

Interhemispheric arachnoid cyst associated with meningomyelocele: a case report

Resul Arisoy, Emre Erdoğan, Oya Demirci, Oya Pekin, Pınar Kumru, Semih Tuğrul

Department of Perinatology, Zeynep Kamil Maternity and Children Training and Research Hospital, Istanbul, Turkey

Abstract

Objective: To present a prenatally diagnosed case of interhemispheric arachnoid cyst associated with lumbosacral meningomyelocele and discussion of management for this case.

Case: A 26-year-old gravida 1, para 0 patient was referred to our unit at 24 weeks gestation. A detailed ultrasound scan revealed a 21x21 mm interhemispheric arachnoid cyst and lumbosacral meningomyelocele. After counseling, termination of pregnancy was offered and accepted. The diagnosis was confirmed by post-mortem examination.

Conclusion: The presence of other anomalies should be investigated for the management of arachnoid cyst.

Key words: Interhemispheric arachnoid cyst, meningomyelocele, management.

Meningomiyeloselin eşlik ettiği interhemisferik araknoid kist: Olgu sunumu

Amaç: Prenatal tanı almış meningomiyeloselin eşlik ettiği interhemisferik araknoid kist olgusunun sunulması ve yönetiminin tartışılması amaçlanmıştır.

Olgu: Yirmi altı yaşında gravida 1, parite 0 olan gebenin 24. gebelik haftasında yapılan detaylı ultrason muayenesinde 21x21 mm boyutlarında interhemisferik araknoid kist ve lumbosakral meningomiyelosel tespit edilmiştir. Aileye fetus hakkında danışmanlık verildikten sonra gebeliğin sonlandırılması önerilmiş ve aile kabul etmiştir. Postmortem incelemede bulgular teyit edilmiştir.

Sonuç: Araknoid kist olgularının yönetimi için diğer anomalilerin varlığı araştırılmalıdır.

Anahtar sözcükler: İnterhemisferik araknoid kist, meningomiyelosel, yönetim.

Introduction

Arachnoid cysts are cystic cavities filled with a fluid like cerebrospinal fluid and including collagen and cell within arachnoid membrane, and they comprise 1% of intracranial lesions. Arachnoid cysts may exist in any part of central nervous system including spinal canal. They are usually located on supratentorial and midline.^[1,2] They rarely associated with other anomalies.

In this report, we discussed the diagnosis and management of arachnoid cyst case associated with meningomyelocele that we prenatally diagnosed.

Case Report

Fetal biometric measurements of twenty-six years old, gravida 0, parity 0 patient without follow-up were found consistent with 24 weeks, having normal amniotic fluid, placenta posterior located and with normal appearance in the routine fetal ultrasonographic examination performed on 24 weeks gestation. In the cranium examination, 21x21 mm hypoechoic cystic mass with normal margins is located at axial section, interhemispheric and even subthalamic level during the cranium examination (**Fig. 1**). No blood flow was observed in cystic mass during Doppler ultrasonographic exami-

Correspondence: Resul Arisoy, MD.

Acibadem Cad. No:177 Zafer Apt. Daire: 12, Istanbul, Turkey.
e-mail: drresular@hotmail.com

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nation. Posterior lateral ventricle was measured as 8.7 mm, cerebellum as 24 mm and cistern magna as 2 mm. Also, cavum septum pellucidum was observed but no corpus callosum was seen positionally. In the columnar vertebral examination, 43x31 mm meningocele was found in lumbosacral area (**Fig. 2**).

No additional anomaly was found in other system examinations of fetus. Anomalies were confirmed by fetal MRI (**Fig. 3**) and corpus callosum agenesis was ruled out. The family was informed about fetus and termination of pregnancy after karyotype analysis was offered to the family as an option. The result of karyotype analysis was 46 XY and in the pathological examination of fetus, 25x25 mm cystic mass and 50 mm lumbosacral meningocele were found on supratentorial region in middle interhemispheric area. It was reported that hyperplastic arachnoid cells were observed in the microscopic analysis of the cyst and antenatal diagnosis was confirmed.

Discussion

Arachnoid cysts comprise 1% of intracranial lesions. They appear as congenital (primary) or associated with bleeding, trauma and infection (secondary). Congenital ones appear between 6 and 8 weeks gestation during hemispheric folding and arachnoid membrane separation. More than 50% of arachnoid cysts are located

middle fossa in supratentorial region. Other intense localizations are major fissures (sylvian, rolandic and interhemispheric), surfaces of cerebral hemispheres, sella turcica region and anterior fossa.^[1-4]

In our case, interhemispheric located arachnoid cyst at 24 weeks gestation was presented. Most of the arachnoid cyst cases were diagnosed at the end of second trimester.^[5] The earliest diagnosis of arachnoid cyst was reported by Bretelle et al. at 13 weeks gestation by transvaginal ultrasonography.^[1]

The differential diagnosis should be done for arachnoid cyst by porencephalic cyst which may be in intracranial hypoechoic lesion appearance, gliependymal cyst, choroid plexus cyst, vein of Galen aneurysm, schizencephaly, cystic neoplasm and intracranial hemorrhage.^[6] Arachnoid cysts are seen as hypoechoic cystic mass which has regular margins in ultrasonography and no blood flow in Doppler examination.^[6,7] MRI can be beneficial for both differential diagnosis and scanning accompanying anomalies.^[8] Arachnoid cyst is usually isolated and seems to be associated with ventriculomegaly and corpus callosum agenesis.^[5,6,8]

In our case, arachnoid cyst seems associated with meningocele but association was not found in the literature. Akdemir et al.^[9] and Gedikbaşı et al.^[10] reported that arachnoid cyst grows as gestational week increases and they may cause ventriculomegaly. Pulu et



Fig. 1. The appearance of interhemispheric arachnoid cyst on axial plane.



Fig. 2. The appearance of meningocele on axial plane.

al. reported associated corpus callosum agenesis in two of seven arachnoid cyst cases (great arachnoid cyst case on midline located on anterior fossa and two arachnoid cyst cases which are 5 mm and 6 mm in ambient cis-

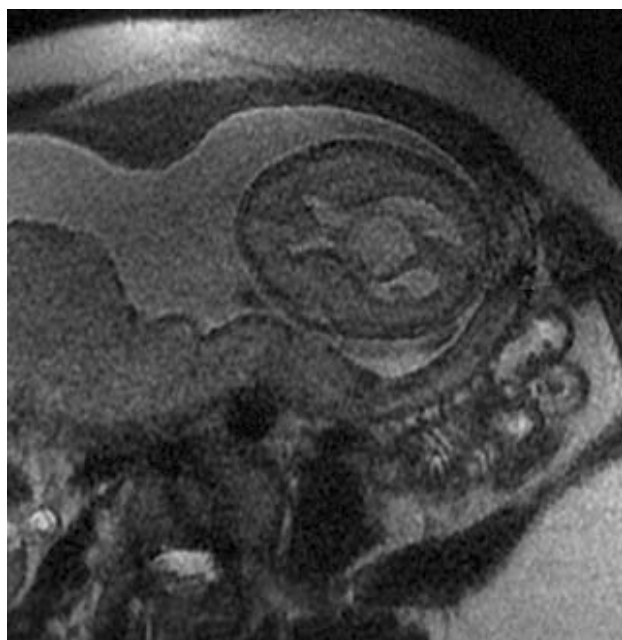


Fig. 3. The appearance of interhemispheric arachnoid cyst on axial plane by MRI.

tern).^[6] In the case presented by Elbers and Furness, they diagnosed arachnoid cyst at 18.5 weeks gestation, and they reported that cyst regressed at 32 weeks gestation and then disappeared.^[11]

Karyotype is normal in most of the arachnoid cyst cases, but karyotyping analysis is recommended in isolated cases. Pilu et al. found trisomy 18 in karyotype analysis of an arachnoid cyst case located in ambient cistern associated with right ventricle with double outlet and nodular hand diagnoses.^[6] Hoge et al. reported the association of infratentorial arachnoid cyst case with partial trisomy 9q (9q22_qter) and partial monosomy Xq (Xq22_qter) (12). Souter et al. found monosomy 14q (14q32.3_qter) in midline intracranial arachnoid cyst case accompanied with fallot's tetralogy and intrauterine growth.^[13]

Conclusion

For the management of arachnoid cyst cases, presence of all other anomalies that may accompany should be researched. Karyotype analysis and termination of pregnancy may be recommended in the presence of multiple anomalies. Prognosis is good in isolated cases, but they should be followed up in terms of cyst size and obstructive ventriculomegaly.

Conflicts of Interest: No conflicts declared.

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