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Case Report

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Amniotic sheet and amniotic band syndrome: pitfalls in distinguishing two cases

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Abstract

Objective: We aimed to present two cases who were found to have amniotic sheet at prenatal in order to highlight the significance of differential diagnosis of amniotic band syndrome and amniotic sheet and to evaluate prenatal diagnosis and fetal outcome of two cases diagnosed with amniotic sheet.

Case: Twenty-seven-year-old pregnant woman at 22 weeks of gestation and 35-year-old pregnant woman at 18 weeks of gestation were referred to our clinic with the pre-diagnosis of amniotic band syndrome.

Conclusion: It should be remembered that the differential diagnosis of amniotic band syndrome associated with poor obstetric outcomes and severe fetal malformations and amniotic sheet is of great importance, and that the amniotic sheet is benign but may be a predisposing factor for perinatal morbidity and mortality accompanying with some poor prognostic criteria.

Key words: Amniotic band, amniotic sheet.

Amniyotik katlantı ve amniyotik bant sendromu: Birbirine karışabilen iki durum

Amaç: Amniyotik katlantı tanısı alan iki olgunun prenatal tanısı ve fetal sonucunu değerlendirmek ve amniyotik bant sendromu ile amniyotik katlantının ayırıcı tanısının önemini vurgulamak amacıyla, prenatal dönemde amniyotik katlantı tespit edilen iki olguyu sunmayı planladık.

Olgu: Yirmi yedi yaşında 22. gebelik haftasında ve otuz beş yaşında 18.gebelik haftasındaki 2 olgu amniyotik bant sendromu ön tanısıyla perinatoloji kliniğimize refere edildi.

Sonuç: Amniyotik katlantı ile ciddi fetal malformasyonlar ve kötü obstetrik sonuçlarla ilişkili amniyotik bant sendromunun ayırıcı tanısının önemli olduğu, amniyotik katlantının genellikle benign bir durum olmakla birlikte bazı kötü prognostik kriterler eşliğinde perinatal morbidite ve mortalite için predispozan bir faktör olabileceği akılda tutulmalıdır.

Anahtar sözcükler: Amniyotik bant, amniyotik katlantı.

Introduction

Amniotic sheet is an abnormal sheet with free end which does not cause fetal deformity and any limitation on fetal movements, and it was first defined by Mahony et al. in 1985.[1] The formation reason of amniotic sheet surrounded by both sheets of chorion and amnion is not known well; yet, it is considered that uterine synechia which develops secondary to the uterine surgery (especially dilatation and curettage), cesarean or endometritis undergone is predisposing factors.[2]

They are generally detected by chance during routine obstetric ultrasound screening. Although the amniotic sheets seen in 0.45-0.60% of all pregnancies are generally considered as benign structures which do not cause fetal anomalies and poor obstetric outcomes, it has been reported in some publications that they may cause cesarean deliver incidence due to malpresentation, preterm labor, and even intrauterine fetal mortality risks compared to normal population.[3-5]

Also, the most significant abnormality in differential diagnosis is the malign characterized amniotic band syn-

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drome seen in 0.08% of all pregnancies and causing congenital anomalies and poor obstetric outcomes.[6] In terms of consultancy to be provided to family and pregnancy follow-up, carrying out the differential diagnosis of these two entities at prenatal period is of great importance.

We aimed to present two cases who were found to have amniotic sheet at prenatal in order to highlight the significance of differential diagnosis of amniotic band syndrome and amniotic sheet and to evaluate prenatal diagnosis and fetal outcome of two cases diagnosed with amniotic sheet.

Case Report

Case 1

Twenty-seven-year-old patient (Gravity 1, Parity 0) was referred to our perinatology clinic with the pre-diagnosis of amniotic band syndrome at 22 weeks of gestation. In the ultrasonographic examination, the patient who undergone dilatation and curettage previously had normal course of menstruation bleedings after curettage, and was found to have a complete septum-like structure with transverse course on the right which was starting from 2 cm above internal os and localized from 1/3 subuterine segment in the uterus (**Fig. 1**). While the structure of septum was seemed to be thicker on the beginning level, it became thinner to the lateral and turned into a membrane and adhered to the right side wall of uterus. It was observed that there was no direct connection between septum and fetus, and fetal movements were normal on both sides of septum. No additional fetal anomaly was found during ultrasonographic examination. With these findings, it was considered as amniotic sheet by ruling out the possibility of amniotic band syndrome. It was seen in the ultrasonography carried out on the 34 weeks of gestation that the amniotic sheet persisted and there was no problem in fetal development. The patient had cesarean labor due to the breech presentation at 39 weeks of gestation, and delivered a healthy 3117 g male baby with 9/10 Apgar score.

Case 2

Thirty-five-year-old patient (G5P1A5) was referred to our perinatology clinic with the pre-diagnosis of amniotic band syndrome. In the ultrasonographic examination, the patient who undergone cesarean previously was

Fig. 1. Amniotic sheet.

found to have a complete septum-like structure beginning from left uterine wall on 1/3 sub-uterine segment. It was observed that there was no direct connection between septum and fetus, and fetal movements were normal on both sides of septum. No additional fetal anomaly was found during ultrasonographic examination. With these findings, it was considered as amniotic sheet by ruling out the possibility of amniotic band syndrome. It was seen in the ultrasonography carried out on the 32 weeks of gestation that the amniotic sheet persisted and there was no problem in fetal development. The patient was delivered by cesarean section with previous cesarean indication at 39 weeks of gestation, and delivered a healthy 3215 g male baby with 9/9 Apgar score.

Discussion

Although amniotic sheet is generally defined in the literature as benign membrane pathology not associated with perinatal morbidity and mortality, some of its types have been reported to cause poor obstetric outcomes such as preterm labor and early membrane rupture, and poor neonatal outcomes such as low birth weight and prematurity.[3-5] These poor perinatal and neonatal outcomes increase the significance of amniotic sheet. Tan et al. categorized amniotic sheets into two groups as complete and incomplete sheets. The complete sheets have small perforation areas which cannot be detected ultrasonography while the incomplete sheets have freely floating ends. Therefore, incomplete sheets can be considered as benign but the complete sheets which are seen more rarely can be considered as malign since they may cause cord prolapsus and intrauterine death.[7] Thus, amniotic sheet being complete and localized especially on sub- 1/3 of uterine segment can be accepted as poor prognostic factor in terms of perinatal mortality.[7,8] In this sense, diagnosing amniotic sheet ultrasonographically at prenatal period and careful evaluation and classification will be guiding in terms of perinatal mortality and morbidity. Also, placenta may settle on amniotic sheet. Korbin et al. observed that the placenta may be implanted to amniotic sheet in 26.1% of the cases, but this placental implantation caused no change in the course of gestation.[3]

Another significant matter is the fulfillment of differential diagnosis between amniotic sheet and amniotic band syndrome (**Table 1**). The frequency of amniotic band syndrome varies between 1/1200 and 1/15,000, but it may increase up to 1/56 in spontaneous abortion cases.[9] Amniotic bands observed in amniotic band syndrome may vary from one to a few, they are the structures shaken by fetal movements or limiting fetal movements by adhering to fetus[1] and may cause severe fetal malformations in extremities, body, vertebrae, cranium, face and abdomen. However, even multiple amniotic sheets are observed, amniotic sheet generally remains alone and does not adhere to fetus or umbilical cord; fetus moves easily and freely.[10] No major fetal anomaly accompanying amniotic sheets is observed since amniotic sheet is formed of two layers of chorion and amnion, and in this way, amniotic sheets resemble the membrane between dichorionic and diamniotic twins and are observed thicker than amniotic band; however, amniotic band is formed of single layer of amnion.[11] Another ultrasonographic finding of amniotic sheet is that its origin point on uterus wall is triangle-shaped and broad-based and has a free round end.[1-3,11] It should be remembered that observing free round end can only be done by evaluating in many planes.

Other cases that may imitate amniotic sheet is the chorioamniotic separation, vanished twin, uterine septum and placenta circumvallata.[2,5] Uterine can be distin-

Table 1. Ultrasonographic differences between amniotic band and amniotic sheet.

Amniotic band	Amniotic sheet
It may limit fetal movements.	It does not adhere to fetus; fetus moves freely.
It may cause severe fetal malformations.	It generally does not cause severe fetal malformations.
There may be more than one amniotic sheet.	Amniotic sheet is generally alone.
It is formed of single layer of amnion.	It is formed of two layers of chorion and amnion membranes.
It is thin.	It is thicker.
	It has a free round end.
	Its origin point on uterus wall is triangle-shaped and broad-based.

guished from septum by following the course of amniotic sheet. Presence of wide myometrial tissue on uterine septum base and previous ultrasound examinations of the patient may helpful for this differentiation; however, it may not be always possible to distinguish septum from amniotic sheet.

In our two cases, the absence of direct connection between the sheet and fetus and of accompanying additional fetal anomaly, and ultrasonographic characteristics made us to consider amniotic sheet diagnosis. There was no limitation on fetal movements and fetal developments were not affected negatively during gestational follow-up period. By these findings, we consulted patients who were diagnosed with amniotic sheet and carried out prenatal follow-up accordingly. In our cases, while there were risk factors for amniotic sheet such as cesarean and curettage undergone, there was no additional problem except that the first case had to deliver by cesarean due to breech presentation although the sheet was incomplete and on sub- 1/3 segment of uterus. Also, not carrying out differential diagnosis but establishing pre-diagnosis of amniotic band syndrome may put both family and physician into a great anxiety and cause to have negative outcomes. On the other hand, misdiagnosing may also cause not to carry out appropriate follow-up and to face poor outcomes. By comparing similar cases in our study, we highlighted the significance of ultrasonographic examination and careful differential diagnosis.

Conclusion

Consequently, it should be remembered that the differential diagnosis of amniotic band syndrome associated with poor obstetric outcomes and severe fetal malformations and amniotic sheet is of great importance, and that the amniotic sheet is benign but may be a predisposing factor for perinatal morbidity and mortality accompanying with some poor prognostic criteria.

Conflicts of Interest: No conflicts declared.

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