STUDY TITLE: *Quadratus Lumborum Block versus Intrathecal Morphine for Postoperative Pain Control after Cesarean Delivery*

Principal Investigator: Nicholas J. Schott, MD

Source of Support: UPMC Department of Anesthesiology and Perioperative Medicine

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CONSENT TO ACT AS A PARTICIPANT IN A RESEARCH STUDY AND AUTHORIZATION TO DISCLOSE PROTECTED HEALTH INFORMATION FOR A RESEARCH STUDY

Title: Quadratus Lumborum Block versus Intrathecal Morphine for Postoperative Pain Control after Cesarean Delivery

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Why are you being asked to participate in this research?

You are being asked to participate in this research study because you are at least 18 years of age and scheduled to undergo a cesarean section. Before agreeing to be in this study, it is important that you understand that studies like this include only people who choose to take part. An investigator will explain the research study to you. Your participation is voluntary; you can choose not to participate. Please read this informed consent carefully and ask about any words or information that you do not clearly understand. It tells you what you need to know about this research study. If you agree to take part in this study, you need to sign this form. Your signature means that you have been told about this study, its risks, and that you want to take part in this study.

Why is this research study being done?

We are trying to improve the post-operative management of patients undergoing cesarean delivery. Under the current standard of care, spinal anesthetics are performed with morphine typically given into the intrathecal (spinal) space during the procedure. While this medication typically provides good pain relief for many hours after surgery, it is also associated with several unwanted side effects such as nausea, vomiting, pruritus (itching), and sedation. The ultrasound-guided quadratus lumborum block (QLB) is a relatively newer technique that was first reported in 2007. It has already been shown in studies to provide good pain relief following cesarean sections compared to placebo, but has yet to be compared to the current standard of care, intrathecal morphine. The hope of this study is to determine if the QLB can provide comparable or superior pain relief compared to intrathecal morphine, while at the same time also decreasing the unwanted side effects associated with intrathecal morphine.

While previous studies have demonstrated that the quadratus lumborum block (QLB) provides good pain relief after cesarean delivery compared to placebo, there have yet to be any studies directly comparing it to the current standard of care, intrathecal morphine. Therefore, it is currently unknown if the QLB will provide the

same, better, or worse pain control compared to intrathecal morphine. We suspect that the pain control experienced will be similar or maybe better, but cannot say for sure. It is therefore possible that if you are randomly assigned to the QLB only group, your pain relief may not be as good as it otherwise would have been. To compensate for this, additional pain medications will be available to you if needed, regardless of which group you are assigned to. If you randomly get assigned to the QLB plus intrathecal morphine group, you will likely have better pain control than what is routine.

Who can I talk to if I have questions?

Your physician is involved as an investigator in this research study. Before agreeing to participate, or at any time during your study participation, you may discuss your care with another doctor who is not associated with this research study. You are not under any obligation to participate in any research study offered by your physician. If you have questions, concerns, or complaints, or think that the research has hurt you, you should contact the principal investigator – Dr. Nicholas J. Schott, M.D. at (412) 354-6016, or call (412) 354-4148 to speak with the anesthesia provider on call.

If you have any questions about your rights as a research subject or wish to talk to someone other the research team, please call the University of Pittsburgh Human Subjects Protection Advocate toll-free at 866-212-2668. Please use this number if you feel that your questions, concerns, or complaints are not being answered by the research team, you have questions about your rights as a research subject or want to get information or provide input about this research.

How long will the research last?

Your involvement in this research study is expected to last for about 6 weeks after the completion of your cesarean delivery. The entire study is anticipated to last approximately three to six months.

How many people will be studied?

We anticipate that approximately 60 women will be included in this research study and that the involvement of each individual will be only during their current hospitalization for delivery. All participants will be taken from Magee Women's Hospital of UPMC.

What happens in this research study?

If you agree to participate in this study, you will be randomly assigned (by every other enrollment to treatment group) to one of two groups:

- **Intrathecal (spinal) Morphine Only** – This group will receive intrathecal (spinal) morphine to help with post-operative pain control as is the current standard of care.

- **Both Intrathecal Morphine and QLBs** – This group will receive both intrathecal morphine and left and right sided QLBs to help with post-operative pain control.

Regardless of which group you are assigned to, follow-up assessments will occur:

- During the next 48 hours after your surgery. You will be followed-up with at 15 minutes, 30 minutes, 45 minutes, 1 hour, 4 hours, 24 hours, and 48 hours after your procedure.
- Items that will be assessed at these time intervals include:
    - Your verbalized pain scores from 0-10 at rest and with movement
    - The amount and types of postoperative pain medications you require
    - The time you first request extra opioid medications
    - Your vital signs
    - Measurement scores to assess for side effects including nausea, vomiting, pruritus (itching), and sedation
    - Presence or absence of signs of local anesthetic toxicity including perioral numbness, ringing in your ears, and/or metallic taste in your mouth
    - Whether or not you are able to successfully breast feed, and what effect, if any, pain has on your success (assessed at 24 hour follow-up only)
    - Quality of life assessment (at 48 hour follow-up only)

- Items that will be assessed 6 weeks after your cesearean delivery:
    - The severity of your pain and any impact it might have on daily functioning
    - Your verbalized pain scores from 0-10 at rest and with movement
    - The amount and types of pain medications you currently require
    - A postnantal depression outcome scale

After the assessments at 6 weeks, your involvement in this study will be complete.

The medications utilized for the Quadratus Lumborum block will include dilute bupivacaine. Bupivacaine is a FDA approved local anesthetic for nerve block procedures. A total of 40mL of 0.25% Bupivacaine will be used with 20mL allocated per surgical side which is a standard dose for quadratus lumborum pain block.

Potential health information that will be used and/or disclosed:

- Your age, gender, race, height, weight, body mass index, ASA classification (measure of your level of health according to the American Society of Anesthesiologists), number of prior pregnancies, and gestational age
- The number of cesarean deliveries that you have had in the past and the reason for your current cesarean delivery
- Any medical comorbidities (other medical problems) that you may have including any history of chronic opioid use
- Your verbalized pain scores from 0-10 at rest and with movement
- The amount and types of postoperative pain medications you require

- The time you first request extra opioid medications
- Your vital signs
- Measurement scores to assess for side effects including nausea, vomiting, pruritus (itching), and sedation
- Presence or absence of signs of local anesthetic toxicity including perioral numbness, ringing in your ears, and/or metallic taste in your mouth
- Whether or not you are able to successfully breast feed, and what effect, if any, pain has on your success

What happens if I say no, I do not want to be in this research?

Participation in this research is voluntary. You may decide not to take part in the research and it will not negatively impact your care in any way. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. This is not a treatment study. Your alternative is not to participate. Should you not participate, the spinal anesthetic for your cesarean delivery will be placed and dosed in the usual fashion, and no quadratus lumborum block will be performed. You are not under any obligation to participate in any research study offered by your doctor.

What happens if I say yes, but I change my mind later?

You can, at any time, withdraw from this research study. You can also withdraw your authorization for us to use your identifiable medical information for the purposes described above. This means that you will also be withdrawn from further participation in this research study. Any identifiable research or medical information obtained as part of this study prior to the date that you withdrew your consent will continue to be used and disclosed by the investigators for the purposes described above. Should you decide to withdrawal, any information already obtained will still be used in the study, but no new information will be obtained. Should any new findings develop during the course of the research that may be related to your willingness to continue participation, it will be provided to you in a timely manner. **To formally withdraw from this research study**, you should provide a written and dated notice of this decision to the principal investigator of this research study at the address listed on the first page of this form. **Your decision to withdraw your consent** for participation in this research study will have no effect on your current or future medical care at a UPMC hospital or affiliated health care provider or your current or future relationship with a health care insurance provider.

What are the study risks?

Risks associated with screening procedures and access to private health information includes:

- Loss of confidentiality:

- Access to health information
- Screening procedures
- Follow-up

Special care will be taken to ensure anonymity in this study and only a study number will be used to identify you. Only necessary information will be collected and any questions asked will be done so in a respectful manner in a private area. Should any unforeseen loss of confidentiality occur, you will be informed in a timely manner. Although every reasonable effort has been taken to de-identify your research information, confidentiality cannot be guaranteed and it is possible that re-identification of research data may occur.

Risks associated with intrathecal morphine (ITM) include:

- Nausea and/or vomiting
- Itching (pruritus)
- Sedation

The above are known side effects associated with intrathecal morphine. These effects may be experienced by anyone assigned to either of the two groups that will receive intrathecal morphine.

Risks associated with the quadratus lumborum block (QLB) include:

- Bleeding
- Infection
- Damage to surrounding structures

There is a very low risk of experiencing one or more of the possible side effects above if you are in a group who receives a QLB. These risks are minimized by performing the procedure in a sterile fashion, ensuring appropriate dosing, and using an ultrasound machine which allows us to directly visualize where we are going. You will likely experience no discomfort while having the left and right QLBs performed because you will still be under the effects of spinal anesthesia and numb in those areas. As with any experimental procedure, there may be adverse events or side effects that are currently unknown and certain of these unknown risks could be permanent, severe or life-threatening.

Risks associated with bupivacaine include:

- Maternal:
  - Restlessness
  - Anxiety
  - Dizziness
  - Tinnitus
  - Blurred vision
  - Tremors
  - Depression of the myocardium: decreased cardiac output, heartblock, hypotension, bradycardia, ventricular arrhythmias

- Allergic type reactions.

- Newborn:
  - There is a possibility that drugs used during the standard of care and research pain control procedures may be found and excreted in small quantities in the breast milk and these typically do not affect the baby. There is a chance your baby could experience some sleepiness due to these medications

Risks associated with follow-up pain and breastfeeding questions and assessments include:

- Inconvenience
- Frustration or embarrassment (if breastfeeding is unsuccessful).Loss of confidentiality
- Although every reasonable effort has been taken to de-identify your research information, confidentiality cannot be guaranteed and it is possible that re-identification of research data may occur.
- As with any experimental procedure, there may be adverse events or side effects that are currently unknown and certain of these unknown risks could be permanent, severe or life-threatening.

There may be some inconvenience to you associated with the follow-up that is planned for this study at 15 min, 30 min, 45 min, 1 hr, 4 hrs, 24 hrs, 48 hrs, and 6 weeks after your procedure. This is minimized by keeping the follow-up simple, and only approximately 2 minutes of your time should be required to answer a few simple questions at each time interval. Again, there is a small risk for loss of confidentiality which will be minimized as described above.

What are the benefits of the study?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits from participation may include improved post-operative pain control, decreased need for post-operative pain medications, and decreased incidence of opioid related side effects such as nausea, vomiting, pruritus (itching), and sedation.

Will my information be kept confidential?

Your identity and medical records and data related to this study will be kept confidential, except as required by law and except for inspections by the University of Pittsburgh Research Conduct and Compliance Office. Once enrolled, you will be given a research number to identify you in the study. This research number (not your name) is what will be used to keep track of any personal information or data collected on you. All such data and information will be maintained in a password protected computer and/or locked file cabinet. A single document linking all

research numbers to specific patient names will be kept in a separate, secure location accessible only by the primary investigator of this study. Results of the research may be published for scientific purposes or presented to scientific groups, however, your identity will not be revealed. Per University of Pittsburgh policy, all research records must be maintained for at least 7 years following final reporting or publication of a project. Your de-identified research data may be shared with secondary investigators with similar research interests.

Can I be removed from the research without my okay?

The person in charge of the research study can remove you from the research study without your approval. Possible reasons for removal include failure to follow instructions of the research staff, breach of protocol, alteration of your clinical condition or required anesthetic plan including the need to convert to general anesthesia, or lack of sufficient staff availability.

Are there costs of participating in this study?

For this study, you will not be charged for any of the procedures performed for the purpose of this research

Will I be paid to participate in this study?

You will not be paid for your participation in this research study.

What if I am injured while taking part in this study?

If you believe that the research procedures have resulted in an injury to you, immediately contact the Principal Investigator who is listed on the first page of this form. Emergency medical treatment for injuries solely and directly related to your participation in this research study will be provided to you by the hospitals of UPMC. Your insurance provider may be billed for the costs of this emergency treatment, but none of those costs will be charged directly to you. If your research-related injury requires medical care beyond this emergency treatment, you will be responsible for the costs of this follow-up care. At this time, there is no plan for any additional financial compensation. You do not, however, waive any legal rights by signing this form

Authorization to use and disclose individually identifiable health information for a research study

Before you can take part in this research study, the University of Pittsburgh is required to obtain your authorization to use and/or disclose (release) your health information. This section describes how, and to whom, your health information will be used and/or disclosed (shared) while you are participating in this research study.

It is important that you read this carefully. The University of Pittsburgh and its researchers are required by law to protect your health information. This research study will involve the recording of past, current, and/or future identifiable (pertaining to only you) medical information from your hospital and/or other health care provider (e.g. physician office) records. This information will be used to determine your eligibility for this study and to follow your response once you are enrolled in the study.

The following is a list of entities that may use and/or disclose your health information as part of this study:

- Those who oversee the study will have access to your health information, including the following:
    - The University of Pittsburgh
    - The University of Pittsburgh Conduct and Compliance Office
- Government agencies such as the Department of Health and Human Services who have oversight of the study or to whom access is required under the law.
- Authorized representatives of the UPMC hospitals or other affiliated health care providers may have access to identifiable information (which may include your identifiable medical information) related to your participation in this research study for the purpose of (1) fulfilling orders, made by the investigators, for hospital and health care services (e.g., laboratory tests, diagnostic procedures) associated with research study participation; (2) addressing correct payment for tests and procedures ordered by the investigators; and/or (3) for internal hospital operations (i.e. quality assurance).
- In unusual cases, the investigators may be required to release identifiable information (which may include your identifiable medical information) related to your participation in this research study in response to an order from a court of law. If the investigators learn that you or someone with whom you are involved is in serious danger or potential harm, they will need to inform, as required by Pennsylvania law, the appropriate agencies.
- It is possible that collected data may also be shared with secondary investigators with similar research interests, but only in a de-identified fashion (your name and other identifying information will not be shared).

In order to participate in this study, you must agree to share your health information with the persons and organizations listed above. If these persons or organizations that you authorize to receive and/or use protected health information, are not health plans, covered health care providers, or health care clearinghouses subject to federal health information privacy laws, they may further disclose the protected health information and it may no longer be protected by the federal health information privacy laws.

A description of this clinical trial will be available on http://www.clinicaltrials.gov, as required by US Law. This website will not include information that can identify you. At most, the website will include a summary of the results. You can search this website at any time.

Expiration of Authorization

This authorization will not expire unless you revoke it in writing. You may revoke or end this authorization by writing to the Principal Investigator:

Nicholas J. Schott, M.D.
Department of Anesthesiology
Magee-Women's Hospital
300 Halket Street
Pittsburgh, PA 15213

If you revoke your authorization, you will also be removed from the study. Revoking your authorization only affects the use and sharing of your health information after the written request is received. Any health information obtained prior to receiving the written request may be used to maintain the integrity of the study.

VOLUNTARY CONSENT:

All of the above has been explained to me and all of my current questions have been answered. I understand that, throughout my participation in this research study, I am encouraged to ask questions about any aspect of this research study including the use and disclosure of my identifiable medical record information. Such future questions will be answered by the investigators listed on the first page of this form.

Any questions I have about my rights as a research participant or the research use of my medical information will be answered by the Human Subject Protection Advocate of the IRB Office, University of Pittsburgh (1-866-212-2668).

By signing this form, I agree to participate in this research study and for the use and disclosure of my medical record information for the purposes described above. A copy of this consent form will be given to me.

_____ _____
Signature of subject Date/Time

_____
Printed name of subject

CERTIFICATION OF INFORMED CONSENT:

I certify that I have explained the nature and purpose of this research study to the above-named individual(s), and I have discussed the potential benefits and possible risks of study participation. Any questions the individual(s) have about this study have been answered, and we will always be available to address future questions, concerns or complaints as they arise. I further certify that no research component of this protocol was begun until after this consent form was signed.

_____ _____

Investigator signature Date/Time

_____

Printed name of investigator