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Reply to: "Don't throw the baby out with the bathwater: spinal-epidural hematoma in the setting of obstetric thromboprophylaxis and neuraxial anesthesia"

We thank Drs. Leffert, Horlocker and Landau for their interest in our recent case report.[1] We agree that prevention of venous thromboembolism (VTE) in parturients is of paramount importance and our report was in no way intended to decrease implementation of this important initiative. Given the reported rarity of the complication this patient experienced (spinal-epidural hematoma) and its rather unusual presentation, we felt it useful to share the experience with our fellow clinicians. Anything which raises awareness of this complication and provokes additional investigation might reduce morbidity for a few women, which we felt justified publication of our experience.

In many countries, both hospital formularies and local drug availability may be quite limited, as in Serbia where this case occurred. The only low molecular weight heparin (LMWH) available at the time (and currently) was nadroparin. Based strictly on the 2010 American Society of Regional Anesthesia (ASRA) and the Society of Obstetric Anesthesia and Perinatology (SOAP) guidelines,[2,3] which were the versions available at the time of writing, we agree that the postoperative dosing with nadroparin in our case report could be criticized as being slightly too early. However, neither document mentions nadroparin as it is not available in the United States and in trying to conform to recommended practices, anesthesiologists are compelled to extrapolate to their local situation based on the best-available evidence. The protocol followed in our case was derived from the case series described by Snijder et al.[4] which is quite widely followed in central Europe. In that series, 500 parturients received 5700 IU nadroparin pre-operatively, followed by the same dose at 6–12 h postoperatively; a separate group of 500 parturients received only 2850 IU 6–12 h postoperatively. No complications were noted in either group. Indeed, the Fraxiparine® (nadroparin) prescribing information[5] recommends a 12-h delay after pre-operative dosing with nadroparin but states "…in almost all cases, preventive treatment with LMWH can be started within 6–8 h following the (neuraxial) technique or removal of the catheter." This prescribing information recommends a single daily dose of 0.4 mL (3800 IU) for prophylaxis. Fraxiparine® is supplied in single-dose syringes and the only one available in the facility was the 2850 IU dose. Of note, the single-dose syringes contain an air bubble; the prescribing instructions specifically state "Do not purge the air bubble". This effectively prevents accurate bedside fractionation of the dose. In attempting to resolve the dosage and delivery options for the patient, the hematologic consultant opted to administer the lower dose (2850 IU), but twice daily. They considered it (not unreasonably) to be roughly comparable to the recommendations for prophylaxis in a parturient at elevated risk of VTE.

With any case report, questions can be raised retrospectively regarding the evaluation, diagnosis and management; even the genesis of certain signs and symptoms. The practice of anesthesiology (perhaps more often than not) involves making clinical decisions based on incomplete data, regardless of the country and health care system in which one works. While this case report may hold little educational value for anesthesiologists in advanced health care systems, our hope is that it might be instructive for those practising in areas with limited resources, information and formularies. Our intent was not to decrease prophylaxis for VTE prevention but to increase awareness of a rare complication. So, by all means, "Keep the baby and keep the bathwater"! After all, the mission of an international journal is to elevate the standard of practice internationally!

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Collecting data for quality improvement in obstetric anaesthesia

The recent editorial on quality improvement in obstetric anaesthesia highlighted the importance of local data collection by obstetric anaesthetists.[1] We have undertaken a national survey of lead obstetric anaesthetists in the UK to find out what data obstetric anaesthetists routinely collect, and how it is collated and analysed.

The 13-question survey was approved by the Obstetric Anaesthetists' Association (OAA) and hosted on the OAA online survey system. The response rate was 51% (98/191), with the respondents representing a variety of maternity hospital sizes: 29% of respondents worked in hospitals with <3000 deliveries, 39% came from hospitals with 3000–5000 deliveries and 31% from hospitals with >5000 deliveries.

Quality data on obstetric anaesthesia were collected by 85% of the respondent hospitals, of which only 54% routinely analysed their data. Twenty-nine respondent hospitals cited insufficient resources for data collection as the main reason for failure to analyse data and only 14/61 (23%) of the respondents reported that they received support from a hospital data analyst. In the majority of hospitals (46/61, 77%), an obstetric anaesthetist undertook the data analysis, some reporting that this workload was difficult to manage.

A variety of systems was used to collect data, including paper systems. Some hospitals opted to use a combination of systems and 39% used their maternity data system to capture anaesthetic data. For hospitals that routinely collected data, the most frequently used datasets are shown in Table 1.

With regards to sharing analysed data, the results of data analysis were reported at a hospital, regional or national level by only 4/83 (5%) of respondents. The remainder of those who reported their data did so only at a departmental level. Regular reporting of data (monthly or yearly) was done by 46 respondent hospitals. The most common approach was 'reactive' analysis; that is, when potential problems were suspected, for example in response to a cluster of complications such as post-dural puncture headaches.

Table 1 Dataset items collected by hospitals that routinely collect obstetric anaesthetic data

Dataset item	Percentage of respondent hospitals
Mode of anaesthesia for caesarean section	58%
Complications of anaesthesia	53%
Patient satisfaction	47%
Effectiveness of postoperative analgesia	37%
Postnatal follow-up rate	34%
Labour epidural resite rate	34%
Difficult intubation rate	31%
Data related to obstetric critical care admissions	31%
Labour epidural analgesia response time	24%

Despite the difficulties of data collection, its analysis and reporting, 97% of respondents were enthusiastic about benchmarking their local data against national peer data. With regards to the type of data that they considered should be used for benchmarking, 84% preferred service-outcome measures. Whilst the remainder preferred service-provision (structure and process) data, many commented that they would want to be able to compare both service-provision and outcome data, an approach supported by the quality improvement literature.[2]

It is evident from this survey that there is enthusiasm to collect and analyse quality improvement data for obstetric anaesthesia and for obstetric anaesthetists to be able to benchmark against services in other units. This enthusiasm is tempered by the difficulties faced in collecting data and the lack of support to provide analysis of the data.

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