

TRENDS AND DIRECTIONS OF DEVELOPMENT OF SCIENTIFIC
APPROACHES AND
PROSPECTS OF INTEGRATION OF INTERNET TECHNOLOGIES INTO
SOCIETY

**RUPTURE OF THE EPIDURAL MEMBRANE AFTER
DIAGNOSTIC LUMBAL PUNCTURE CAUSING LONGLASTING
COMPLICATIONS: CLINICAL CASE
SCENARIO**

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Lumbal puncture – is a routine diagnostic procedure that is regularly used both in neurology as well in emergency cases. Postdural puncture headache is a common side effect of this intervention. PPH is a clinical diagnosis that is based on anamnesis of recently performed dural puncture together with present symptomatic of an orthostatic headache. The diagnosis does not require blood sampling and X-ray diagnostic. Staying in bed, rehydration, caffeine, painkillers and use of epidural blood patch are used to cope with symptoms that usually last for few days. Finally, surgical observation of the dural intervention wound could be considered if symptoms continue. There is obvious lack of data about managing PPH as most of patients do not apply for special clinical assistance. Epidural infection and hematoma perform with symptoms ranging from local spinal pain to general plegia and paralysis. Spinal MRI is crucial for confirming the diagnosis. There was an observation of several symptomatic epidural cases in pediatric cohort. We also identified one report in adults that describes severe PPH with liquor transfusion

after epidural anaesthesia (although in this case the transfusion was not linked to diagnostic procedure performed that had been previously considered as a cause). 29 year old woman without previous anamnesis appeared in emergency unit with symptoms of dizziness and non-specific pain/loss of sensitivity in lower limbs during last 5 days. Woman is a mother of 2-year old twins and she has not been eating and sleeping for couple of days; there was no fever, vomiting and nausea in anamnesis. Besides these symptoms all other indicators have been normal.

Somatic and neurological tests as well as blood tests have been normal, no signs of infection identified. As part of clinical strategy it was considered to exclude viral meningitis and/or other neuroinfection. The procedure has been described as “technically complicated” and after several attempts the team succeeded to perform puncture with 25 G needle on L3 / L4 level. Liquor was normal without signs of pleocytosis and the patient was released. The next day patient appeared in the unit with symptoms of severe orthostatic headache, pain in the back, nausea and vomiting. Observation of the patient’s back revealed several injection signs and minor subcutaneous haematoma. Neurological and blood screening have been normal. Because of severe pain symptom in the back that spread along the spine, the decision was taken to perform MRI of the spine and medulla oblongata to exclude spinal epidural haematoma. MRI revealed significant epidural transfusion from C2 to sacrum. The liquid has been localized backwards, from both sides and upfront, thus pushing spinal cord upfront and disturbing nerves. Based on low density on T2 screens and low density signals on T1 screens the liquid has been identified as liquor and not blood. The patient has been coping symptoms with painkillers, anti-nausea meds, rehydration, coffee and staying in bed. Immediate therapeutic effect has been reached by epidural blood patch on L3 / L4, however the symptoms were back after 12 hours. Blood patching was done twice – in 24 and 48 hours respectively. After third intervention the effect was stable. The patient was released after 7 days inpatient care. After 5 months the patient still suffered from severe headache that has been progressed when physical exercising. She was failing to look after her twins, had to take hospital leave, can not perform her professional work. This is a clear case when epidural intervention because of lumbar puncture could lead to significant complication due to chronic PPH. MRI showing pathology of the frontal segment of the dural space because of liquor transfusion into epidural backspace is not acknowledged by clinicians with only one case described in a literature in adults. Taking into consideration that MRI is not a routine procedure in patients with PPH, we can assume that such cases are underdiagnosed and happen more often.

The most evidence-based reason for massive liquor transfusion is a rupture of dura mater after numerous attempts of diagnostic punctures. It is mainly because of priority for excluding meningococcal and TB meningitis, the use of such invasive intervention is implemented in emergency care. In conclusion: lumbal puncture could cause symptomatic penetrations of the dura mater that leads to long-lasting complications. In this thesis we would like to emphasize the need for immediate special care when problems with diagnostic puncture had happened. MRI has been proven to be the most informative method for identifying liquor transfusion.

List of literature:

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