

Arachnoid Cyst With Spontaneous Subdural Hematoma and Intracystic Hemorrhage in a Child

Çocukta Araknoid Kist Zemininde Gelişen Spontan Subdural Hematom ve İntrakistik Hemoraji

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Araknoid kistler, embriyolojik dönemde, araknoid membranda gelişimsel anomaliler sonucunda ortaya çıkan tümöral olmayan sıvı birikimleridir. Bu çalışmada, cerrahi olarak tedavi edilen araknoid kist zemininde spontan gelişen intrakistik hemoraji ve subdural hematom olgusu sunuldu. Hasta başağrısı, vertigo, kusma ve somnolans şikâyetleriyle başvurdu. Travma öyküsü yoktu. Kompüterize tomografide aynı tarafta intrakistik hemoraji ve subdural hematom tespit edildi. Hasta opere edildi ve şikâyetleri operasyon sonrası düzeldi. Bu olgu literatürde bildirilen yirmi ikinci, travma öyküsü olmaksızın, araknoid kist zemininde gelişen intrakistik hemoraji ve subdural hematom olgusudur.

Anahtar Sözcükler : *Araknoid kist, spontan intrakistik hemoraji, subdural hematom*

Arachnoid cysts are non-tumorous fluid collections due to abnormality in the embryonic development of the arachnoid membrane. In this study, a surgically treated arachnoid cyst that presented with intracystic hemorrhage and subdural hematoma developed spontaneously is presented. The patient was admitted to the clinic with headache, vertigo, vomiting and somnolence. There was no history of trauma. Computerized tomography revealed intracystic hemorrhage and subdural hematoma on the same side. The patient underwent surgical intervention and improved post-operatively. This is the twenty-second case of spontaneous intracystic hemorrhage and subdural hematoma which developed on the basis of arachnoid cyst in the literature.

Key Words: *Arachnoid cyst, spontaneous intracystic hemorrhage, subdural hematoma*

Chronic subdural hematoma (SDH) has generally been assumed to occur several weeks following a head injury particularly in elderly (1). Arachnoid cysts are non-tumorous fluid collections which develop as a result of abnormal embryonic brain development during the early weeks. The most common location of the arachnoid cyst is the temporal fossa. Approximately, 1% of non-traumatic intracranial mass lesions are arachnoid cysts. Usually, these cysts are asymptomatic. Enlargement or hemorrhage of the cyst may cause symptoms (2-6). The potentially serious effects of such hematomas suggest that participants in professional sports with a high incidence of head injuries should be alerted to this

possible risk (7). Nevertheless, arachnoid cysts with chronic SDH in the absence of head trauma are rare; only 37 such cases have been reported in the literature. In twenty-one of the reported cases, as in ours, there was an ipsilateral subdural hematoma associated with the arachnoid cyst. We report a case of an arachnoid cyst in which subdural hematoma and intracystic hemorrhage developed spontaneously.

CASE REPORT

A previously asymptomatic 6-year-old boy was examined in the emergency service with complaints of headache, vertigo, vomiting, and somnolence for six days. His neurological examination did not reveal any abnormality. A

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computed tomography (CT) scan revealed a hypodense mass in the left fronto-temporoparietal region (Figure 1). Magnetic resonance imaging (MRI) examination presented a chronic left cerebral subdural hematoma along with an intracystic hematoma in the left middle cranial fossa in addition to a midline shift to the right side (Figure 2).

Examination for coagulopathy was negative. A left fronto-temporoparietal craniotomy was performed, and the chronic SDH was perceived to be separated from the hematoma within the arachnoid cyst by the membrane of the arachnoid cyst and the capsule of the chronic SDH. Intracystic blood clots were removed and the membrane was widely fenestrated. The patient tolerated the procedure well and recovered completely. A postoperative CT scan confirmed the absence of the subdural hematoma and intracystic hematoma (Figure 3)

DISCUSSION

The natural history of arachnoid cysts is still not well defined (8,9). Arachnoid cysts arise from embryonic developmental anomalies involving duplication or splitting of the arachnoid membrane. Arachnoid cysts represent 1% of all non-traumatic intracranial masses (10, 11). The most common site for this etiology is at the sylvian fissure (49%) followed by the cerebellopontine angle (11%), supracollicular (10%), vermian (9%), sellar, suprasellar (9%), interhemispheric (5%), cerebral convexity (4%), and clival (3%) regions (12-14). The first case of an arachnoid cyst with intracystic bleeding was described by Davidoff and Dyke in 1938. Tearing of the outer wall of the arachnoid cyst is associated with subdural or intracystic hemorrhage inflicted by a rupture of bridging veins, unsupported blood vessels around the cyst wall, and leptomeningeal vessels located at the base of the cyst (15-17). The

arachnoid cyst may enlarge overtime as a result of secretion of fluid from the cyst walls (18-20). The ensuing increased pressure may rupture and may manifest as a hematoma if there is also an accompanying vascular disruption. The most successful and comprehensive treatment for a patient with an arachnoid cyst and intracystic and/or SDH is surgery. Membranectomy and cyst communication to the basal cisterns must be executed.

CONCLUSION

Rarely, spontaneous rupture of arachnoid cysts can result in intracystic hemorrhage, SDH or subdural hygroma. Surgery is a helpful and successful treatment for the symptomatic patients with an arachnoid cyst combined with intracystic and subdural hemorrhage.

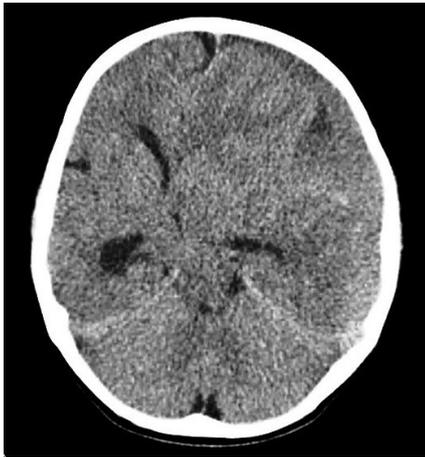


Figure 1: CT scan shows SDH in left frontotempoparietal region.

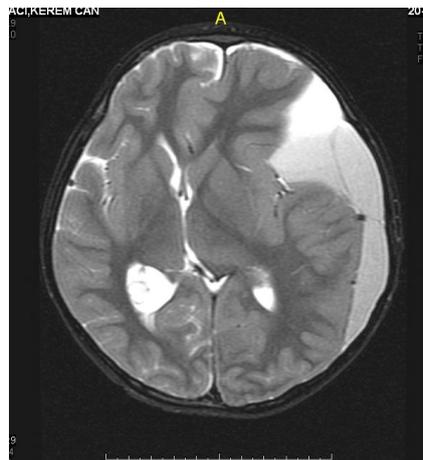


Figure 2: MRI shows left chronic subdural hematoma and intracystic hematoma including left middle cr.

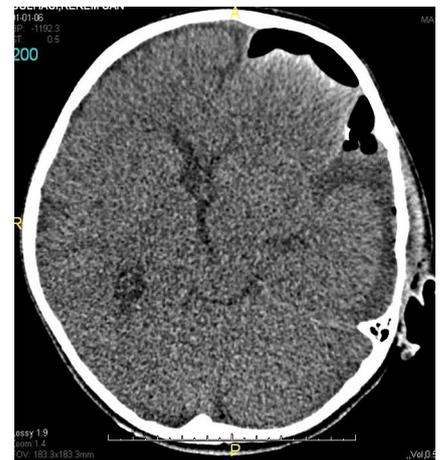


Figure 3: Postoperative CT scan showed the absence of the subdural hematoma and intracystic hematoma.

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