INTRODUCTION:

Post-dural puncture headache (PDPH) is a well-known complication of lumbar puncture (LP) in the pediatric population.1,2 Kokki et al. demonstrated a decrease in PDPH with smaller gauge non-cutting needles.3 Tung et al. found a cost savings of $26.07 per patient with a non-cutting 22g needle.4 However it is acknowledged that many neurologists and pediatric hospitals continue to use cutting needles.5,6 Our academic pediatric hospital only stocks LP kits with cutting needles. We designed a retrospective chart review to determine the incidence of PDPH at our institution.

METHODS:

• A retrospective chart review was performed utilizing the hospital electronic medical record (EMR).
• Procedure and billing codes were queried to find inpatients between 2 and 19 years old who underwent an LP from 2013-2014. These charts were then manually reviewed.
• Primary variable: presence of PDPH.
• Secondary variables: age, gender, body mass index (BMI), reason for LP, needle gauge, needle type, treatment for PDPH, if an epidural blood patch (EBP) was performed.

RESULTS:

304 cases met inclusion criteria. 41 patients (13.5%) suffered a PDPH and two received an EBP. Eight additional patients were diagnosed with PDPH but received their LP at an outside facility. These were excluded from the incidence rate of PDPH but included in the analysis of the secondary variables. Analysis revealed a statistically significant increase of PDPH in older pediatric patients (p < 0.001), patients with a larger BMI (p < 0.001) and patients undergoing LP for a pre-existing headache or neurological deficit (p 0.0021). Analysis also revealed a statistically significant higher incidence of PDPH in the departments of emergency medicine and neurology (p 0.0266). Of note patients with PDPH required and average of 2.3 extra hospital days for treatment.

DISCUSSION:

The incidence of PDPH at our institution (13.5%) is consistent with published rates when 20-22g cutting needles are used.1 Based on current evidence, a change of practice to use 22g gauge pencil point needles would likely decrease this incidence by at least half.2,4 By preventing PDPH we would improve patient care and decrease medical cost. Our department is currently working with pediatrics, hematology/oncology, emergency medicine, and neurology on a quality improvement project to decrease PDPH incidence and standardize PDPH treatment. We aim to change the current LP kit to encourage the use of a non-cutting needle, and start an education program for services that frequently perform LPs.

Extra Hospital Days for PDPH Treatment

<table>
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<th>Adequate Documentation</th>
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<tr>
<td>Range (days)</td>
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REFERENCES: