# Pseudotumor Cerebri in Childhood: Clinical Spectrum and Predictors for Visual Outcome

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## INTRODUCTION

- **Pseudotumor cerebri (PTC);** increased intracranial pressure (ICP) of unknown causes with normal composition of cerebrospinal fluid (CSF)
- Primary symptoms in children are visual problems and headache
- The visual outcome is variable from unaffected to severe vision loss
- Probable PTC with normal ICP could be also diagnosed with clinical examination and magnetic resonance imaging (MRI)

## OBJECTIVES

- To evaluate the clinical spectrum and visual outcome in children with PTC
- To test the value of a a scoring model based-on MRI parameters with respect to CSF pressure

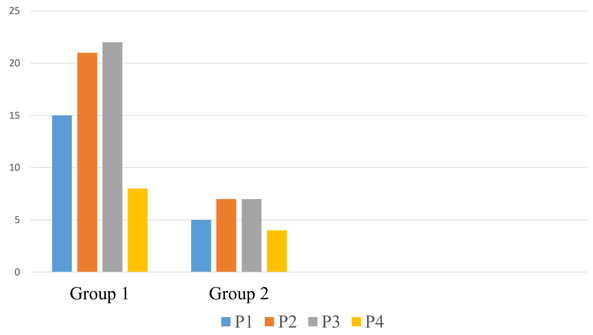


**Figure 1:** MRI parameters of the patients

## PATIENTS & METHODS

**A total of 47 children with PTC**

- **Group I:** elevated CSF pressure (>250-280mmH2O)
- **Group II:** normal CSF pressure
- **A scoring model of MRI parameters;**
  - P1; empty sella
  - P2; posterior globe flattening
  - P3; distention of perioptic subarachnoid space with tortuosity of the optic nerve
  - P4; transverse sinus stenosis
- The short-term visual outcome was;
  - necessity of operation (L-P shunt or fenestration)
- The long-term visual outcome was;
  - the presence of visual field defect

**Table 1:** Demographic data of the cohort

| | | Group I (n:35, 74.5%) | Group II (n:12, 25.5%) |
|---|---|---|---|
| **Gender** | F/M | 21 /14 | 5/7 |
| **Etiology** | Primer PTC | 20 | 8 |
| | Seconder PTC | 15 | 4 |
| **Outcome** | Short-term | 2 | 3 |
| | Long-term | 18 | 3 |

## RESULTS

### I. Study groups (female to male ratio - 1.23:1 )

- **Group I** (elevated CSF pressure) n:35 (74.5%);
  - CSF pressure: mean 464±177 mm-H2O (range: 260-930 mmH2O)
- **Group II** (normal CSF pressure) n:12 (25.5%);

### II. Outcome and Correlations :

- Needed surgery; n: 5/47, (10.6%) **(Table 2)**
- Visual field defects; n: 21/47, (44.7%)
- No statistically significant correlation was found between the total score of MRI parameters, CSF pressure values, and visual outcome
- Negative results might be related to the etiologic heterogenity of the cohort.

**Table 2:** Descriptive features of the patients with surgery

| Patient/ Gender | | ICP (mmH2O) | Score of MRI Parameters | Visual Field Defects | Operation type |
|---|---|---|---|---|---|
| **P12** | F | 220 | 4 / 4 | Yes | fenestration |
| **P40** | F | 110 | 2 / 4 | Yes | L-P shunt |
| **P42** | F | 280 | 3 / 4 | Yes | fenestration |
| **P 9** | F | 720 | 1 / 4 | Yes | fenestration |
| **P44** | F | 490 | 1 / 4 | No | L-P shunt |

## CONCLUSIONS

- Diagnosing PTC in childhood without CSF analysis still poses a clinical challenge.
- The presented scoring model did not provide significant outcome prediction in the presented cohort.
- PTC with normal ICP does not mean that the clinic, treatment and outcome will be different from PTC with high ICP.
- Normal pressure PTC is a variant of PTC that should be treated by medical treatment to avoid visual loss.

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