Placental chorioangioma: A rare cause of uterus larger than date

Maznun Mat Jidin, MMed[1], Yafizah Yahaya, MMed[2], Sakinah Md Rifin, MMed[3], Nur Izzati Mohd Sabri, MD[3]

[1]Klinik Kesihatan Triang,Triang, Pahang, Malaysia, [2]Family Medicine Unit, Faculty of Medicine and Health Sciences, Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia, [3]Klinik Kesihatan Bandar 32, Bera, Pahang, Malaysia

SUMMARY

A placental chorioangioma is a relatively uncommon placental tumour with an estimated 1% incidence worldwide. As most placenta chorioangiomas are small in size, they are not diagnosed prenatally and are clinically insignificant. However, as tumour size increases, so does the risk of adverse outcomes. A 23-year-old woman, a primigravida, presented to a primary care clinic at 22 weeks of gestation with excessive weight gain and uterus fundal height larger than her gestational age. However, no abnormalities were detected. The placental chorioangioma diagnosis was made two weeks later via transabdominal ultrasonography. The pregnancy was subsequently complicated by an early foetal growth restriction and a spontaneous premature delivery, resulting in a poor outcome for the foetus. A histopathological examination confirmed the diagnosis of chorioangioma. Despite the fact that the outcome of chorioangioma varies depending on its size and other complications, early detection is important to ensure effective maternal and foetal surveillance. Early referral to a feto-maternal medicine unit and shared care management with primary care are crucial for developing an appropriate patient care plan.

INTRODUCTION

Placental chorioangioma is a type of placental tumour with an estimated 1% incidence worldwide.[1] This vascular tumour originates from the primitive chorionic mesenchymal tissue and is thought to be caused by abnormal vessel proliferation at various stages of differentiation in the fibrous stroma.[2] The majority of the chorioangioma placenta are small in size, therefore making them clinically not significant and not diagnosed prenatally. However, the risk of adverse outcomes increases as the tumour size increases.[1]

Large chorioangioma (> 5 cm) occurrences are rare, ranging from 0.11% to 0.29%.[3] The clinical presentations vary from asymptomatic to found incidentally from a routine antenatal sonography. The chorioangioma is typically a well-defined solid mass which protrudes into the amniotic cavity.[4] Placental chorioangioma can be differentiated from other placental tumour or masses by Colour Doppling Imaging (CDI)[3] which indicates the presence of a single blood vessel feeding the lesion or significant vascularity within the mass.[4] Complications that can arise from placental chorioangioma are polyhydramnion, pre-eclampsia, preterm delivery, foetal anaemia, cardiomegaly, hydrops fetalis, foetal growth restriction or foetal demise.[3] Management of this tumour is mainly tailored to the complications such as amnio reduction to reduce excessive liquor and intrauterine transfusions for foetal anaemia.[5] More interventions techniques are being explored to arrest the underlying pathophysiology of arterio-venous shunt within the chorioangioma.[5]

CASE PRESENTATION

A 23-year-old woman, with a background of primary subfertility and obesity, had a spontaneous conception. Her antenatal check-up was conducted at a health clinic. Her condition was uneventful until the early second trimester when she was found to have excessive weight gain ranging from 700 to 1500 g within 2 weeks, with gestational diabetes mellitus ruled out. At 22 weeks of gestation, her fundal height was 5 cm larger than her gestational age. However, no abnormality was found in the transabdominal sonography. The ultrasound finding showed a singleton foetus with growth corresponding to 22 weeks of gestation, normal liquor volume with no abnormality detected. Two weeks later, the fundal height was 30 cm, 6 cm larger than her actual gestation period. Repeated transabdominal ultrasound revealed a hypoechoic placental mass with the size of 8 cm x 5cm (Figure 1). The foetal growth was already restricted as evidenced by dropping a centile on the foetal growth chart. Subsequently, she was referred to the nearest tertiary hospital for an appointment with an obstetrician and for an ultrasound Doppler imaging.

However, at 26 weeks of gestation, 4 days prior to her hospital appointment, she had a premature contraction and was sent to hospital. Her transabdominal ultrasound finding showed a placental mass with the size of 12 cm x 7 cm and no vascular uptake. The doppler imaging of the umbilical artery revealed an absent end diastolic flow wave. She was admitted after receiving prematurity counselling and her delivery was expedited by 3 days. A baby boy was delivered with the birth weight of 495 g and poor respiratory effort. He succumbed to 1 hour of life. The placenta weighed 690 g. There was a solid mass with the size of 12 cm x 11 cm. The histopathological examination of the mass revealed chorioangioma, composed of capillary proliferation and surrounding stoma.

DISCUSSION

Placental chorioangioma, or more commonly known as chorioangioma, is the most common benign placenta

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Corresponding Author: Yafizah Yahaya
Email: yafizah@usim.edu.my

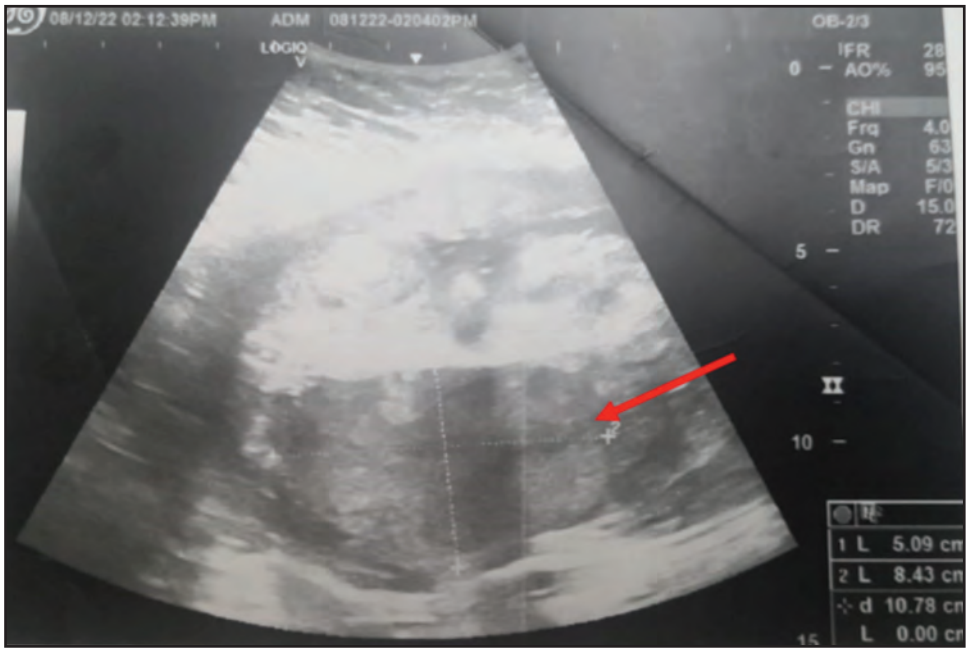


Fig. 1: A hypoechoic placental mass with the size of 8 cm x 5cm at 24 weeks period of gestation.

tumour.[3] Its incidence is 1% of all examined placenta but the exact incidence may be lower 1. A retrospective study involving 22,439 placentas found only 0.61% chorioangioma while in another study showed an even lower incidence of 0.16%.[3] Chorioangioma is thought to arise from the malformation of primitive angioblastic tissue of early placenta2 and has no malignant potential.[6] However, the tumour size plays an important role in determining the outcome of the pregnancy. Majority of the tumours are small in size, hence have no clinical significance. On the other hand, large chorioangioma incidences are rare and vary from one in 9000 to one in 50,000 pregnancies but have a higher association with maternal and foetal complications.[5]

Placental tumour is one of the causes of the uterus fundal height being larger than the gestational age. In this case, an early diagnosis of chorioangioma was undetected despite the presence of excessive weight gain and uterus being larger than date. Other causes of discrepancy of fundal height with gestational age were ruled out during the examination; however, the abnormality of the placenta was undetected due to its rare incidence. Furthermore, most chorioangioma are small and asymptomatic and may not be diagnosed prenatally. Chorioangioma can be found incidentally during routine prenatal sonography[3,4] or during maternal or foetal complications such as polyhydramnios or hydrops fetalis.[1,7]

Grayscale sonography is the primary tool used to detect chorioangioma.[3] The tumour could appear as either a hypoechoic or a hyperechoic placental mass. It may contain anechoic cystic area that may or may not contain fibrous septa. Colour Doppler imaging (CDI) is able to differentiate chorioangioma from other tumours such as partial hyatidiforme mole, placental haematoma, teratoma, degenerating fibroid and metastases with the confirmation of the presence of vascular channels in the tumour.[8] However, there are some avascular chorioangiomas where CDI dose is not able to demonstrate blood flow, similar to that seen with our patient.[3] Other than confirming chorioangioma, CDI is also important for prognosticating the pregnancy outcome and monitoring for foetal complications.[3] Magnetic resonance imaging (MRI) is useful for confirmation when the ultrasound findings are ambiguous.[8]

Polyhydramnios and foetal growth restriction are the most common complications of chorioangioma cases.[3,5] It was postulated that there is an increase in urine production associated with hyperdynamic circulation related to the arteriovenous shunting of blood and transudation of fluid from the tumour.[5] A retrospective study by Zanardini et al.[5] found that among 19 cases of chorioangioma, six cases resulted in foetal growth restriction, similar to our case. A reduction in the functional capacity of the placenta due to vascular shunting in the tumour causes inefficient nutrition and oxygen exchange within the placenta, resulting in foetal hypoxia and growth restriction. Besides that, foetal anaemia could also occur due to feto-maternal haemorrhage and microangiopathic haemolytic anaemia as a result of entrapment and destruction of foetal erythrocytes in the vascular network of chorioangioma.[5] Subsequently, foetal heart failure and hydrops fetalis may ensue.

Management of chorioangioma is based on tumour size, gestation period, foetal maturity and neonatal support, as well as the complications that occur.[5] Close prenatal surveillance is vital to constructing the plan of care and making timely decisions. For small and large-sized tumours, ultrasound surveillance can be done every six to eight weeks, and every 1 to 2 weeks, respectively.[8] If complications occur in late pregnancy, imminent delivery can be expedited. However, if it occurs during the second trimester, delivery is not an option due to foetal prematurity. The aim of the interventions is to relieve complications such as amnioreduction for polyhydramnios and intrauterine

transfusion for foetal anaemia.[5] New treatment techniques such as injection of absolute alcohol, endoscopic laser coagulation, endoscopic sutures with bipolar electrosurgery have been proposed to arrest the vascular supply in the tumour itself, as well as interstitial laser therapy to devascularise the tumour.[3,5] The success rate ranges from 50 to 65%.[5] These interventions have demonstrated good outcomes, as reported by Zanardini et al.[5] and Emilia et al.[9] However, these interventions require a well-equipped feto-maternal facility which is limited, at least in our local settings. Therefore, it is hoped that in the future, these interventions can be expanded to all tertiary hospitals, hence improving the outcome among pregnant women who have chorioangioma.

CONCLUSION

We reported a rare case of a large placental chorioangioma that was presented at primary care as excessive weight gain and uterus fundal height was larger than the gestational age. The patient had complications from chorioangioma, including foetal growth restriction and premature labour. As the outcome of chorioangioma varies and is dependent on the size and other complications, an early detection is vital to ensure that an effective maternal and foetal surveillance can be done accordingly. Early referral to the feto-maternal medicine unit is crucial to constructing a proper of plan of care for the patient.

CONFLICT OF INTEREST

The authors declare that there was no potential conflict of interest relevant to this article reported.

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