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Follow-up of patients with spontaneous intracranial hypotension - a case series

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Background

Spontaneous intracranial hypotension (SIH) is a neurological condition characterized by symptoms as postural headache, neck stiffness, nausea, vomiting, tinnitus, and vertigo. Spontaneous CSF leakage from a spinal dural tear leading to low cerebrospinal fluid pressure has been suggested as the underlying pathogenic mechanism. Brain magnetic resonance imaging (MRI) findings in most patients are characterized by diffuse pachymeningeal gadolinium enhancement (PGE). Epidural blood patch (EBP) is considered as the treatment of choice in patients with severe symptoms nonresponsive to pharmacological treatments. The objective of our study was to investigate clinical and imaging features of 22 patients with SIH.

Methods

We retrospectively reviewed the medical records of 22 patients diagnosed with SIH in our hospital from 2014 to 2019. The following data were collected: demographic variables, initial clinical symptoms, initial pain score, reports of brain MRI, the response to EBP and pharmacological treatment. In our center we do not perform LP as a diagnostic method for SIH. All EBPs are performed lumbar at a single-level by injecting autologous venous blood.

Results

Medical charts of 8 (36%) male and 14 (64%) female patients were analyzed.
The average **age of symptom onset** was 42 years (19-75).
The mean follow-up time was 62 months (6-96).
The symptoms are displayed in Figure 1.

Risk factors: in three cases the onset of SIH could be related to airplane travelling. None of the patients had connective-tissue disease.

Brain MRI: normal in 5 patients and 17/22 (77%) showed signs of intracranial hypotension:
diffuse PGE in 13 (76%)
subdural fluid collections (hygroma) in 5 (22%)
downward displacement of the brain in 4 (23%)

EBP was conducted in all patients, outcome is shown in Figure 2.
Full remission was seen in 12 patients (in 6 after the first, and in 6 after repeated EBP).
No difference to EBP response was observed between males/females, in relation to age or the presence of MRI findings.

Medication was added to patients in whom EBP was insufficient. Marked improvement on daily headache was observed: indomethacin (1), common analgesics (2), metoprolol (1), opioids (1). Medication with no effect on daily headache: indomethacin (4), amitrptylin (4), analgesics (4), gabapentin (2), metoprolol (1).

Figure 1.

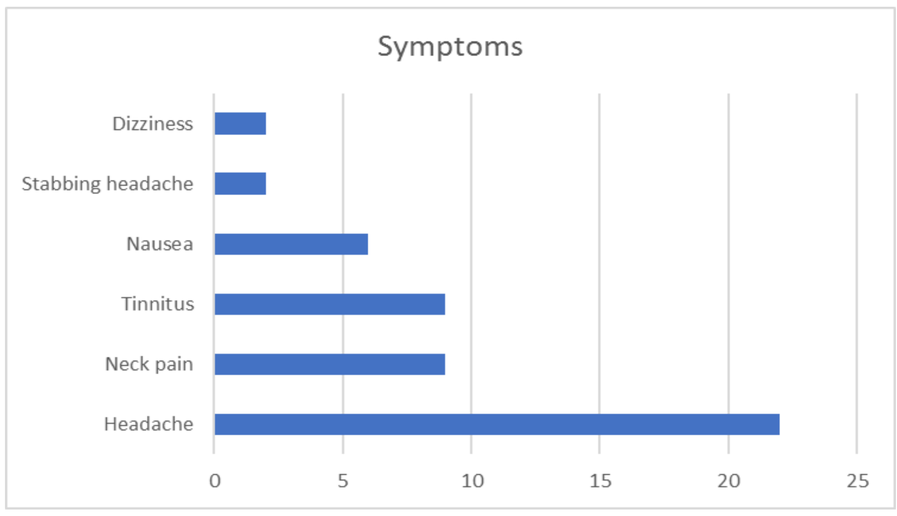
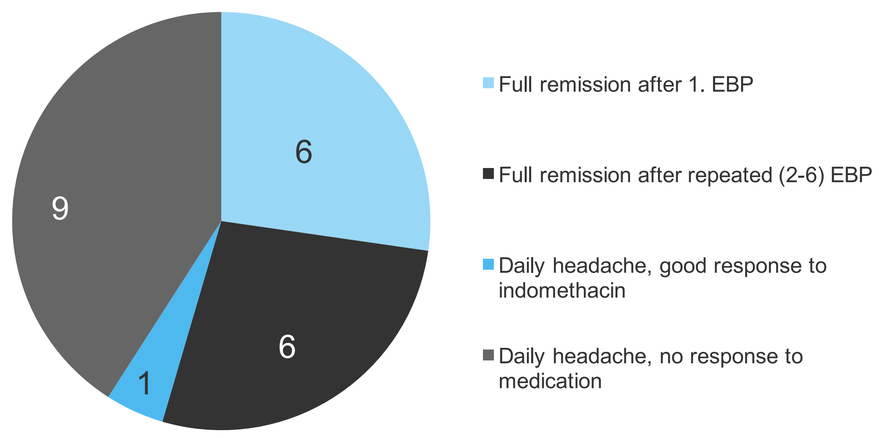


Figure 2.
Outcome after EBP and/or and response to medication (n=22)



Conclusions

More than half of the patients required repeated EBP. A significant number of patients with SIH remain symptomatic even after repeated EBPs. The majority of patients do not respond to pharmacological medication in the treatment of SIH. Future research should be directed towards recognizing the predictors for good response to EBP and more specific pharmacological treatment in the cases where EBP is insufficient.

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