Int J Clin Exp Med 2015;8(9):16798-16802
www.ijcem.com /ISSN:1940-5901/IJCEM0012197

Case Report

Chorangiocarcinoma: a case report and clinical review

Bin Huang, Yan-Ping Zhang, Dan-Fang Yuan, Rui Yang, Chun Wang, Rui-Fang Wu

Department of Obstetrics and Gynecology, Peking University Shenzhen Hospital, 518036, China

Received July 1, 2015; Accepted August 28, 2015; Epub September 15, 2015; Published September 30, 2015

Abstract: Objective: We describe a case of chorangiocarcinoma, a chorangioma covered by an abnormal trophoblastic proliferation, presenting in a term placenta and in an asymptomatic pregnancy. Evidence of metastasis was found on follow-up of the mother. Materials and methods: The lesion Was diagnosed by pathologic examination after cesarian section at term for fetal macrosomia, performed because of the abnormal gross findings in the placenta. After uncomplicated delivery, a thealthy child was born and the placent was expelled completely. There was follow-up in the mother and the child, up to 19 months after delivery. Results: Gross examination of the placenta showed a well-demarcated and grayish yellow-white mass, bulging paracentrally from the fetal surface. Histology revealed a trophoblastic proliferation inside a chorangioma, consisting of extensive central necrosis and high mitotic activity. Immunohistochemical staining showed strong intensity for hCG, PLAP, CK, CD31 (+) and CD34 (+); Ki67 showed a high proliferation index. Follow-up revealed metastasis in the mother and chemotherapy were performed at 3 months postpartum. Conclusion: This is only the sixth reported case of chorangiocarcinoma of the placenta in the literature. However, no metastasis were discovered in the reported case, which was not identical to ours. Follow-up revealed metastasis at lung in the mother. Chorangiocarcinoma should be carefully examined and followed-up.

Keywords: Chorangiocarcinoma, placenta, chorangioma, trophoblastic disease, choriocarcinoma

Introduction

Chorangiocarcinoma is an exceedingly rare placental lesion and only five cases have been reported so far in the literature [1-5]. In this article we report a case of a chorangioma with trophoblastic proliferation presented in a term placenta, and give a clinical review of the topic.

Medical records

A healthy 27-year-old primigravida was uneventful in her pregnancy. Her past medical and family histories were unremarkable. Active labor started on the 39th week of gestation and a cesarean section was performed due to fetal macrosomia. The infant was born with a weight of 3950 g and 9/10 Apgar scores, the physical examination was normal. The expulsion of the placenta was spontaneously and completely. Grossly, it contained a prominent mass which resembling the consistency with an infarct absolutely.

(**Figure 1**). The placentae were submitted for pathologic examination.

Maternal serum beta-hCG levels didn't dropped into negative values after delivery, and began to increase at 6 weeks postpartum (**Figure 2**), with slight vaginal bleeding. Serum human placental lactogen totaled 0.1 mg/ml. A suspected 3×3 centimeter metastasis on the right lung of the mother was found in a chest CT scan (3 months after delivery) at 3 months postpartum (3 months after delivery). A CT scan of the brain was normal. An MRI scan of the pelvic cavity was suspected for metastasis at the pubic symphysis, but an ECT scan of the whole bone proved normal. Ultrasound examination of the uterus and adnexa were also found to be normal. Uterine curettage surgery for pathologic examination revealed a little incomplete endometrial tissue with change of proliferation.

The results of the infant brain, abdominal ultrasound and chest x-ray were negative for metastatic lesions. The infant serum beta-hCG was normal.

Figure 1. The abnormal gross findings of lesion in the placenta.

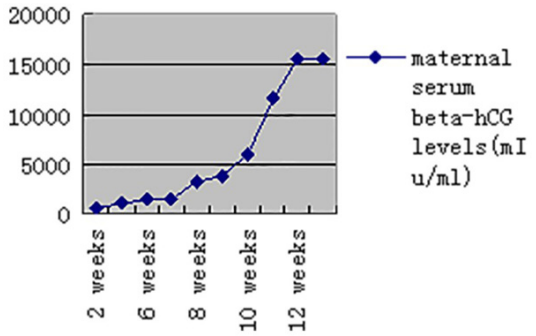

Figure 2. The chang of maternal serum beta-hCG levels postpartum.

Placental pathology

Gross findings

The placenta weighed 500 g (trimmed weight) and the measured size was 19×17×3.5 cm. A firm grayish yellow-white mass was paracentrally bulged from the fetal surface of the placenta at the margin which was grossly consistent with an infarct. The lesion was well-demarcated, measuring 5×4.5×3.5 cm. The rest of the placental parenchyma, membranes, umbilical cord and large chorionic blood vessels were unremarkable.

Microscopic findings and immunohistochemical study

The lesion was sectioned, fixed in 10% formalin overnight, and submitted for processing. Routine sections of grossly normal placenta, cord, and membranes were also submitted. Microscopic examination (**Figure 3**) revealed an abnormal trophoblastic proliferation in conjunction with a chorangioma in the stroma of chorionic villi. The unique morphologic features of proliferation were found in both epithelial and vascular components of chorionic. The cells in the epithelial compartment formed solid masses with massive central coagulation necrosis surrounded by a few (three to six) layers of viable epithelial tumor cells. The epithelial cells were remarkably proliferative with frequent mitotic figures. The vascular component was similar to chorangiosis or chorangioma with numerous intercalated vacular channels in the villous stroma. The malignant component was surrounded by an abasement membrane without evidence of invasion.

Immunohistochemical staining showed strong intensity for hCG, PLAP, CK, CD31 (+) and CD34 (+) in the lesion. Ki67 showed a high proliferation index.

Mature villi, normal membranes, and trivascular umbilical cords were shown in the histologic evaluation result of the placental tissue.

Treatment and follow-up

The mother performed EMA-EP chemotherapy at 3 months postpartum. Maternal serum beta-hCG levels fell to normal after three courses of chemotherapy (**Figure 4**). The second CT scan of the chest showed the pulmonary lesions had significantly narrowed. The patient refused consolidation chemotherapy due to the side effects of chemotherapy. The patient was followed up for 36 months of outpatient service without recurrence and the pulmonary lesions completely disappeared.

Physical examination of the infant remained normal with no signs of metastasis on the follow-up.

Discussion

The name chorangiocarcinoma was coined by Jauniaux et al. in 1988 [1], who considered this lesion as a true choriocacinoma which should be included in the category of malignant gestational trophoblastic disease. Chorangiocarcinoma is an exceedingly rare placental lesion and only five cases have been reported so far in the literature [1-5]. Khong pointed out that such lesions were probably more common than the

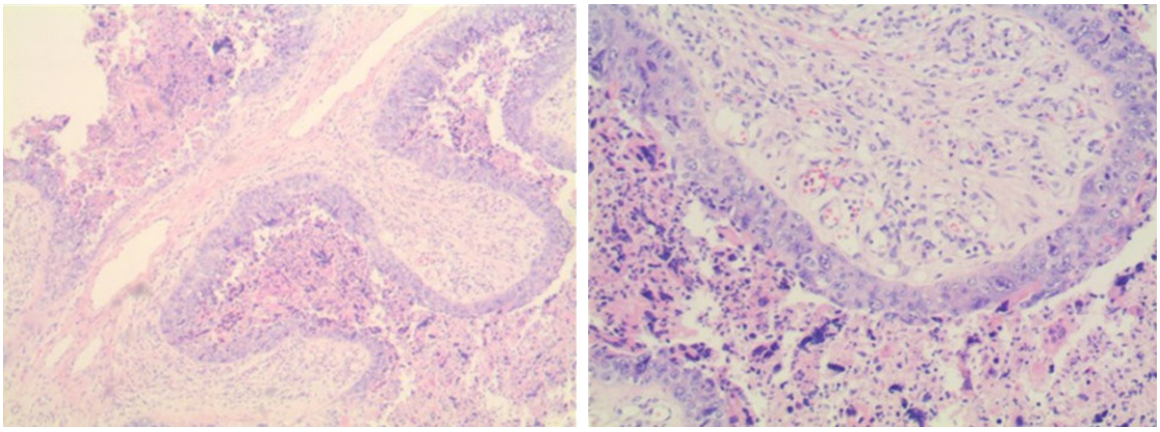

Figure 3. The Microscopic findings of the lesion in the placenta.

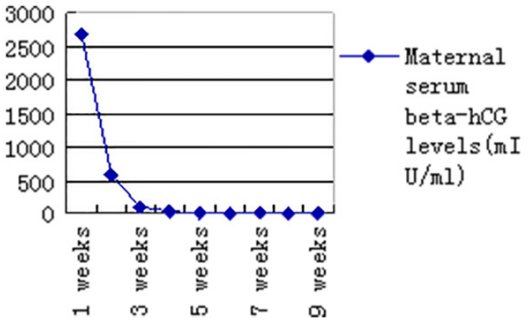

Figure 4. The chang of maternal serum beta-hCG levels after chemotherapy.

rare reports suggested, and that "chorangioma with trophoblastic proliferation" was a more appropriate descriptive term [7, 8]. The tumor is usually an incidental finding in a term or a near-term placenta. Grossly, it is a discrete intraplacental lesion resembling a placental infarct. Microscopically, it is a lesion characterized by an abnormal trophoblastic proliferation in conjunction with a hypervascular chorangiosis (or chorangioma) in the stroma of chorionic villi. The unique morphologic features of proliferation in both epithelial and vascular components of chorionic villi distinguished chorangiocarcinoma from other trophoblastic tumors and tumor-like lesions.

The etiology and pathogenesis in the development of chorangiocarcinoma are undetermined. The lesion may represent a chorangioma with associated trophoblastic hyperplasia, a true trophoblastic neoplasm with a reactive chorangiosis response, a reactive lesion of trophoblastic cells and villous vascular channels, or a collision tumor of chorangioma (incidence of approximately 1/100 placentas [6]) and gestational choriocarcinoma (1/160000 normal pregnancies [6]). Clinical experience with chorangiocarcinoma is very limited but the available data from previously reported cases reveal that patients have an uneventful postpartum course and do not develop persistent GTD [1-5].

Our case is only the sixth reported case of chorangiocarcinoma of the placenta, no metastasis were discovered in the previously reported five case, however, this was not identical to ours findings: the follow-up revealed metastasis in the lung of the mother at 3 months postpartum. The chorangioma formed as a shield around the trophoblastic proliferation, and stromal invasion was absent, in contrast to classic choriocarcinoma. In the five reported cases [1-5], not one case of chorangiocarcinoma showed evidence of tumor spread at delivery, nor did it develop during follow-up. This suggests a benign clinical behavior. However, since metastases of intraplacental choriocarcinoma had been described in both mother and newborn [9-25], this may explain that chorangiocarcinoma may have a malignant course, as suggested by this report. More cases need to be studied to evaluate this claim.

In summary, we describe the sixth case of chorangiocarcinoma and the first case in the literature (to the authors' knowledge) of a metastasis in the lung of the mother. As untreated choriocarcinoma is lethal, all patients with diagnostic choriocarcinoma and choriocarcinoma in situ presented in the placenta require immediate clinical evaluation for metastatic disease

(e.g., serum markers, radiographic studies). The mothers and infants from pregnancies with a chorangiocarcinoma should be carefully examined and followed-up. Pathologic examination of placentae in all cases of abnormal pregnancy and in those with an abnormal gross placental examination will be helpful for diagnosis and treatment of these rare lesions.

Acknowledgements

The authors thank Dr Ming-Hua Luo from the department of Pathology, Peking University Shenzhen Hospital, Dr Min Xiong from the department of Pathology, First Affiliated Hospital of Zhongshan University, and Dr Jing Xiang from the department of Pathology, Affiliated Tumor Hospital of Zhongshan University, for their diagnostic skills.

Disclosure of conflict of interest

None.

Address correspondence to: Dr. Rui-Fang Wu, Department of Obstetrics and Gynecology, Peking University Shenzhen Hospital, No. 1120 Lianhua Road, Futian District, Shenzhen 518036, China. Tel: +86 0755-83923333; Fax: +86 0755-83061340; E-mail: ruifangwudoc@sina.com

References

[1] Jauniaux E, Zucker M, Meuris S, Verhest A, Wilkin P, Hustin J. Chorangiocarcinoma: an unusual tumour of the placenta. The missing link? Placenta 1998; 9: 607-13.

[2] Trask C, Lage JM, Roberts D. A second case of "Chorangiocarcinoma" presenting in a term asymptomatic twin pregnancy: choriocarcinoma in situ with associated villous vascular proliferation. Int J Gynecol Pathol 1994; 13: 87-91.

[3] Guschman M, Schulz-Bischof K, Vogel M. Incidental chorangiocarcinoma. Case report, immunohistochemistry and theories of possible histogenesis. Pathologe 2003; 24: 124-7.

[4] Ariel I, Boldes R, Weintraub A, Reinus C, Beller U, Arbel R. Chorangiocarcinoma: a case report and review of the literature. Int J Gynecol Pathol 2009; 28: 267-71.

[5] Faes T, Pecceu A, Van Calenbergh S, Moerman P. Chorangiocarcinoma of the placenta: A case report and clinical review. Placenta 2012; 33: 658-61.

[6] Bernischke K, Kaufman P. Pathology of the human Placenta, 2nd edition. New York: Springer-Verlag; 1990. pp. 91-4.

[7] Khong TY. Chorangioma with trophoblastic proliferation. Virchoes Arch 2000; 436: 167-71.

[8] Ogino S, Redline RX. Villous capillary lesions of the placenta: distinctions between chorangioma,chorangiomatosis and chorangiosis. Hum Pathol 2000; 31: 945-54.

[9] Liu J, Guo L. Intraplacental choriocarcinoma in a term placenta with both maternal and infantile metastasis:a case report and review of the literature. Gynecol Oncol 2006; 103: 1147-51.

[10] Dor Y, Keshet E. Ischemia-driven angiogenesis. Trends Cardiovasc Med 1997; 7: 289-94.

[11] Reshetnikova OS, Burton GJ, Milavanov AP, Fokin EI. Increased incidence of placental choriocarcinoma in high altitude pregnancies: hypobaric hypoxia as a possible etiologic factor. Am J Obstet Gynecol 1996; 174: 557-61.

[12] Vuorela P, Hatva E, Lymboussaki A, Kaipainen A, Joukov V, Persico MG, Alitalo K, Halmesmäki E. Exprssion of vascular endothelial growth factor and placental growth factor in human placent. Biol Reprod 1997; 56: 489-94.

[13] Avril MF, Mathieu A, Kalifa C, Caillou C. Infantile choriocarcinoma with cutaneous tumors. A additional case and review of the literature. J Am Acad Dermatol 1986; 14: 918-27.

[14] Tidy JA, Rustin GJ, Newlands ES, Foskett M, Fuller S, Short D, Rowden P; Presentation and management of choriocarcinoma after nonmolar pregnancy. Br J Obstet Gynaecol 1995; 102: 715-19.

[15] Isaacs H. Cutaneous metastases in neonates: a review. Pediatr Dermatol 2011; 28: 85-93.

[16] McNally OM, Tran M, Fortune D, Quinn MA. Successful treatment of mother and baby with metastatic choriocarcinoma. Int J Gynecol Cancer 2002; 12: 394-8.

[17] Yoon JM, Burns RC, Malogolowkin MH, Mascarenhas L.Treatment of infantile choriocarcinoma of the liver. Pediatric Blood and Cancer 2007; 49: 99-102.

[18] Getrajdman J, Kolev V, Brody E, Chuang L; Case of maternal and infantile choriocarcinoma following normal pregnancy. Gynecol Oncol Case Rep 2012; 2: 102-4.

[19] Ryu N, Ogawa M, Matsui H, Usui H, Shozu M. The clinical characteristics and early detection of postpartum choriocarcinoma. Int J Gynecol Cancer 2015; 25: 926-30.

[20] Yamamoto E, Niimi K, Shinjo K, Yamamoto T, Fukunaga M, Kikkawa F. Identification of causative pregnancy of gestational trophoblastic neoplasia diagnosed during pregnancy by short tandem repeat analysis. Gynecol Oncol Case Rep 2014; 18: 3-6.

[21] Sauvestre F, Carles D, Faure M, Taillat F, Le Boulanger F, Castain C, André G, Pelluard F. Incidental intraplacental gestational choriocarcinoma on a full-term placenta. See comment

in PubMed Commons below. Ann Pathol 2014; 34: 119-23.
[22] Hovav Y, Almagor M, Golomb E, Beller U. Intraplacental choriocarcinoma in residual placenta 8 months postpartum. Eur J Obstet Gynecol Reprod Biol 2014; 176: 199-200.
[23] Jacques SM, Qureshi F. Intraplacental choriocarcinoma without associated maternal or fetal metastases. Int J Gynecol Pathol 2011; 30: 364-5.
[24] Kanehira K, Starostik P, Kasznica J, Khoury T. Primary intraplacental gestational choriocarcinoma: histologic and genetic analyses. Int J Gynecol Pathol 2013; 32: 71-5.
[25] Rørne D J, Kirschner B. Intraplacental choriocarcinoma. Ugeskr Laeger 2010; 172: 2769-70.