

Case Report

Open Access, Volume 3

Small bowel bleeding due to angiodysplasia causing fetal death in utero

Heejin Kang¹; Gyul Jung²; In Sun Hwang²; Yoohyun Chung^{1*}

¹Department of Obstetrics & Gynecology, Daejeon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, 64, Daeheung-ro, Jung-gu, Daejeon, Republic of Korea.

²Department of Obstetrics & Gynecology, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Republic of Korea.

*Corresponding Author: Yoohyun Chung

Department of Obstetrics & Gynecology, Daejeon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, 64, Daeheung-ro, Jung-gu, Daejeon, Republic of Korea.

Tel: 82-42-220-9555;

Email: youpig721@naver.com

ORCID ID: 0000-0002-7998-7041.

Abstract

Back ground: One of the known causes of GI bleeding is angiodysplasia, which usually causes bleeding over 70 years old patients. 30-40% of small bowel Angiodysplasia (AD) shows Gastrointestinal (GI) bleeding which occurs chronically and repeatedly.

Case presentation: A 25-year-old patient in 27+6 weeks of pregnancy administered to our hospital with os bleeding. Fetal death in uterus was diagnosed with sonography and her initial lab showed hemoglobin 6.8 g/dl. On the second post operation day of cesarean section, the patient complained hematemesis and hematochezia, and her blood pressure was measured 80/50 mmHg with heart rate 128/min.

Sigmoidoscopy and esophagogastroduodenoscopy were immediately done, and large amount of blood was shown at both stomach and sigmoid colon without any active bleeding site. Abdomen CT showed active small bowel bleeding with hematoma. Embolization was done and successfully blocked active bleeding. After two days, we examined capsule endoscopy and found angiodysplasia and ischemic change at jejunum. The patient was fully recovered and discharged after 8 days of delivery.

Conclusions: Our report shows the rare case of young pregnant woman with angiodysplasia experiences massive GI bleeding which lead to FDIU. Our case highlights the need for close monitoring of pregnant women with bleeding diathesis such as diverticulitis and AV deformities during or before pregnancy.

Keywords: Angiodysplasia; Small bowel bleeding; Death in fetal utero.

Abbreviations: AD: Angiodysplasia; AV: Arteriovenous; CT: Computed Tomography; FDIU: Fetal Death In Utero, GI: Gastrointestinal; NO: Nitric Oxide; RBC: Red Blood Cell; SB: Small Bowel; UGI: Upper Gastrointestinal.

Received: Sep 07, 2022

Accepted: Oct 04, 2022

Published: Oct 11, 2022

Archived: www.jcimcr.org

Copyright: © Chung Y (2022).

DOI: www.doi.org/10.52768/2766-7820/2096

Background

Angiodysplasia (AD), one of the known causes of Gastrointestinal (GI) bleeding, usually causes bleeding in patients over 70 years old, and 30-40% of cases of small bowel AD show GI bleeding, which occurs chronically and repeatedly. In this report, we describe a case of intrauterine fetal death due to small bowel AD bleeding in the second trimester of pregnancy.

Case presentation

A patient at 27.6 weeks of pregnancy with chief complaints of suspected vaginal bleeding and hematemesis presented to our hospital. While the vaginal examination was clear without any sign of bleeding, a fetal heartbeat was not detected with abdominal sonography, and we diagnosed fetal death in utero. The patient's initial laboratory examinations showed hemoglobin 6.8 g/dl and hematocrit 20.8%. Three hours after her initial presentation, the patient underwent an emergency cesarean section. Five units of packed RBCs were transfused during and after the operation, and the patient's hemoglobin recovered to 11.5 g/dl. No particular abnormality was found during the operation.

On the second post-operative day, the patient complained of hematemesis and hemochezia with a fully wet pad, and her blood pressure measured 80/50 mmHg with a HR of 128 beats per minute. No vaginal bleeding was shown when the dressing was changed, but the digital rectal exam was positive. An emergent transfusion was started, and within 3 hours of bleeding, the hemoglobin had dropped to 4 g/dl. Immediate sigmoidoscopy and esophagogastroduodenoscopy demonstrated a large amount of blood at both the stomach and sigmoid colon without any active bleeding. Abdominal CT showed active contrast extravasation and a hematoma at the mid-abdominal small bowel, suggesting active small bowel bleeding with hematoma. Embolization was done and successfully blocked the active bleeding focus with an abnormally dilated and tortuous feeding artery. Two days later, capsule endoscopy revealed AD and ischemic change at the jejunum with no active bleeding sites. The patient fully recovered after conservative care, and she was discharged 8 days after delivery.

Discussion

Angiodysplasia usually causes GI bleeding in patients over 70 years old; many studies have shown that the major risk factor of AD is age [1]. Of all patients with AD, 1.2-8.0% experience upper GI bleeding, mostly located at the stomach and duodenum [1]. Most cases of UGI AD are asymptomatic, which makes them unpredictable. GI bleeding occurs in 30-40% of patients with small bowel AD. In cases of symptomatic AD, GI bleeding occurs chronically and repeatedly, so it is important to review patient history [1].

Pregnant women experience hemodynamic changes to support the uterus and its blood flow. Maternal blood volume increases by about 15% in the first trimester of pregnancy. The rate of volume expansion peaks in the mid-trimester, and by the third trimester, maternal blood volume is increased by 40-45% compared to a non-pregnant woman [2].

Pregnant women develop resistance to angiotensin II, pos-

sibly related to an increase in progesterone. About 7-8 liters of total body fluid volume is present due to arginine vasopressin release and activation of the renin-angiotensin-aldosterone system [3]. This, along with NO from endothelial cells, can contribute to the formation of tortuous, dilated vessels, as seen in AD [4]. Both blood volume expansion and hormonal changes can precipitate AD, and in turn, the massive bleeding that caused FDIU in our case.

Some clinical trials have performed hormonal therapy for AD prevention but adversely showed increased risk of vascular disease, thrombosis with secondary hemorrhage, and bleeding [5]. Another report demonstrated no significant difference between hormonal therapy and placebo groups and concluded that hormonal therapy is not appropriate for bleeding prevention [6].

The plasma levels of progesterone and estrogen rise during pregnancy and reach a hyper-estrogen state at near term [7]. The previously mentioned studies support the idea that a hyper-estrogen state in our patient enhanced the AD bleeding risk [1]. Therefore, the hemodynamic and hormonal changes during pregnancy can activate AD.

Possible methods of AD bleeding prophylaxis include argon plasma ablation and pharmacological therapy, both of which have limitations. Argon plasma ablation requires that the probe approach and visualize all possible sites of bleeding, which might not be possible in cases with multiple lesions or lesions in the small intestine [1]. Pharmacological therapy includes hormones, thalidomide, and octreotide. Hormonal therapy using progesterone and estrogen failed to show efficacy in recent studies [6,8]. Thalidomide and octreotide are not recommended for use during pregnancy [9].

Conclusions

This case report highlights AD caused small bowel bleeding in a young pregnant woman. The blood loss was severe and eventually caused FDIU. Considering that both AD and bleeding caused, our case report suggests that pregnancy is a risk factor of massive small-bowel bleeding.

Declarations

Author's contributions: KHJ, JG, HIS and CYH contributed to the conception and design of the study. KHJ, JG and HIS contributed to the writing of the manuscript. JG, HIS and CYH contributed to the acquisition and interpretation of the data. All authors read and approved the final manuscript.

Ethics approval and consent to participate: Not applicable.

Acknowledgements: Not applicable.

Funding: There are no funding sources for this case report.

Competing interests: The authors declare that they have no competing interests.

Consent for publications: Written informed consent for publication was obtained from study participant.

Availability of data and materials: Not applicable.

References

1. Sami SS, Al-Araji SA, Ragunath K. Review article: gastrointestinal angiodysplasia - pathogenesis, diagnosis and management. *Alimentary Pharmacology and Therapeutics*. 2014; 39: 15-34.
2. Thornburg KL, Jacobson SL, Giraud GD, Morton MJ. Hemodynamic changes in pregnancy. *Seminars in Perinatology*. 2000; 24: 11-14.
3. Carbillon L, Uzan M, Uzan S. Pregnancy, vascular tone, and maternal hemodynamics: A crucial adaptation. *Obstetrical and Gynecological Survey*. 2000; 55: 574-581.
4. Kulandavelu S, Whiteley KJ, Bainbridge SA, Qu D, Adamson SL. Endothelial NO synthase augments fetoplacental blood flow, placental vascularization, and fetal growth in mice. *Hypertension*. 2013; 61: 259-266.
5. Grant EC. Avoid hormones in gastrointestinal angiodysplasia. *Lancet*. 2002; 360: 1254.
6. Junquera F, Feu F, Papo M, Videla S, Armengol JR, Bordas JM, et al. A multicenter, randomized, clinical trial of hormonal therapy in the prevention of rebleeding from gastrointestinal angiodysplasia. *Gastroenterology*. 2001; 121: 1073-1079.
7. Kumar P, Magon N. Hormones in pregnancy. *Nigerian Medical Journal*. 2012; 53: 179-183.
8. Mangiavillano B, Luigiano C, Basile S, Salerno MG, Stelitano L, Morace C, et al. Is pregnancy a predisposing factor for Dieulafoy's duodenal lesion or only a coincidence? *Clinics and Research in Hepatology and Gastroenterology*. 2013; 37: e119-120.
9. García Compeán D, Del Cueto Aguilera AN, Jiménez Rodríguez AR, González González JA, Maldonado Garza HJ. Diagnostic and therapeutic challenges of gastrointestinal angiodysplasias: A critical review and viewpoints. *World Journal of Gastroenterology*. 2019; 25: 2549-2564.