Risk factors for recurrence of post-dural puncture headache following blood patch in obstetric patients

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Introduction

The Blood patch (BP) technique is currently the best available treatment of postdural puncture headache when conservative treatment fails. However, uncertainty persists about the true efficacy rate of BP, the proportion of cases requiring a repeated procedure and the reasons of symptoms recurrence. The purpose of this study was to determine the incidence of BP failure defined as the reoccurrence of symptoms (attenuated or not) following the first BP and requiring additional treatment. It was also to identify factors associated with failures of the initial BP.

Methods

We used the departmental quality database to retrieve obstetric patients having an anaesthetic procedure between **2001 and 2015**. All patients with an identified dural perforation (with a spinal or epidural needle, or a catheter) followed by typical PDPH and treated with one or several BP were included. For all these patients we determined **risk factors of recurrence of PDPH** by comparing patients and procedures characteristics of patients with or without recurrent symptoms following the first BP. We used Chi-square, T-test and OR with 95% CI to compare groups.

Conclusion

A careful follow up of patients with **migraine, pulsatile headaches or photophobia** should be considered following performance of the first bloodpatch.**Information** should be also provided to these patients on the greater likelihood of a repeated blood patch.

Variable		No Headache Recurrence N=109 (55.6%)	Headache recurrence after one blood patch N=87 (44.4%)	Odds Ratio (95%CI)	P Value
Age	Mean (SD)	31.1 (5.0)	30.0 (5.4)		0.16
Height (cm)	Mean (SD)	163.4 (13.7)	162.7 (11.0)		0.74
Weight (Kg)	Mean (SD)	76.6 (19.4)	77.9 (17.3)		0.65
BMI (kg/m2)	Mean (SD)	27.5(5.2)	28.7 (5.7)		0.12
Distance epidural space (cm)	Mean (SD)	5.3 (1.2)	5.4 (1.4)		0.46
Platelet count (G/l)	Mean (SD)	230.9 (65.1)	214.8 (57.3)		0.07
Quick (%)	Mean (SD)	99.0 (3.2)	99.2 (2.5)		0.79
Blood Volume initial BP (ml)	Mean (SD)	25.6 (7.8)	26.4 (8.4)		0.60
Migraine	N (%)	1 (0.9%)	6 (6.9%)	8.0 [1.00-67.75]	0.02*
Tobacco	N (%)	17 (15.6%)	19 (21.8%)	1.0 [0.05-17.75]	0.26
Pulsing character of Headache	N (%)	7 (6.8%)	17 (19.5%)	3.3 [1.31-8.43]	0.008*
Past PDPH	N (%)	1 (0.9%)	2 (2.3%)	2.5 [0.22-28.49]	0.43
Photophobia	N (%)	5 (4.6%)	11 (12.6%)	2.9 [0.99-8.93]	0.04*
Prophylactic blood patch	N (%)	4 (3.8%)	6 (6.9%)	1.8 [0.51-6.85]	0.33

Table 1

Results

The database included **40379** patients. We identified **196 patients (0.48%)** with a typical PPDH. Of these, **87 (44.4%)** had persistent symptoms after the initial blood patch, **32 (16.6%)** required a second blood patch and **1** required a third blood patch (0,5%).Risk factors identified for symptom persistence after the first BP were : **migraine** OR 8.0 95% Ci [1.0-67.7] P = 0.02, **pulsatile headache** OR 3 95% CI [1.3-8.4] P = 0.008, **presence of photophobia** OR 2.9 95% CI [0.9-8.9] P = 0.04.Other factors such BMI (Body Mass Index), blood volume initial for the first BP or the realization of prophylactic BP seemed to have no impact on the likelihood of recurrence (**table 1**)