Safety timeout for local and regional anesthesia

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Our anesthesia practices are always based on patient safety in WHO surgical and anesthesia guidelines. Those guidelines are interpreted in checklists and protocols that could be applied in daily routine in every standard operating theaters. A surgical patient would be notified and identified during the surgery by all member of the operating room including the anesthesiologist through a specialized checklists which was called a safety surgical checklist usually done in the preparation room, signing in, 5 minutes for timeout before the incision, and the last sign out before closure stitching. Anesthesia conduct and monitoring is viewed as a part of the whole surgery practice.[1]

Lately, Indonesian anesthesiologists were horrified of several cases related with adverse events in regional anesthesia. Some of them were proven to be related with false medication and the other were remain unknown. Some experts concluded that it would be related with local anesthetic systemic toxicity (LAST) while others reported that they might be related with adjuvants or added preservatives in local anesthetic mixtures.

The Indonesian Society of Anesthesiologists have already issued an Advise Letter considering scattered adverse events and incidents to ensure every anesthesiologists to raise concern about patient pre-anesthetic evaluation, pre-block evaluation of patient and local anesthetics, and also quick recognition of side effects and unwanted adverse events.

Years before, in 2013, American Society of Regional Anesthesia and Pain Medicine had appointed a task force of its senior members dr. Greg Liguori, Robert Weller, and Michael F. Mulroy to review current practices, external guides, and the sense of the membership to see if a relatively 'standard' preblock checklist to include all the mandated items could be drafted, recognizing that any such document would need modification for local customs. Then in May 2014, they issued a pre-block checklist intended for regional anesthesia. The steps of the proposed ASRA Pre-Block checklist are intended to remind clinicians of basic minimum requirements for safety and quality of care for patients receiving a

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regional block, and to prevent wrong-site blocks. They include guidance on site marking, asepsis, and monitoring based on guidance from the Joint Commission, FDA, ASA, and ASRA. It is anticipated that the checklist will be followed from the first contact with the patient (identification) but that the actual review of the completion of the items will be confirmed at the 'timeout (pause)' mandated by the Universal Protocol to precede needle insertion. Implementation of the checklist must be dictated by local departmental guidelines, and must necessarily adapt to local practice patterns. The ASRA Regional Block Pre-Procedural Checklist is listed in nine points below:[2-4]

1. **Patient identification (2 criteria)**
   This policy must agree with local requirements for identification, and should be performed before any sedation to allow patient participation. This could include name plus wrist-band, name plus birth date, or whatever is locally required.

2. **Allergies and anticoagulant status reviewed**
   The extent of this review and the implication of anticoagulation therapy are again subject to local custom and ASRA guidelines.

3. **Surgical procedure/consent confirmed**
   This also should be done before sedation, and in accord with local and state requirements e.g witness, dates and times, site and side identified, patient of HCPOA signature. Generally the surgeon must also confirm consent and mark the surgical site, so institutional guidelines must be clear about timing of surgeon confirmation and administration of sedation. In some settings it may be acceptable to proceed with sedation if all the surgical paperwork is in order, but if there is ambiguity about the consent, sedation should be delayed until the surgeon has an opportunity to clarify the issues. Local policies should also cover the role of translators in the event of language barriers, or the need for the presence of a party with Durable Power of Attorney to confirm the process.

4   **Block plan confirmed; site marked**
Site marking should also be performed before sedation, and conform to local custom. Ideally, anesthesia site marking should use a different symbol than the surgical marking. For example if the surgeon signs yes the anesthesiologist should use an x or initials, and vice versa.

5   **Necessary equipment present; drugs/solutions labeled**
Again, labeling policy should follow local practice and Joint Commission requirements, but is important if clear solutions (local anesthetics) are added to a block tray, and is critical if a clear skin antiseptic is used.

6   **Resuscitation equipment immediately available (e.g. airway devices, suction, vasoactive drugs, lipid emulsion)**
Local standards again dictate to what degree these measures should be available, but it seems reasonable to have the vasoactive drugs and airway tools immediately available in the vicinity of the block area. If these items are always included in a block cart or block area and checked on a daily basis, local custom may elect to omit this step from the checklist.

7   **Appropriate ASA monitors applied; IV access, sedation, and supplemental oxygen provided if indicated**
Monitors should include the availability of all ASA standard monitors, especially pulse oximetry when sedation is administered. It is recommended that additional personnel (other than the person performing the block) be involved to monitor the patient when sedation is administered.

8   **Aseptic technique used : hand cleansing performed; mask and sterile gloves used**
This should be performed in accordance with current ASRA Practice Advisory. The Practice Advisory also contains Grade B level recommendations for removal of jewelry stating it may be prudent to remove all jewelry items (rings, watches, and so on) before hand washing to reduce the risk of contamination. Because the evidence is not sufficient to support that this step actually reduces infections with regional blocks, this suggestion is not a step in the check list itself but could be added if local custom chooses to follow this advisory.

9   **"Time Out" performed before needle insertion for each new block site if position changed or separated in time or performed by another team**
This time-out should occur before needle insertion and include the review of each of the above steps. This point represents a potential opportunity to incorporate an additional safety step, such as requiring support staff (nurse or technicians) t withhold trays or equipment until the time-out is performed. In the event of more than one procedure, if position change only occurs, a simple time-out may suffice. If a totally separate block is separated in time or done by different performers, it seems prudent to repeat the entire checklist. All members of the team should agree. The documentation of the performance of this step must be determined locally, whether it is recorded as part of the medical record or annotation of completion is made as part of the anesthesia or surgical record.

Even though ASRA had already composed checklists and guidelines, several adjustments need to be made on the guideline practice when they were faced with local customs and policies. Several questions should be addressed locally to ensure ease of use and congruence with current practice. Relevant questions and topics for local policies and procedures would include:[4]

1. Format.
The format of checklist would be a paper document attached to each patient`s chart, or a laminated poster on the wall of each block administration location, or on the top of movable block carts, or a template in the electronic medical record.

2. Recording.
The actual checks should be recorded on the form, and a completed version retained as part of the patient chart or recorded in the electronic medical record. Otherwise it would be used as a visual guide for the users. Although the Joint Commission 2010 Universal Protocol does not require recording, it is required that the completion of the timeout be documented in the medical record.

3. Responsibility.
The person who initiate the performance whom should probably be the senior anesthesia staff. Other local options might include the responsible nurse in the Induction Room or Operating Room.

4. Timing.

As above, it is anticipated that the steps of the checklist will be initiated before any sedation or preparation is performed, but the actual formal review of the items will occur immediately before actual needle insertion as a 'timeout' safety maneuver. The pause time should be repeated before each block if two procedures are performed (peripheral nerve block followed by spinal). This should be done if the patient is repositioned between blocks or two blocks are separated in time, or if blocks are performed by different staff (such as the peripheral nerve performed by block team and the spinal performed by the primary team).

5. Safety/accuracy

An additional element to be considered would be to require anesthesia technician, scrub nurse, or other key personnel not to open the block tray or perform the prep until timeout is performed and checklist reviewed.

The proposed guideline by ASRA is the next step to build a safety protocol especially in regional anesthesia, after the already established LAST treatment guideline. Prevention is always be better option than treatment. In order to achieve the utmost patient care and safety, ASRA determined to make a universal prevention guideline based on several universal hospital standards, to help anesthesiologists work safer and in a completed record and report system.[2]

According to research from Johns and Horn in 40th Annual Regional Anesthesiology and Acute Pain Medicine Meeting in Las Vegas Nevada in which they employed timeout compliance during regional anesthesia training research, they found that complex medical procedures inherently involve a number of risks including over sedation during block placement, infection, LAST and wrong-site block. Current literature has demonstrated that one method to minimize the risk of medical errors, reduce operator variability and improve compliance with mandated protocols is the use of cognitive aids or checklists. Despite a low complication rate, there is clear value in utilizing a safety checklist prior to block placement, it reminds the individual to perform simple, yet sometimes forgotten, tasks that help prevent error and prepare for complication management should it occur. In this case, the timeout was not initiated by the trainee 44% of the time, despite the quick nature of it. This raises the concern that trainees, and possibly many practicing anesthesiologists, frequently forget to perform a timeout. Operator experience level did improve timeout compliance but never to the desired 100%. This raises the question of whether there needs to

be a dedicated member of the regional team whose responsibility it is to assure timeout compliance. Also, the perceived barrier of 'production pressure' is a poor excuse not to perform a timeout given that in the majority of cases it takes less than one minute to perform. Overall, more emphasis needs to be placed on training providers to adhere to this valuable safety protocol.[5]

The safety timeout that has been elaborated in ASRA Regional Block Pre-Procedural Checklist is one important thing that needs to be encouraged and confirmed every time an anesthesiologist is getting ready to do a regional anesthesia. The safety timeout is useful as a quick reminder for operating theater personnel especially anesthesiologist and the nurse anesthetists to do a double check and reassessment on patient condition, drug and adjuvant choice, labels, and other implicating factors. There are many contributing factors that could induced emergency and crisis situations in regional anesthesia conduct, and the safety timeout is an alternative way to eliminate and trace those factors in an appropriate way.[2-4,6-7]

Timeout would only take not more than 5 minutes but it consists more than just a quick reminder but also as a brief report and summary of procedures that already been done and also would be done to the patient. Timeout also make the operating personnel aware of situations, of drugs, equipment and surroundings that would be intertwined and monitored together as a team. More eyes and verbal confirmations would surely get an optimum consideration and awareness of operating theater situation.

This safety timeout would mention specifically of patient status and related anesthetic considerations, the regional anesthetic plan adjusted with its surgery procedure, aforementioned drugs with the batch number, expired date, volume, concentration and added adjuvants, and also last but not least the pin-prick test to confirm the success rate of anesthesia. Sometimes it would be considered important to stick the local anesthetic batch number on the anesthetic record, just like a surgery implant.

The safety timeout could be modified and devised according to local customs as long as it would still in accordance with ASRA Guidelines and Protocols. The goal is not to add more burdens onto the anesthesiologists even the operating personnel, but more as a trust builder and written confirmation between workers in a highly vigilant situation.[2-4]

All health providers over the world could not be agree more of patient safety as the first priority in every situation, especially in emergency of operating theater. The safety timeout idea is a quick

solution to enhance our awareness in patient safety, to minimize the hazard and risk of adverse events related with anesthesia in operating theater.

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