

World Journal of *Clinical Cases*

World J Clin Cases 2018 November 6; 6(13): 577-715



**REVIEW**

- 577 Role of bile acids in colon carcinogenesis
Nguyen TT, Ung TT, Kim NH, Jung YD

MINIREVIEWS

- 589 Update on global epidemiology of viral hepatitis and preventive strategies
Jefferies M, Rauff B, Rashid H, Lam T, Rafiq S

ORIGINAL ARTICLE**Case Control Study**

- 600 Iron metabolism disorders in patients with hepatitis B-related liver diseases
Gao YH, Wang JY, Liu PY, Sun J, Wang XM, Wu RH, He XT, Tu ZK, Wang CG, Xu HQ, Niu JQ

Retrospective Cohort Study

- 611 Impact of an acute hemodynamic response-guided protocol for primary prophylaxis of variceal bleeding
Forteza JI, Puente Á, Ruiz P, Ezcurra I, Vaquero J, Cuadrado A, Arias-Loste MT, Cabezas J, Llerena S, Iruzubieta P, Rodríguez-Lope C, Huelin P, Casafont F, Fábrega E, Crespo J

Retrospective Study

- 624 Effect of a region-wide incorporation of an algorithm based on the 2012 international consensus guideline on the practice pattern for the management of pancreatic cystic neoplasms in an integrated health system
Nguyen AK, Girg A, Tekeste T, Chang K, Adeyemo M, Eskandari A, Alonso E, Yaramada P, Chaya C, Ko A, Burke E, Roggow I, Butler R, Kawatkar A, Lim BS

- 632 Usefulness of colonic tattooing using indocyanine green in patients with colorectal tumors
Park JH, Moon HS, Kwon IS, Yun GY, Lee SH, Park DH, Kim JS, Kang SH, Lee ES, Kim SH, Sung JK, Lee BS, Jeong HY

Randomized Clinical Trial

- 641 *Helicobacter pylori* may be an initiating factor in newly diagnosed ulcerative colitis patients: A pilot study
Mansour L, El-Kalla F, Kobtan A, Abd-Elsalam S, Yousef M, Soliman S, Ali LA, Elkhawany W, Amer I, Harras H, Hagar MM, Elhendawy M

META-ANALYSIS

- 650 Photodynamic therapy for middle-advanced stage upper gastrointestinal carcinomas: A systematic review and meta-analysis
Chen B, Xiong L, Chen WD, Zhao XH, He J, Zheng YW, Kong FH, Liu X, Zhang ZJ, Miao XY

CASE REPORT

- 659 Successful rescue of acute liver failure and hemophagocytic lymphohistiocytosis following varicella infection: A case report and review of literature
Zhang LN, Guo W, Zhu JH, Guo Y
- 666 Bilateral thoracic kidneys combined with inferior vena cava located behind the anterior abdominal wall: A case report and review of literature
Peng XX, Cheng SA, Liang QL, Luo XB, Hong XC, Yuan GL, Zhang HJ
- 671 Incident hepatocellular carcinoma developing during tenofovir alafenamide treatment as a rescue therapy for multi-drug resistant hepatitis B virus infection: A case report and review of the literature
Lu JC, Liu LG, Lin L, Zheng SQ, Xue Y
- 675 Possible connection between elevated serum α -fetoprotein and placental necrosis during pregnancy: A case report and review of literature
Yu MY, Xi L, Zhang JX, Zhang SC
- 679 Laparoscopic pancreatic duct incision and stone removal and T-type tube drainage for pancreatic duct stone: A case report and review of literature
Bai Y, Yu SA, Wang LY, Gong DJ
- 683 Detection of a unicentric type of Castleman-like mass at the site of adrenal gland: A case report and review of literature
Chen J, Yang C, Liang CZ
- 688 Systemic lupus erythematosus complicated by noncirrhotic portal hypertension: A case report and review of literature
Yang QB, He YL, Peng CM, Qing YF, He Q, Zhou JG
- 694 Natural killer/T-cell lymphoma with concomitant syndrome of inappropriate antidiuretic hormone secretion: A case report and review of literature
Liu QB, Zheng R
- 703 Successful treatment of pyoderma gangrenosum with concomitant immunoglobulin A nephropathy: A case report and review of literature
Li XL, Ma ZG, Huang WH, Chai EQ, Hao YF



- 707 Highlighting the importance of early diagnosis in progressive multi-organ involvement of IgG4-related disease: A case report and review of literature

Xue J, Wang XM, Li Y, Zhu L, Liu XM, Chen J, Chi SH

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Byung-Wook Kim, MD, PhD, Professor, Division of Gastroenterology, Department of Internal Medicine, Incheon St. Mary's Hospital, the Catholic University of Korea, Incheon 21431, South Korea

AIM AND SCOPE

World Journal of Clinical Cases (*World J Clin Cases*, *WJCC*, online ISSN 2307-8960, DOI: 10.12998) is a peer-reviewed open access academic journal that aims to guide clinical practice and improve diagnostic and therapeutic skills of clinicians.

The primary task of *WJCC* is to rapidly publish high-quality Autobiography, Case Report, Clinical Case Conference (Clinicopathological Conference), Clinical Management, Diagnostic Advances, Editorial, Field of Vision, Frontier, Medical Ethics, Original Articles, Clinical Practice, Meta-Analysis, Minireviews, Review, Therapeutics Advances, and Topic Highlight, in the fields of allergy, anesthesiology, cardiac medicine, clinical genetics, clinical neurology, critical care, dentistry, dermatology, emergency medicine, endocrinology, family medicine, gastroenterology and hepatology, geriatrics and gerontology, hematology, immunology, infectious diseases, internal medicine, obstetrics and gynecology, oncology, ophthalmology, orthopedics, otolaryngology, pathology, pediatrics, peripheral vascular disease, psychiatry, radiology, rehabilitation, respiratory medicine, rheumatology, surgery, toxicology, transplantation, and urology and nephrology.

INDEXING/ABSTRACTING

World Journal of Clinical Cases (*WJCC*) is now indexed in PubMed, PubMed Central, Science Citation Index Expanded (also known as SciSearch®), and Journal Citation Reports/Science Edition. The 2018 Edition of Journal Citation Reports cites the 2017 impact factor for *WJCC* as 1.931 (5-year impact factor: N/A), ranking *WJCC* as 60 among 154 journals in Medicine, General and Internal (quartile in category Q2).

EDITORS FOR THIS ISSUE

Responsible Assistant Editor: *Xiang Li*
Responsible Electronic Editor: *Yun-XiaoJian Wu*
Proofing Editor-in-Chief: *Lian-Sheng Ma*

Responsible Science Editor: *Ying Dou*
Proofing Editorial Office Director: *Jin-Lei Wang*

NAME OF JOURNAL
World Journal of Clinical Cases

ISSN
ISSN 2307-8960 (online)

LAUNCH DATE
April 16, 2013

FREQUENCY
Semimonthly

EDITORS-IN-CHIEF
Sandro Vento, MD, Department of Internal Medicine, University of Botswana, Private Bag 00713, Gaborone, Botswana

EDITORIAL BOARD MEMBERS
All editorial board members resources online at <http://www.wjgnet.com/2307-8960/editorialboard.htm>

EDITORIAL OFFICE
Jin-Lei Wang, Director

World Journal of Clinical Cases
Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA
Telephone: +1-925-2238242
Fax: +1-925-2238243
E-mail: editorialoffice@wjgnet.com
Help Desk: <http://www.f6publishing.com/helpdesk>
<http://www.wjgnet.com>

PUBLISHER
Baishideng Publishing Group Inc
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA
Telephone: +1-925-2238242
Fax: +1-925-2238243
E-mail: bpgoffice@wjgnet.com
Help Desk: <http://www.f6publishing.com/helpdesk>
<http://www.wjgnet.com>

PUBLICATION DATE
November 6, 2018

COPYRIGHT

© 2018 Baishideng Publishing Group Inc. Articles published by this Open Access journal are distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license.

SPECIAL STATEMENT

All articles published in journals owned by the Baishideng Publishing Group (BPG) represent the views and opinions of their authors, and not the views, opinions or policies of the BPG, except where otherwise explicitly indicated.

INSTRUCTIONS TO AUTHORS

<http://www.wjgnet.com/bpg/gerinfo/204>

ONLINE SUBMISSION

<http://www.f6publishing.com>

Possible connection between elevated serum α -fetoprotein and placental necrosis during pregnancy: A case report and review of literature

Meng-Yao Yu, Lei Xi, Jie-Xin Zhang, Shi-Chang Zhang

Meng-Yao Yu, Jie-Xin Zhang, Shi-Chang Zhang, Department of Laboratory Medicine, the First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu Province, China

Lei Xi, Department of Pathology, the First Affiliated Hospital of Nanjing Medical University, Nanjing 210029, Jiangsu Province, China

ORCID number: Meng-Yao Yu (0000-0001-8707-355X); Lei Xi (0000-0003-2181-4970); Jie-Xin Zhang (0000-0003-1407-7562); Shi-Chang Zhang (0000-0002-6587-2518).

Author contributions: Yu MY and Xi L participated in data collection; Zhang JX and Zhang SC conceived and coordinated the study; all authors participated in manuscript writing.

Supported by National Natural Science Foundation of China, Nos. 81501817 and 81671836; Natural Science Youth Foundation of Jiangsu Province, No. BK20151029; and the Key Laboratory for Laboratory Medicine of Jiangsu Province of China, No. ZDXKB2016005.

Informed consent statement: Informed consent was obtained from the patient for publication of this report and any accompanying images.

Conflict-of-interest statement: We declare that we do not have any commercial or associative interest that represents a conflict of interest in connection with the work submitted.

CARE Checklist (2013) statement: The authors have read the CARE Checklist (2013), and the manuscript was prepared and revised according to the CARE Checklist (2013).

Open-Access: This article is an open-access article, which was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Manuscript source: Unsolicited manuscript

Correspondence to: Shi-Chang Zhang, MD, PhD, Assistant Professor, Department of Laboratory Medicine, the First Affiliated Hospital of Nanjing Medical University, Guangzhou Road 300, Nanjing 210029, Jiangsu Province, China. zsc78@yeah.net
Telephone: +86-25-68103450

Received: July 31, 2018

Peer-review started: July 31, 2018

First decision: August 20, 2018

Revised: August 23, 2018

Accepted: August 28, 2018

Article in press: August 28, 2018

Published online: November 6, 2018

Abstract

Placenta previa is the main cause of bleeding throughout pregnancy, and it is associated with serious complications, such as infection, that lead to a poor prognosis. Gynecological sonography is recommended as the first-line examination technique for the surveillance and determination of vaginal bleeding and for early intervention. We report the case of a patient with gradually expanded hypoechoic lesion and extremely high serum α -fetoprotein level during her third trimester, and discuss their potential relationship in evaluating the progression of placental necrosis.

Key words: Serum α -fetoprotein; Intermittent bleeding; Necrosis; Gynecological sonography; Placenta previa

© The Author(s) 2018. Published by Baishideng Publishing Group Inc. All rights reserved.

Core tip: Placental necrosis with extremely high mater-

nal serum α -fetoprotein (AFP) is rare. We reported a 23-year-old female patient with central placenta previa suffered from repeated vaginal bleeding. Follow-up ultrasonography revealed a gradually enlarging hypoecho between the amniotic sac and the uterine myometrium. Until 32 wk of gestation, laboratory results showed extremely elevated maternal serum AFP. Both intraoperative exploration of the placenta and histological examination demonstrated the hypoechoic area was necrotic tissue. To our knowledge, this is the first report of a rare case of extreme AFP level in placental necrosis. Clinicians should consider the combination usage of quantitative ultrasound imaging and AFP as a practical tool for assessing placental lesions.

Yu MY, Xi L, Zhang JX, Zhang SC. Possible connection between elevated serum α -fetoprotein and placental necrosis during pregnancy: A case report and review of literature. *World J Clin Cases* 2018; 6(13): 675-678 Available from: URL: <http://www.wjgnet.com/2307-8960/full/v6/i13/675.htm> DOI: <http://dx.doi.org/10.12998/wjcc.v6.i13.675>

INTRODUCTION

Placenta previa refers to a clinical situation in which the lower edge of the placenta reaches and covers the internal orifice of the uterus, and its bulk position is lower than that of the fetal presentation^[1]. During the third trimester, both irregular contractions and enlargement of the lower segment of the uterus cause a separation of the uterine wall and the placenta leading to sudden and repeated abdominal pain and vaginal bleeding^[2]. α -fetoprotein (AFP) is currently used to predict the quality of the fetus. Its elevation in amniotic fluid may indicate the possibility of anencephalus or neural tube defects^[3]. Moreover, the presence of incipient abortion or stillborn fetus is associated with the sudden upregulated AFP in maternal serum, which could reach 380-500 ng/mL.

CASE REPORT

A 23-year-old female patient at 14 wk of gestation was admitted for vaginal bleeding. This was the patient's first pregnancy with no medical history of miscarriage or abortion. Gynecological sonography showed that the lower margin of the placenta completely covered the cervix, and there was a 3.1 cm \times 1.5 cm hypoechoic area between the amniotic sac and the uterine myometrium that had no significant blood flow signal. A clinical diagnosis of central placenta previa combined with a risk of preterm labor was promptly made. Three weeks later when the patient was discharged from the hospital, repeated gynecological sonography was performed and showed that the hypoechoic area had enlarged to 6.0 cm \times 2.4 cm. She received outpatient follow-up at 19 wk of gestation, and the results revealed

that hypoechoic area measured approximately 5.5 cm \times 1.5 cm \times 4.7 cm. No intervention protocol was carried out at that time. She was readmitted to our hospital at 32 wk of gestation on February 27, 2015 for a sudden volume of vaginal bleeding without significant abdominal pain. Considering that she had a previous history of central placenta previa (very likely with hematoma) and intermittent bleeding, and was in her third trimester when massive hemorrhage might occur at any time, a comprehensive examination including gynecological sonography, blood/urine testing, blood coagulation test, electrocardiogram, and fetal heart rate monitoring were performed. As shown in Figure 1, ultrasound examination revealed a heterogeneous echo measuring 4.2 cm \times 3.5 cm. Blood tests are detailed in Table 1. Notably, her serum AFP level was extremely elevated at 1032 ng/mL. One day later, doctors performed a caesarean surgery. After the baby was delivered, doctors examined the placenta and found an abnormal area with black appearance between the placenta and the uterine myometrium. It was then confirmed to be necrosis tissue by histopathological examination (Figure 2), and its location was approximate to the hypoechoic area indicated in the pre-operation ultrasound examination. Before she was discharged from the hospital, we performed another blood test and the result showed that her serum AFP level had returned to baseline. As for the baby, its weight was 1550 g. Apgar was 9 at the first minute and was 10 at the tenth minute. It was soon admitted to the NICU for further treatment. We also followed up with the patient and her baby until this article was written. Her serum AFP level remained normal. Her baby had asthma since ten months and suffered from herpangina at one year old. The baby also had mild anemia (99 g/L hemoglobin).

DISCUSSION

We reported a case of central placenta previa accompanied by intermittent bleeding. Follow-up gynecological sonography showed a gradual enlarging and subsequently stable hypoechoic area between the placenta and the uterine wall. Prenatal testing of peripheral blood revealed elevated levels of C-reactive protein (CRP) and neutrophils, and a severely increased serum AFP level without a history of hepatitis, miscarriage, or abortion. Later during a caesarean surgery, necrosis of the placenta was confirmed.

The placenta is the exclusive source of oxygen and nutrients for the fetus. Diffusion to and from the maternal circulatory system is essential for maintaining these life-sustaining functions of the placenta. The basic mechanism of placental abruption is vascular damage caused by a spasm or sclerosis of small spiral arteries followed by hematoma formation between the placenta and the bottom of the decidua and finally placental separation from the uterus^[4]. One report suggests that maternal viral infection, such as HBV and HIV infection, may increase the necrotic rate of placental trophoblastic

Table 1 Prenatal clinical laboratory data of the patient

Name	Items	Result	Reference range
Blood routine examination	WBC	$13.79 \times 10^9/L$	$3.50-9.50 \times 10^9/L$
	LY	$0.84 \times 10^9/L$	$1.10-3.20 \times 10^9/L$
	MO	$0.43 \times 10^9/L$	$0.10-0.60 \times 10^9/L$
	NE	$12.50 \times 10^9/L$	$1.80-6.30 \times 10^9/L$
	EO	$0.00 \times 10^9/L$	$0.02-0.52 \times 10^9/L$
	BA	$0.02 \times 10^9/L$	$0.00-0.06 \times 10^9/L$
	RBC	$2.98 \times 10^{12}/L$	$3.80-5.10 \times 10^{12}/L$
	HGB	90 g/L	115-150 g/L
	PLT	$212 \times 10^9/L$	$125-350 \times 10^9/L$
	CRP	12.00 mg/L	0-8 mg/L
Coagulation function tests	PT	11.80 s	11 ± 3 s
	INR	0.98	-
	APTT	19.10 s	24.5 ± 10 s
	FIB	2.44 g/L	2.0-4.0 g/L
	TT	15.90 s	18 ± 3 s
	D-D	1.08 mg/L	< 0.55 mg/L
Biochemistry examination	HbA1c	4.90%	4.0-6.4 %
	ALT	15.7 U/L	7-40 U/L
	AST	20.3 U/L	13-35 U/L
Thyroid function tests	FT3	2.94 pmol/L	3.10-6.80 pmol/L
	TSH	1.09 mIU/L	0.27-4.20 mIU/L
	FT4	14.23 pmol/L	12.00-22.00 pmol/L
Tumor markers	AFP	1032.00 ng/mL	< 20.0 ng/mL
	CEA	0.43 ng/mL	< 4.7 ng/mL
	CA125	168.20 U/mL	< 35.0 U/mL
	CA199	26.47 U/mL	< 27.0 U/mL
	NSE	17.05 ng/mL	< 16.3 ng/mL

WBC: White blood cell; LY: Lymphocyte; MO: Monocyte; NE: Neutrophilic; ECO: Eosinophil; BA: Basophil; RBC: Red blood cell; HGB: Hemoglobin; PLT: Platelet; CRP: C-reactive protein; PT: Prothrombin time; INR: International normalized ratio; APTT: Activated partial thromboplastin time; FIB: Fibrinogen; TT: Thrombin time; D-D: D-dimer; HbA1c: Glycated hemoglobin; ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; FT3: Free triiodothyronine; TSH: Thyroid stimulating hormone; FT4: Free thyroxine; AFP: α -fetoprotein; CEA: Carcinoembryonic antigen; CA125: Carbohydrate antigen 125; CA199: Carbohydrate antigen 199; NSE: Neuron-specific enolase.



Figure 1 Ultrasound examination on February 27, 2015 showed a heterogeneous echo measuring 4.2 cm \times 3.5 cm.

cells^[5]. If the separated area is small, bleeding quickly stops. Most patients have no clinical symptoms or are unaware of the bleeding. Only clots that remain on the maternal surface of the placenta are often discovered on a postpartum examination. However, if the separated area is large enough to cause coagulation failure, a hematoma will form in the posterior aspect of the placenta and progressively expand followed by tissue necrosis, as was the case in our study.

Maternal serum AFP is synthesized from fetal hepa-

toocytes and the yolk sac. It enters maternal circulation through the placenta. The placenta serves as a barrier. But when placental necrosis happens, the separation of placenta and uterus leads to barrier leak, which will increase the amount of AFP delivered from the fetus to the mother. Studies have demonstrated that maternal serum AFP is clinically elevated in cases of a morbidly adherent placenta, and it is a secondary indicator of placenta previa^[6-8]. However, until now there have been no reports emphasizing its relationship with the degree of placental damage (such as hematoma necrosis). This is the first report of a rare case of extreme AFP level in placental necrosis. Although color Doppler flow imaging (CDFI) widely used in gynecological sonography can distinguish a blood flow inside a hematoma or the uterine myometrium^[9], it only evaluates ongoing lesions, not already established lesions.

An insufficient placental blood supply may lead to ischemia-reperfusion damage and fetal growth restriction^[10]. Therefore, intervention should be promptly performed when the size of placental necrosis reaches a tipping point that is very likely to induce irreversible injuries to the fetus and the mother. The combination of quantitative ultrasound imaging and maternal-fetal interface biochemical markers (such as AFP in our case) is a valuable assessing tool for this situation.

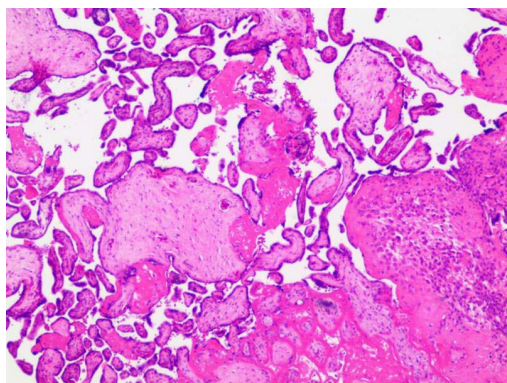


Figure 2 Hematoxylin and eosin staining showed placental necrosis (magnification $\times 100$).

ARTICLE HIGHLIGHTS

Case characteristics

A 23-year-old female patient at 32 wk of gestation was admitted for vaginal bleeding.

Clinical diagnosis

Central placenta previa with repeated intermittent vaginal bleeding.

Laboratory diagnosis

Laboratory investigations showed moderately elevated neutrophils and C-reactive protein as well as extremely elevated α -fetoprotein (AFP) (1032 ng/mL).

Imaging diagnosis

Ultrasonography revealed a heterogeneous and gradually enlarging hypoechoic area (reached 4.2 cm \times 3.5 cm before labor) between the amniotic sac and the uterine myometrium.

Pathological diagnosis

After caesarean, histological examination of placenta demonstrated the hypoechoic area was necrotic tissue.

Treatment

A caesarean surgery with placental exploration was performed.

Related reports

This is the first report of a rare case of placental necrosis with extremely elevated serum AFP.

Experiences and lessons

The combination of quantitative ultrasound imaging and AFP is valuable in assessing maternal-fetal interface lesion during pregnancy.

REFERENCES

- 1 **Silver RM.** Abnormal Placentation: Placenta Previa, Vasa Previa, and Placenta Accreta. *Obstet Gynecol* 2015; **126**: 654-668 [PMID: 26244528 DOI: 10.1097/AOG.0000000000001005]
- 2 **Jung EJ,** Cho HJ, Byun JM, Jeong DH, Lee KB, Sung MS, Kim KT, Kim YN. Placental pathologic changes and perinatal outcomes in placenta previa. *Placenta* 2018; **63**: 15-20 [PMID: 29486851 DOI: 10.1016/j.placenta.2017.12.016]
- 3 **Krantz DA,** Hallahan TW, Sherwin JE. Screening for open neural tube defects. *Clin Lab Med* 2010; **30**: 721-725 [PMID: 20638584 DOI: 10.1016/j.cll.2010.04.010]
- 4 **Stepan H,** Geipel A, Schwarz F, Krämer T, Wessel N, Faber R. Circulatory soluble endoglin and its predictive value for pre-eclampsia in second-trimester pregnancies with abnormal uterine perfusion. *Am J Obstet Gynecol* 2008; **198**: 175.e1-175.e6 [PMID: 18226617 DOI: 10.1016/j.ajog.2007.08.052]
- 5 **Liu Y,** Zhang J, Zhang R, Li S, Kuang J, Chen M, Liu X. [Relationship between the immunohistopathological changes of hepatitis B virus carrier mothers' placentas and fetal hepatitis B virus infection]. *Zhonghua Fuchanke Zazhi* 2002; **37**: 278-280 [PMID: 12133400]
- 6 **Lyell DJ,** Faucett AM, Baer RJ, Blumenfeld YJ, Druzin ML, El-Sayed YY, Shaw GM, Currier RJ, Jelliffe-Pawlowski LL. Maternal serum markers, characteristics and morbidly adherent placenta in women with previa. *J Perinatol* 2015; **35**: 570-574 [PMID: 25927270 DOI: 10.1038/jp.2015.40]
- 7 **Kelly RB,** Nyberg DA, Mack LA, Fitzsimmons J, Uhrich S. Sonography of placental abnormalities and oligohydramnios in women with elevated alpha-fetoprotein levels: comparison with control subjects. *AJR Am J Roentgenol* 1989; **153**: 815-819 [PMID: 2476009 DOI: 10.2214/ajr.153.4.815]
- 8 **Gagnon A,** Wilson RD; Society of Obstetricians and Gynaecologists of Canada Genetics Committee. Obstetrical complications associated with abnormal maternal serum markers analytes. *J Obstet Gynaecol Can* 2008; **30**: 918-932 [PMID: 19038077 DOI: 10.1016/S1701-2163(16)32973-5]
- 9 **Cali G,** Forlani F, Foti F, Minneci G, Manzoli L, Flacco ME, Buca D, Liberati M, Scambia G, D'Antonio F. Diagnostic accuracy of first-trimester ultrasound in detecting abnormally invasive placenta in high-risk women with placenta previa. *Ultrasound Obstet Gynecol* 2018; **52**: 258-264 [PMID: 29532529 DOI: 10.1002/uog.19045]
- 10 **Thaete LG,** Qu XW, Neerhof MG, Hirsch E, Jilling T. Fetal Growth Restriction Induced by Transient Uterine Ischemia-Reperfusion: Differential Responses in Different Mouse Strains. *Reprod Sci* 2018; **25**: 1083-1092 [PMID: 28946817 DOI: 10.1177/1933719117732160]

P- Reviewer: Khajehei M, Zhang X **S- Editor:** Ji FF

L- Editor: Filipodia **E- Editor:** Tan WW





Published by **Baishideng Publishing Group Inc**
7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
Help Desk: <http://www.f6publishing.com/helpdesk>
<http://www.wjgnet.com>

