Radiology Case Reports ■■ (2017) ■■–■■

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://Elsevier.com/locate/radcr

Neuroradiology

Arachnoid cysts with spontaneous intracystic hemorrhage and associated subdural hematoma: Report of management and follow-up of 2 cases

Mehmet Emin Adin MD[a,*], *Mehmet Sıddık Yıldız MD*[b], *Muhammed Akif Deniz MD*[c], *Ashkan H. Behzadi MD*[d], *Daddy Mata-Mbemba MD, PHD*[e]

[a] *Department of Radiology, Silvan Dr. Yusuf Azizoğlu State Hospital, Silvan Dr. Yusuf Azizoglu Devlet Hastanesi, 21640, Silvan, Diyarbakir, Turkey*

[b] *Department of Radiology, Dünya Hospital, Batman, Turkey*

[c] *Gazi Yaşargil Research and Training Hospital, Department of Radiology, Health Sciences University, Diyarbakir, Turkey*

[d] *Department of Radiology, New Cornell University, New York, NY, USA*

[e] *Department of Diagnostic Imaging, The Hospital for Sick Children, University of Toronto, Toronto, Canada*

ARTICLE INFO

Article history:
Received 5 November 2017
Accepted 9 December 2017
Available online

Keywords:
Arachnoid cyst
Subdural hematoma
Intracystic hemorrhage
Headache

ABSTRACT

Arachnoid cysts are one of the most frequently encountered intracranial space-occupying lesions in daily neurosurgery and neuroradiology practice. Majority of arachnoid cysts, particularly those of smaller sizes, have a benign uneventful lifetime course. Certain symptoms may indicate serious complications related to underlying arachnoid cysts. Hemorrhage is one the most fearsome complications of arachnoid cysts and almost all reported cases in the literature have undergone surgical correction. In this study, we aimed to present clinical and radiological follow-up findings in 2 adult cases of intracranial arachnoid cyst with spontaneous intracystic hemorrhage and associated subdural hematoma, one of which was successfully treated conservatively. In addition, we broadly summarized and discussed pertinent studies in the English literature.

Introduction

Arachnoid cysts (ACs) constitute 1% of intracranial space-occupying lesions and are most commonly found in middle cranial fossa [1]. Most ACs are asymptomatic, indolent lesions, and their prevalence has increased in the last decades as a result of frequent brain imaging in routine clinical practice. Symptoms are usually related to an increased intracranial pressure, size, or location of the ACs. Although most ACs remain stable in a life period, complete disappearance, intracystic hemorrhage, enlargement, and rupture causing subdural hematoma

Competing Interests: The authors have declared that no competing interests exist.

* *Corresponding author.*
E-mail address: emin.adin@gmail.com (M.E. Adin).

https://doi.org/10.1016/j.radcr.2017.12.006

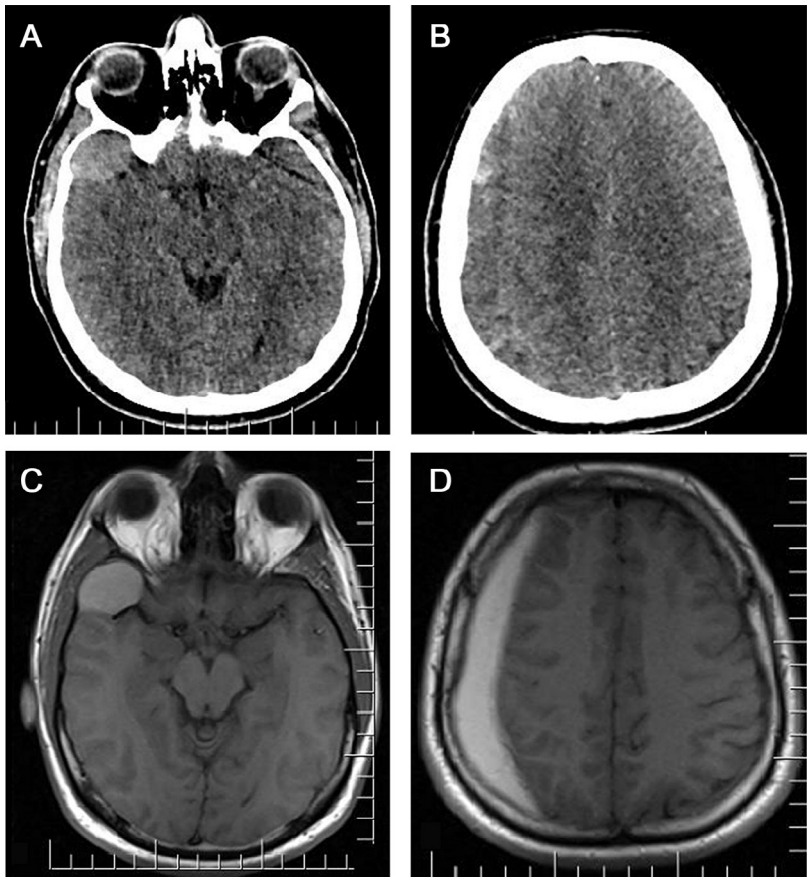

Fig. 1 – Hyperdense extra-axial cyst in the right anterior middle cranial fossa consistent with a blood-filled arachnoid cyst is seen on initial CT scan at admission (A). A companion right parietal SDH isodense to adjacent brain parenchyma with mild mass effect on the right hemicerebrum was also evident (B). Both the arachnoid cyst and ipsilateral SDH demonstrate high signal intensity on T1W MRI (C and D). CT, computed tomography; MRI, magnetic resonance imaging; SDH, subdural hematoma.

(SDH) may occur spontaneously over their natural course or after exertion, physical activity, or a traumatic insult [1–30].

Studies related to intracystic hemorrhage of ACs with or without associated SDH are scarce and mostly limited to case reports [2–6]. In this article, we presented and discussed the clinical, radiological, and follow-up findings in 2 cases of intracranial AC with spontaneous intracystic hemorrhage and associated SDH. In addition, we summarized and discussed relevant cases in the literature.

Case presentations

Case 1

A 36-year-old male teacher with 1-week history of increasing headaches accompanied by vomiting and decreased visual acuity was admitted to our emergency department. The patient denied any history of trauma before his admission. The Glasgow Coma Score (GCS) was 15/15 upon arrival and strength of the muscles was scored as 5/5. A laboratory workup was unremarkable with no evidence of coagulopathy. A head computed tomography (CT) performed upon admission revealed a round extra-axial mass lesion in the right middle cranial fossa causing mild scalloping of the overlying bone, consistent with AC. The lesion was iso to slightly hyperdense to the cerebral cortex (Fig. 1A). There was an associated SDH layering over the ipsilateral parietal lobe that was isodense to the brain cortex (Fig. 1B). The AC and SDH both caused a mass effect against the brain parenchyma. On magnetic resonance imaging (MRI), both lesions showed high signal intensity on T1WI (Fig. 1C & D) and fluid-attenuated inversion recovery (FLAIR), and iso to hypointensity to cerebral cortex on T2WI. On gadolinium-enhanced brain MRI, the cystic lesion demonstrated no enhancement, in keeping with hemorrhagic cyst. A CT angiography showed no vascular abnormality, precluding any vascular etiology of the hemorrhage. The patient underwent surgical evacuation of SDH achieved after right craniotomy. Dark blood-filled cystic lesion with yellowish wall mouthed into sylvian fissure was noted at surgery, during which blood clot was evacuated and the underlying AC was decompressed and fenestrated. The cystic structure was proved to be AC at histopathologic examination of the cyst wall. A year after surgery, the patient's clinical condition and MRI findings were stable.