SPLASH BLOCK COMPARISON WITH OTHER LOCOREGIONAL TECHNIQUES IN DOGS AND CATS

UAB Universitat Autònoma de Barcelona
Facultat de Veterinària

IRENE MORESO SUBIRATS – FINAL DEGREE PROJECT – JUNE 2026

INTRODUCTION

"Locoregional anaesthesia is a cornerstone of multimodal analgesia".

Splash block → Direct instillation of a local anaesthetic into tissue at the end of surgery. A **simple**, **inexpensive** option for postoperative pain control. However, its efficacy remains under evaluation, partly due to its lack of pre-emptive analgesia and wind-up prevention.

OBJECTIVES: Evaluate use and efficacy of the splash block across different anatomical sites in comparison to other locoregional blocks, based on the published literature.

RESEARCH METHODS

Keywords: *Splash block, locoregional anaesthesia, incisional splash, topical irrigation, drain lavage, intraperitoneal, instillation or irrigation + ropivacaine, bupivacaine, lidocaine, analgesia, small animal, dog or cat.*

	Canine references			Feline references		
	Found	Consulted	**Used**	Found	Consulted	**Used**
PubMed	47	39	**24**	28	23	**11**
Google Scholar	41	15	**3**	17	9	**3**
UAB library service	18	5	**1**	12	4	**2**
Citation tracking	14	13	**7**	11	9	**5**

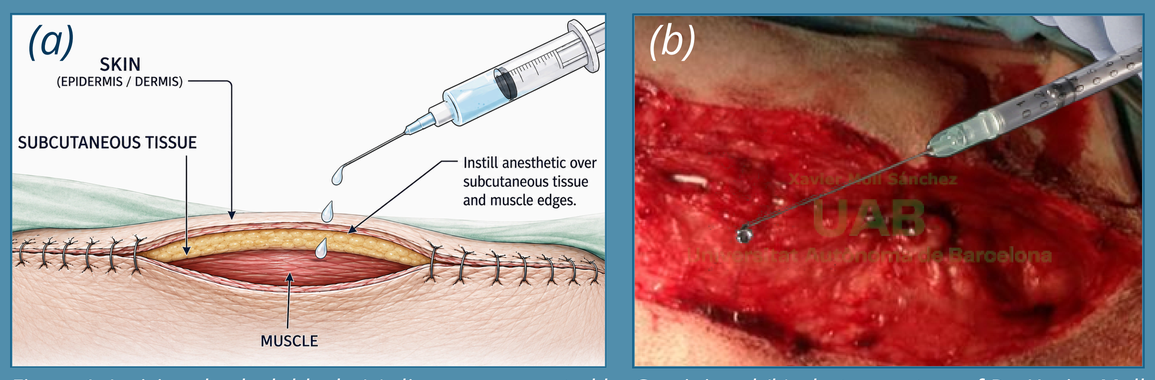


Figure 1: Incisional splash block; (a) diagram generated by Gemini and (b) photo courtesy of Dr. Xavier Moll.

INCISIONAL SPLASH BLOCK

Apply onto **exposed subcutaneous or muscular tissue prior to closure**. Widely used across procedures with variable protocols. Efficacy remains inconsistent but it is **safe**, **does not interfere with wound healing** and may provide **occasional clinical benefit**, although it is generally inferior to other advanced blocks such as the transversus abdominis plane (TAP) block.

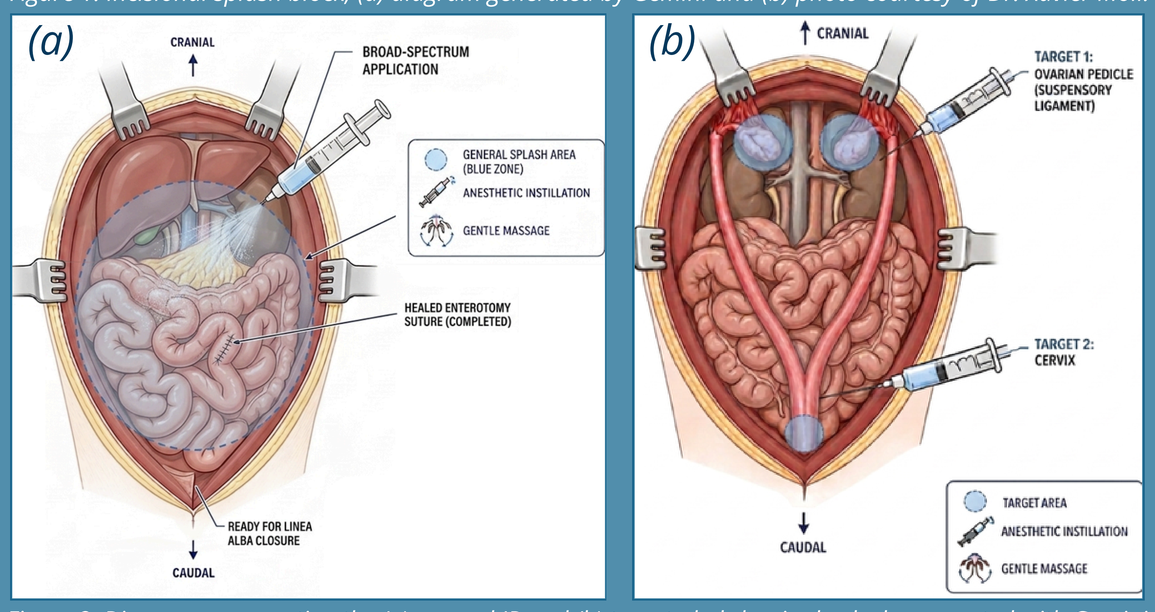


Figure 2: Diagram representing the (a) general IP and (b) targeted abdominal splash; generated with Gemini.

ABDOMINAL SPLASH BLOCK

Most studied splash site, mainly in ovariohysterectomies in dogs.

Targeted application (ovarian pedicles/cervix) preferred over general intraperitoneal (IP) instillation.

When applied **before surgical manipulation**, with **gentle massage** and adequate volume/contact time, may **enhance efficacy** and provide **pre-emptive analgesia.**

Efficacy also variable and, especially in major abdominal surgeries, inferior to advanced regional blocks, but **useful in Trap-Neuter-Return** (TNR) **programs or resource-limited settings** due to **simplicity, safety, and low cost.**

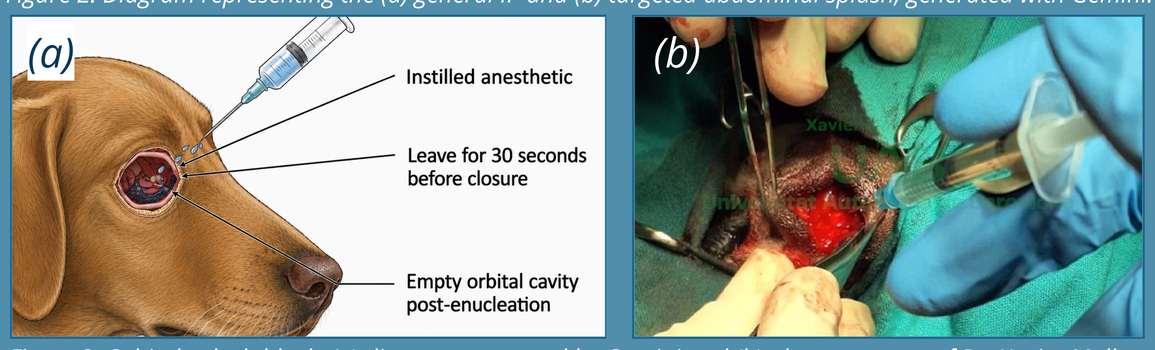


Figure 3: Orbital splash block; (a) diagram generated by Gemini and (b) photo courtesy of Dr. Xavier Moll.

ORBITAL SPLASH BLOCK

Instill into the **empty orbital cavity** after globe removal. Suitable in non-specialist settings or if ultrasound (US) guidance is unavailable, and **of choice when needle-based blocks are contraindicated** (e.g. orbital neoplasia). Retrobulbar anaesthesia (RBA) seems to provide superior analgesia but require expertise and carry higher complication risk.

OTHER SPLASH BLOCKS

Includes otologic, oral, nasal and intrapleural applications, where **scientific evidence on its efficacy is currently scarce, dated or limited to clinical opinion** and standardized protocols are not established. In practice, they are used in individualized cases, **when appropriate alternatives are not feasible and because it's a low-risk technique**. Practitioners are encouraged to **consult emerging literature**.

FINAL RECOMMENDATIONS

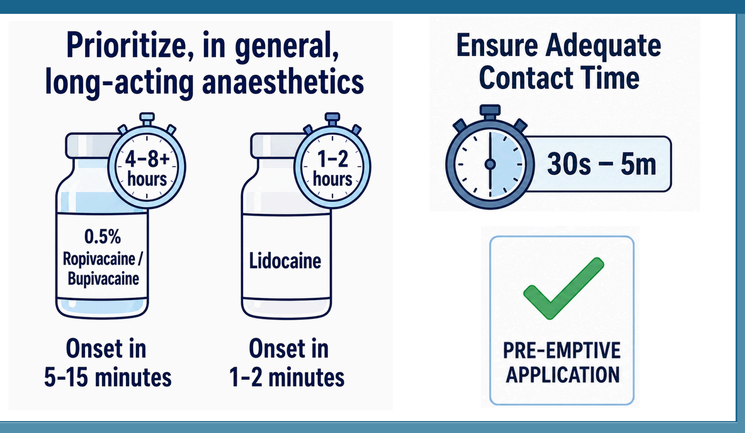


Figure 4: Final recommendations; diagram generated by Gemini.

Drug choice	In general, prioritize 0.5% ropivacaine or bupivacaine due to their longer action, but in abdominal surgery, when applied pre-emptively, lidocaine can present advantages due to its rapid onset.
Contact time	Ensure a minimum of 30 seconds to 5 minutes.
Volume	Use a sufficient volume for uniform coverage (0.5 mL/kg in IP).
Timing	Administer pre-emptively, before tissue manipulation or traction.
Clinical use	Highly recommended for resource-limited settings, when needle-based blocks are contraindicated and in TNR programs.
Caution!	Should NOT routinely replace specific nerve blocks (like RBA or TAP) in highly invasive procedures such as enucleations or radical mastectomies.

CONCLUSIONS: The splash block is a safe and cost-effective option with few complications. The WSAVA guidelines recognize it as a valid option in certain settings but further standardized research is required.