

Administration Case Report: Total Hip Replacement

This case report represents the individual experience of Dr Alexander P. Sah, and is intended to demonstrate his methodology for using EXPAREL in patients undergoing a total hip replacement (THR) with an anterior approach.

Pacira BioSciences, Inc. recognizes that there are alternative methodologies for administering local anesthetics, as well as individual patient considerations when selecting the dose for a specific procedure.

EXPAREL is a local anesthetic that produces postsurgical analgesia in patients aged 6 years and older. It is administered via single-dose infiltration. When infiltrated into the surgical site, it produces local analgesia. It may also be infiltrated in the fascial plane to produce regional analgesia as a regional field block. Regional anesthetic techniques to produce regional analgesia include, but are not limited to, transversus abdominis plane (TAP) block, pectoralis (PEC) and serratus anterior plane (SAP) blocks, erector spinae plane (ESP) block, and quadratus lumborum (QL) block. EXPAREL may also be administered as an interscalene brachial plexus nerve block in adults to produce postsurgical regional analgesia in total shoulder arthroplasty (TSA) and rotator cuff repair (RCR) procedures.

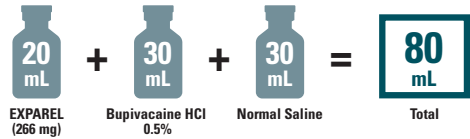
CASE INFORMATION

Physician Name	Alexander P. Sah, MD
Affiliation	Sah Orthopaedic Associates; Medical Co-director, Institute for Joint Restoration; Director, Outpatient Joint Replacement Program; Chair, IJRR Research and Education Committee, Fremont, CA
Surgical Case Performed	THR, anterior approach
Inpatient or Outpatient Procedure	Outpatient

PATIENT CHARACTERISTICS

Gender	Male
Age	70 years
Patient History and Characteristics	Patient presented with worsening right hip pain and concomitant limitations, as well as chronic increasing groin pain. X-rays confirmed bone-on-bone OA. Patient underwent a successful left THR with a mini-posterior approach 16 months prior and was prepared to proceed with a right THR using an anterior approach.

PROCEDURAL DETAILS

Incision Size	8 to 10 cm
Preoperative Medications Used	IV dexamethasone 10 mg, IV TXA 1 g
Preoperative Analgesics Used	PO 200 mg celecoxib, PO tramadol 100 mg, PO pregabalin 75 mg, IV acetaminophen 1 g
Intraoperative Analgesics Used	Upon induction of general anesthesia, 80 mL of expanded EXPAREL for local infiltration
Dose of EXPAREL and Total Volume Used	 <p>20 mL EXPAREL (266 mg) + 30 mL Bupivacaine HCl (0.5%) + 30 mL Normal Saline = 80 mL Total</p>

IV=intravenous; OA=osteoarthritis; PO=by mouth; TXA=tranexamic acid.

The recommended dose of EXPAREL for adults is based on the size of the surgical site, the volume required to cover the area, and individual patient factors that may impact the safety of an amide local anesthetic. The maximum dose of EXPAREL should not exceed 266 mg. The recommended dose of EXPAREL for patients aged 6 to <17 years old is 4 mg/kg, up to a maximum of 266 mg. The maximum dose of EXPAREL for interscalene brachial plexus nerve block in adults should not exceed 133 mg.

EXPAREL can be administered unexpanded (20 mL) or expanded to increase volume up to a total of 300 mL (final concentration of 0.89 mg/mL [ie, 1:14 dilution by volume]) with normal (0.9%) saline or lactated Ringer's solution.

Bupivacaine HCl (which is approved for use in patients aged 12 and older) may be administered immediately before EXPAREL or admixed in the same syringe, as long as the ratio of the milligram dose of bupivacaine HCl to EXPAREL does not exceed 1:2. Admixing may impact the pharmacokinetic and/or physicochemical properties of EXPAREL, and this effect is concentration dependent. The toxic effects of these drugs are additive and their administration should be used with caution, including monitoring for neurological and cardiovascular effects related to local anesthetic systemic toxicity. Other than with bupivacaine, EXPAREL should not be admixed with other drugs prior to administration.

Please see Important Safety Information on the last page and refer to accompanying full Prescribing Information, which is also available at www.EXPAREL.com.

INFILTRATION NOTES

ASSESSED THE SIZE OF THE SURGICAL SITE AND DEPTH OF TISSUE, THEN PREPARED INJECTION MATERIALS ACCORDINGLY

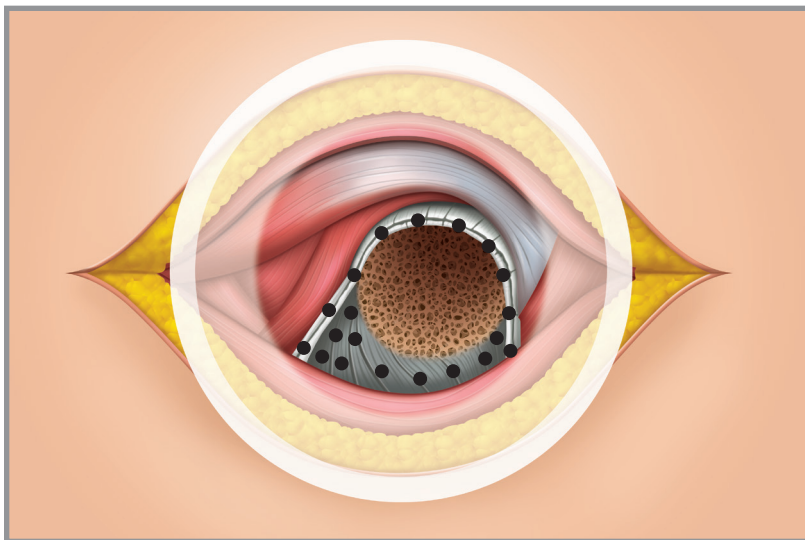
In this procedure, Dr Sah determined a total volume of 80 mL would be needed to cover the surgical site. He expanded 20 mL of EXPAREL® (bupivacaine liposome injectable suspension) with 30 mL of normal saline and admixed this solution with 30 mL of 0.5% bupivacaine HCl. Bupivacaine HCl was admixed to provide short-term local analgesia in the postanesthesia care unit that overlapped with the long-term local analgesia provided by EXPAREL.

DIVIDED INJECTATE INTO MULTIPLE SYRINGES WITH NEEDLE SIZES APPROPRIATE FOR INFILTRATION (20 TO 25 GAUGE) AND INFILTRATED INTO THE SURGICAL SITE

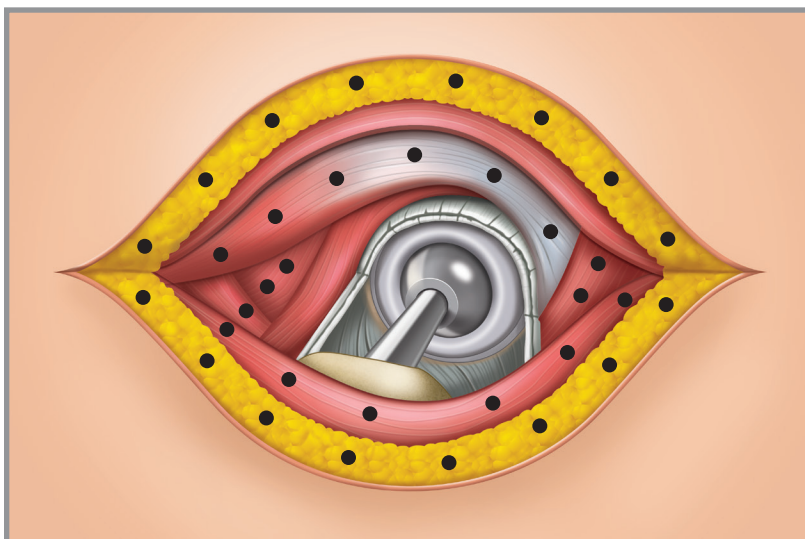
Dr Sah divided the EXPAREL injectate into four 20-mL syringes with 22-gauge needles.



For a total hip replacement (anterior approach), the EXPAREL injectate should be infiltrated as follows: 40% in the deep tissues, 40% in the mid-level/anterior tissues, and 20% in the superficial tissues.



- **Step #1:**
Deep tissues



- **Step #2:**
Mid-level/anterior tissues
- **Step #3:**
Superficial tissues

INFILTRATION NOTES (cont)

■ Step #1:

Before placing the prosthesis, Dr Sah infiltrated 32 mL of expanded EXPAREL® (bupivacaine liposome injectable suspension) into the deep tissues surrounding the capsule (anterior capsule, superior capsule, posterior capsule, deep anterolateral capsule, psoas tendon), the obturator externus, and the periosteum.



FIGURE 1. Deep tissues



Care should be taken not to inject into the tissue posterior to the hip capsule due to the proximity of the sciatic nerve.

■ Step #2:

After placing the prosthesis, Dr Sah infiltrated 32 mL of expanded EXPAREL into the mid-level/anterior target sites superficial to the deeper capsular structures. These included the gluteus medius and minimus muscles, the rectus femoris muscle, the tensor fascia lata muscle, and the sartorius muscle.

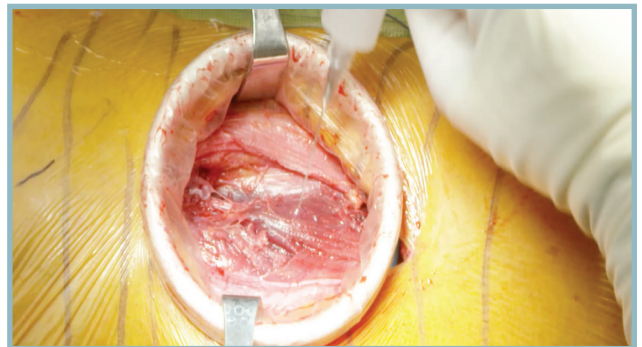


FIGURE 2. Mid-level/anterior tissues

■ Step #3:

Dr Sah then injected 16 mL of expanded EXPAREL into the superficial fascia, subcutaneous layer, and skin surrounding the surgical site.

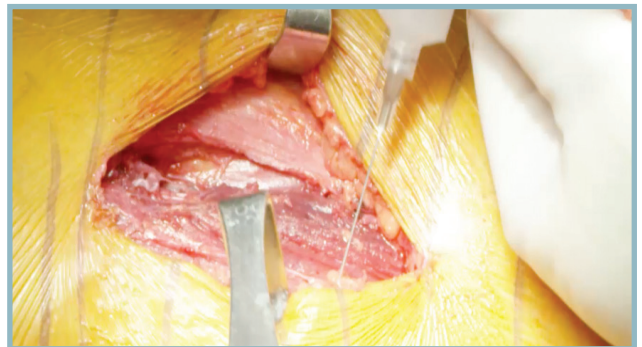
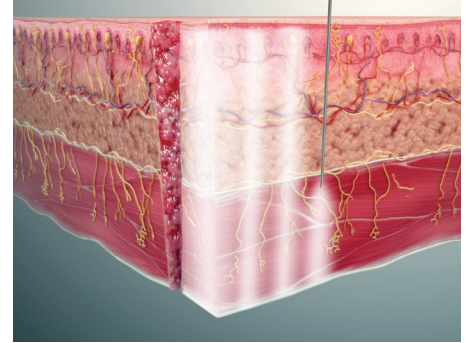


FIGURE 3. Superficial tissues

INFILTRATION NOTES (cont)

PROPER TECHNIQUE IS CRUCIAL FOR ANALGESIC COVERAGE

Dr Sah infiltrated EXPAREL® (bupivacaine liposome injectable suspension) into all tissue layers using a moving needle technique. With a moving needle technique, the injections were spread in a fanlike pattern and occurred as the needle was both inserted and withdrawn to maximize the coverage area. This technique was systematically and meticulously repeated at each injection site, with overlapping diffusion of EXPAREL to ensure there were no gaps in analgesic coverage.



Important Safety Information

EXPAREL is contraindicated in obstetrical paracervical block anesthesia.

Adverse reactions reported in adults with an incidence greater than or equal to 10% following EXPAREL administration via infiltration were nausea, constipation, and vomiting; adverse reactions reported in adults with an incidence greater than or equal to 10% following EXPAREL administration via interscalene brachial plexus nerve block were nausea, pyrexia, and constipation.

Adverse reactions with an incidence greater than or equal to 10% following EXPAREL administration via infiltration in pediatric patients six to less than 17 years of age were nausea, vomiting, constipation, hypotension, anemia, muscle twitching, vision blurred, pruritus, and tachycardia.

If EXPAREL and other non-bupivacaine local anesthetics, including lidocaine, are administered at the same site, there may be an immediate release of bupivacaine from EXPAREL. Therefore, EXPAREL may be administered to the same site 20 minutes after injecting lidocaine.

EXPAREL is not recommended to be used in the following patient populations: patients <6 years old for infiltration, patients younger than 18 years old for interscalene brachial plexus nerve block, and/or pregnant patients.

Because amide-type local anesthetics, such as bupivacaine, are metabolized by the liver, EXPAREL should be used cautiously in patients with hepatic disease.

Warnings and Precautions Specific to EXPAREL

Avoid additional use of local anesthetics within 96 hours following administration of EXPAREL.

EXPAREL is not recommended for the following types or routes of administration: epidural, intrathecal, regional nerve blocks **other than interscalene brachial plexus nerve block**, or intravascular or intra-articular use.

The potential sensory and/or motor loss with EXPAREL is temporary and varies in degree and duration depending on the site of injection and dosage administered and may last for up to 5 days, as seen in clinical trials.

Warnings and Precautions for Bupivacaine-Containing Products

Central Nervous System (CNS) Reactions: There have been reports of adverse neurologic reactions with the use of local anesthetics. These include persistent anesthesia and paresthesia. CNS reactions are characterized by excitation and/or depression.

Cardiovascular System Reactions: Toxic blood concentrations depress cardiac conductivity and excitability, which may lead to dysrhythmias, sometimes leading to death.

Allergic Reactions: Allergic-type reactions (eg, anaphylaxis and angioedema) are rare and may occur as a result of hypersensitivity to the local anesthetic or to other formulation ingredients.

Chondrolysis: There have been reports of chondrolysis (mostly in the shoulder joint) following intra-articular infusion of local anesthetics, which is an unapproved use.

Methemoglobinemia: Cases of methemoglobinemia have been reported with local anesthetic use.

Disclosure: Dr Sah is a paid consultant for Pacira BioSciences, Inc.

Full Prescribing Information is available at www.EXPAREL.com.