

Archives of Clinical Case Reports

Clinical Image

Bilateral Subdural Empyema in a 4-month-infant: An Unusual Complication of E.coli K1+ Bacterial Meningitis

Stella Mouskou^{1*}, Maria Gavra², Georgios Markogiannakis³, Sofia Taximi⁴, Anastasia Korona¹ and Vasiliki Ziaka¹

¹Neurology Department, "P. & Aglaia Kyriakou" Children's Hospital, Athens, Greece

²CT & MRI Radiology Department, "Agia Sophia" Children's Hospital, Athens, Greece

³Neurosurgery Department, "P. & Aglaia Kyriakou" Children's Hospital, Athens, Greece

⁴Pediatric Department, "P. & Aglaia Kyriakou" Children's Hospital, Athens, Greece

*Address for Correspondence: Stella Mouskou, Department of Neurology, 'P & A Kyriakou' Children's Hospital, Thivon & Levadias, 11527, Athens, Greece, Tel: +30-2132009315; E-mail: stelli_m@yahoo.com

Received: 15 March 2022; Accepted: 02 April 2022; Published: 18 April 2022

Citation of this article: Mouskou, S., Gavra, M., Markogiannakis, G., Taximi, S., Korona, A., Ziaka, V. (2022) Bilateral Subdural Empyema in a 4-month-infant: An Unusual Complication of E.coli K1 + Bacterial Meningitis. Arch Clin Case Rep, 5(1): 04-06.

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Key words: subdural empyema, E.coli, meningitis, infant

Introduction

Subdural empyema (SE) denotes the collection of purulent material in the subdural space. In infants and neonates, SE is most frequently a complication from bacterial meningitis. Although it is extremely rare, occurring in 1-2% of all cases of bacterial meningitis, at most, morbidity and mortality may be high [1,2].

Case Presentation

A four-month immunocompetent female infant, presented at the ER with high fever and lethargy, starting fourteen hours prior to

admission. She was born full term and hospitalized in NICU with a seven-day antibiotic course for suspected sepsis. A full bacterial workup was performed (blood culture, lumbar puncture & urine culture) which came positive for E Coli K1+ with AST profile resistant only at quinolones. A third generation cephalosporin was started. Due to persistent fever, an emergency brain CT scan without contrast was performed and it revealed hypodense extra-axial collections over both frontotemporoparietal convexi-



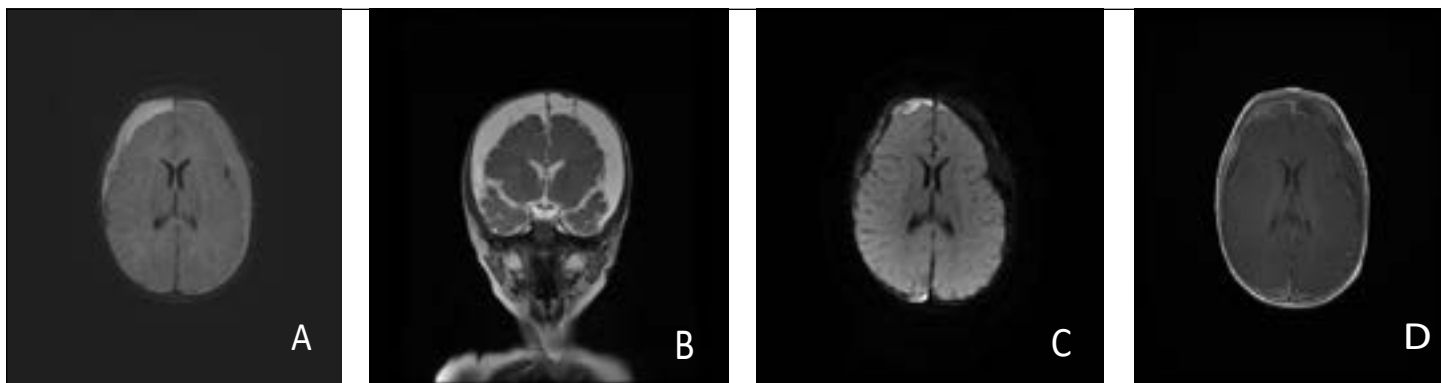


Figure 1: A. Axial Flair shows mixed signal intensity in both subdural collections, in the convexity of cerebral hemispheres. B. Cor T2W shows high signal intensity in both subdural collections. Strands of intermediate signal intensity are noted. C. Axial DWI shows high signal intensity in the right subdural empyema, in the frontal and occipital convexity indicating restricted water motion due to pus collection. D. Axial contrast enhanced T1w shows peripheral enhancement of both subdural collections.

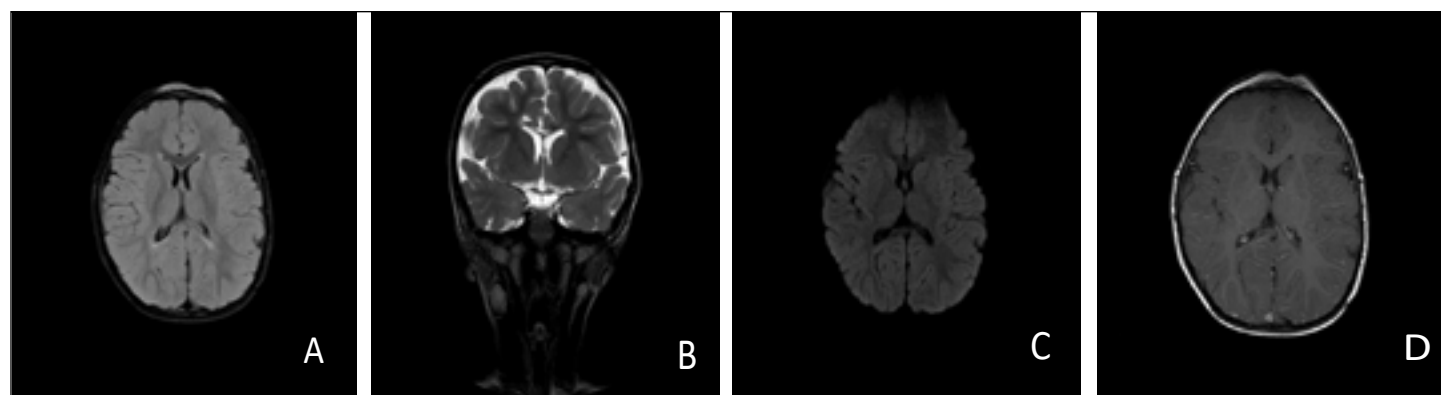


Figure 2: (A-D) An MRI six months after discharge showed interval resolution of the subdural empyemas.

ties. A subsequent brain MRI study (1.5-T system) with contrast was performed. It showed large bilateral subdural effusions with mixed signal intensity, restricted diffusion and rim enhancement compatible with empyemas, meningitic changes and contrast enhancement of pseudo membranes inside the empyemas (Figure 1A-D). Bilateral frontoparietal craniotomies were performed and drainage of subdural effusions as well as removal of pseudo membranes was achieved with favourable outcome. RT-PCR of the purulent specimen identified E coli as the causative organism with pleocytosis (260 leucocyte/ μ L, 75% neutrophils) and high protein levels (1970mg%). Forty-eight hours post-operative she had two

prolonged episodes of focal seizures and levetiracetam was then added. She received a total of three weeks of antibiotics (cefotaxime and meropenem) and was discharged with antiepileptic therapy. Six months post-operative brain MRI was normal, and antiepileptic therapy was discontinued (Figure 2A-D). Currently, she is three years old with no neurological deficits.

Discussion

Subdural empyema due to meningitis in infants is unique with respect to the pathophysiology, presentation, and treatment of SD. Early detection and neurosurgical involvement and evaluation are imperative to achieve timely diagnoses and to guide management

in these critically ill children [1,3].

Statement of Ethics

This case report was produced in accordance with institutional policies; the patient's parents gave written, informed consent for publication of this case report and any accompanying images.

The paper is exempt from ethical committee approval, since this is a retrospective presentation of the case report

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

No funding sources to report

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