circulation during a cesarean section can induce a severe allergic reaction, leading to DIC.

Maternal infections: Certain infections, such as sepsis or intrauterine infections, can result in DIC following a cesarean section (Pritchard JA, et al. 1955)

Inherited or acquired coagulation disorders: Women with pre-existing blood clotting disorders or those who develop acquired clotting disorders during pregnancy are at an increased risk of developing DIC after a cesarean section.

Retained products of conception: Some women may exhibit laboratory signs of DIC associated with bleeding due to retained products off conception that had not been fully evacuated.

These complications disrupt the delicate balance between coagulation and fibrinolysis, leading to the activation of the coagulation cascade and subsequent consumption of clotting factors.

Treatment of DIC after cesarean section

Early recognition and prompt intervention are key in the management of DIC after cesarean section. Treatment approaches may include:

Addressing the underlying cause: Treating the primary cause, such antibiotic administration in the cases of infection or is essential to halt the progression of DIC.

Replacement therapy: Administering blood products, including fresh frozen plasma and platelets, can help replenish depleted clotting factors and restore balance in the coagulation system. These come highly recommended in DIC patients with actively bleeding and those DIC patients identified as having considerable risk of bleeding simultaneously requiring invasive procedures.

Anticoagulation therapy: In severe cases of DIC, anticoagulant medications may be considered to prevent further clot formation. Management with heparin comes highly recommended in patients with the non-symptomatic type of DIC.

Management of bleeding: In patients with severe bleeding, interventions such as surgery may be necessary in cases of retained products of conception and placental abruption being the most common culprit or uterine artery embolization may be necessary.

CONCLUSION

DIC after cesarean section is a serious complication that can significantly impact the health of postpartum women. Timely recognition and prompt intervention are crucial for successfully managing this condition. Healthcare professionals involved in postoperative care should be vigilant in monitoring patients for signs and symptoms of DIC, considering the potential causes, and promptly initiating appropriate treatment. By ensuring a comprehensive understanding of DIC after cesarean section, healthcare providers can mitigate the risks associated with DIC and improve outcomes for affected mothers and infants ultimately leading to a brighter and healthier postoperative period.

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