

## **O12 Subdural empyema in pregnancy: a neurosurgical emergency**

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**Introduction:** Subdural empyema is a rare but potentially fatal cause of headaches, most frequently seen as a complication of sinusitis. We present a case of a pregnant woman with headaches and malaise.

**Case report:** A 33-year-old woman (G3P2) of 25 weeks of gestation attended the emergency department with a 24-h history of headache, neck stiffness, malaise and coryzal symptoms. Medical history and pregnancy were unremarkable. She was alert and orientated, with neck stiffness, but no papilloedema or focal neurology. She was tachycardic and pyrexial with elevated CRP (206 mg/L) and serum lactate (7.1 mmol/L). Initial impression was of sepsis secondary to bacterial meningitis so fluid resuscitation and antibiotics were commenced. As there were concerns about radiation exposure in pregnancy a consultant radiologist and clinical infection team agreed that in the absence of clinical signs of raised intracranial pressure (ICP), they could perform a lumbar puncture (LP) without prior CT imaging. Rapid deterioration in conscious level along with left papillary dilatation preceded LP. Anaesthesia was induced and mechanical ventilation commenced. A CT head scan revealed a right parietal subdural collection consistent with empyema, global cerebral oedema and evidence of raised ICP. Intravenous mannitol was administered while she transferred to theatre for an emergency burr hole. Postoperatively her ICP remained high (initially >40 mmHg) requiring high-dose sedation, cooling and hypertonic saline. She was extubated on day 8 and transferred to the ward on day 12 with a residual 3rd cranial nerve palsy. Fetal observations remained normal throughout. Following discharge a fetal surveillance scan at 28 weeks confirmed normal development. She had an uneventful vaginal delivery at term.

**Discussion:** Morbidity and mortality in intracranial empyema relate directly to the delay in prompt diagnosis and neurosurgical intervention.<sup>1</sup> There remains widespread misperception regarding risks involved with diagnostic radiology in pregnancy. In this case performing a lumbar puncture would not only have delayed diagnosis but may have had potentially serious consequences in a patient with raised ICP. Guidelines issued by the Health Protection Agency with the Royal College of Radiologists and College of Radiographers states that the radiation dose to a fetus likely to result from any diagnostic examination in current use should present no risk of fetal death, malformation, growth retardation or impaired mental development. Furthermore, fetal radiation exposure associated with a CT scan of the head is associated with a childhood cancer risk <1 in 1 000 000, compared to a natural background risk of 1 in 500.<sup>2</sup>

### **References**

1. Greenlee JE. Subdural empyema. *Current Treat Options Neurol.* 2003 5:13-22.
2. Wall BF, Meara JR, Muirhead CR, Bury RF, Murray M. Protection of pregnant patients during diagnostic medical exposures to ionising radiation: Advice from the Health Protection Agency, The Royal College of Radiologists and the College of Radiographers. Documents of the Health Protection Agency, March 2009