CORRESPONDENCE

Postdural puncture headache at Sylvanus Olympio University Hospital of Lomé in Togo: incidence and risk factors

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To the Editor,

As in many low-income countries, the practice of anesthesia in Togo is shaped by a shortage of physician anesthesiologists. We are often faced with a lack of essential resources such as medicines and oxygen sources. This lack leaves potential gaps in the focus on patient safety.¹ Non-physician providers of anesthesia care perform spinal anesthesia (SA) regularly because it is resource-efficient and is beneficial for the patients.

Postdural puncture headache (PDPH), a well-known complication of SA, is related to decreased cerebrospinal fluid (CSF) pressure due to CSF leakage through a dural puncture and/or vasodilatation of cerebral vessels in response to decreased CSF pressure.² To ensure provision of safe care with SA at Sylvanus Olympio University Hospital (SOUH), we decided to evaluate the risks and measure our complications rate. We began this process by focusing on the occurrence of PDPH.

After ethical approval (19 April 2017) from SOUH management, we conducted a prospective, observational assessment of 500 consecutive patients who met the inclusion criteria from April to September 2017. We enrolled only patients who were American Society of Anesthesiologists physical status I or II and were having surgery under SA. We excluded patients operated on emergently, those with a history of chronic headaches or migraines, and those with

contraindications to SA. Data collected the day of the procedure included the patient's age, sex, and body mass index (BMI); type of surgery; type of spinal needle used; the puncture level and number of attempts; and the type of local anesthetic used. Following the surgery, the patients were followed and questioned during the first five postoperative days – by telephone in case of early hospital discharge – for the presence of PDPH. PDPH was defined according to the International Headache Society Classifications as a bifrontal or occipital headache occurring within five days after dural puncture, made worse in the upright position, and relieved in the supine position.³ Data analysis was performed using Statistical Package for the Social Sciences (version 21; IBM Corp., Armonk, NY, USA).

Among the 500 patients included in the study, 32 (6.5%) developed PDPH (Table). The spinal needles used for all patients were 25G Quincke (Shanghai SA Medical & Plastic Instruments Co. Ltd., Shanghai, China). The local anesthetic used was 0.5% isobaric bupivacaine (Aguettant, Lyon, France).

PDPH was more frequent in the age group 16–30 yr than in patients > 30 yr [9.5% vs 4.8%, respectively; odds ratio 2.1; 95% confidence interval 1.1 to 2.2; $P = 0.04$], in those with a body mass index (BMI) at 16.5–25.0 kg·m⁻² (11.2%) than at BMI > 25 kg·m⁻² (3.8%) ($P = 0.001$), and after obstetrical (22%) than non-obstetrical (4.3%) procedures ($P < 0.001$). There were no differences in PDPH based on sex, puncture level, or number of attempts.

The factors that significantly increased PDPH incidence (young age, obstetrical surgery, low-to-normal BMI) were similar to those reported in several other studies.^{2,4,5} Wadud *et al.* found that PDPH was more frequent in the age group 30–50 yr than 51–75 yr (30% vs 5%, respectively; $P < 0.05$).⁴ Peralta *et al.* reported a lower incidence of

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Table Factors associated with postdural puncture headache

Factor	<i>N</i>	PDPH <i>n</i> (%)	Odds ratio	95% Confidence interval	<i>P</i> value
Age groups (yr)					
16-30	169	16 (9.5)	2.1	1.1 to 2.2	0.038
>30	331	16 (4.8)			
Sex					
Male	346	19 (5.5)	0.630	0.30 to 1.31	0.15
Female	154	13 (8.4)			
BMI (kg·m ⁻²)					
16.5-25.0	180	20 (11.1)	3.208	1.53 to 6.7	0.001
> 25.0	320	12 (3.8)			
Procedures					
Obstetrical	59	13 (22.0)	6.277	2.91 to 13.5	< 0.001
Non-obstetrical	441	19 (4.3)			
Puncture level					
L4 - L5	88	5 (5.7)	0.859	0.32 to 2.30	0.49
L3 - L4	412	27 (6.6)			
Number of attempts					
1	464	29 (6.3)	0.733	0.21 to 2.54	0.41
>1	36	3 (8.3)			

BMI = body mass index; *N* = total number; *n* = number of postdural puncture headaches; PDPH = postdural puncture headache

PDPH in parturients with BMI ≥ 31.5 kg·m⁻² than in those with BMI < 31.5 kg·m⁻² (39% vs 56%; *P* = 0.0004).⁵

The 6.5% incidence of PDPH after SA with a 25G Quincke spinal needle performed by non-physician anesthetists at SOUH is within the range of previously described rates of PDPH. Nevertheless, we need to continue quality improvement efforts and advocate the use of non-cutting, small-gauge spinal needles for SA to reduce our PDPH rate, thereby improving patient safety.

Conflicts of interest None declared.

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