



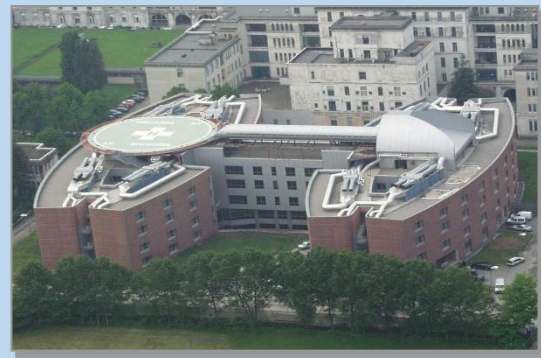
# TREATMENT OF SPONTANEOUS INTRACRANIAL HYPOTENSION SYNDROME: SINGLE INSTITUTIONAL EXPERIENCE OF 326 CASES

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## OBJECTIVE

To describe our experience of 23 years in the treatment of spontaneous intracranial hypotension (SIH).

## BACKGROUND

SIH is characterized by orthostatic headache (OH), diffuse pachymeningeal enhancement on brain MRI and low CSF pressure. Treatment is usually conservative, but autologous epidural blood patch (EBP) has emerged as the most effective non-surgical management.

## DESIGN/METHODS

From 1992 to 2015 we observed 326 patients (169 females and 157 males, range 15-84 years old, mean 47) with SIH according to the ICHD 2004 criteria. 116 patients were treated conservatively while in the remaining 210 lumbar EBP was performed with 15-50 ml (mean 28 ml) of autologous blood. In 203 cases blood was mixed with contrast medium (1 ml of gadolinium [12pts] and 5ml of Iopamidol [191pts]), because about 30' after EBP they performed a spinal MRI or CT to document the blood spread into the epidural space. All patients were kept in Trendelenburg position to approximately 30 ° up from one hour before and during the procedure and for 24 h (52pts) or 16 h (158pts) after that. 52 patients were pre-medicated with acetazolamide (500mg). The follow-up ranged from 6 months to 8 years.

## RESULTS

OH disappeared after 4-24 weeks in patients treated conservatively and 16-24 hours after the procedure in the patients treated with EBP when the patients started upright. 12 patients had a recurrent SIH, 6 had a early recurrence (1-4 weeks) and 6 a late recurrence (1-4 years). 2 patients had more the one relapse (respectively 3 and 2 relapses). In 2 patients the procedure was performed 4 times and they not recovered from SIH. Severe SIH complications were: cerebral venous thrombosis in 4 patients (2 treated with EBP); coma (Glasgow Coma Scale, GCS ≤5) in 4 patients (in all of them EBP was performed, in one 3 times); subdural hematoma in 48 patients (12 women and 36 men), thickness of the hematoma ranged from 4 to 18 mm, 16 patients developed intracranial hypertension, in 20 cases surgical evacuation was performed. Complication of EBP procedure were at most (90%) low back pain during 2 to 3 days and in 10 cases (5%) pneumocephalus, resulting from air introduction in the epidural space caused by incidental dural puncture or pressure gradient creation between the dural and extradural space, that resolved spontaneously in few days with symptomatic treatment.

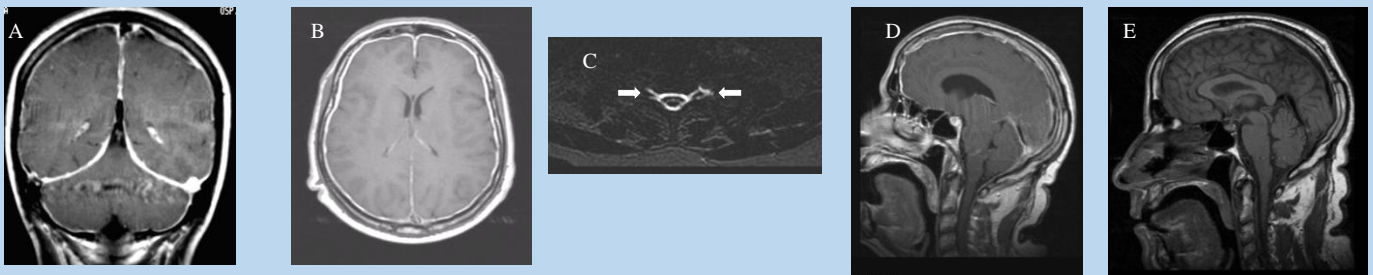


Fig. A-B: Brain MRI shows diffuse pachymeningeal enhancement

Fig. C: Axial myelo-MRI shows bilateral CSF leak at C6-C7 level (arrows)

Fig. D: Brain MRI showing diffuse pachymeningeal enhancement and brain sagging

Fig. E: Brain MRI after epidural blood patch showing ascent of the brain (patient in figure D)

## DISCUSSION AND CONCLUSIONS

The lumbar EBP in Trendelenburg position appears to be safe and quickly effective in 99% of cases of SIH, and in 94% of them just a single treatment. While the conservative treatment seems to be effective after long time and sometimes with risk of severe complications.

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