# 不同濃度之 Bupivacaine 用於超音波導引之上臂神經叢阻斷術對於肩關節鏡手術後止痛及住院天數之探討

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## 摘要

**研究背景與目的：**肩關節鏡是骨科常見的手術，但是絕大多數的病人在手術後都會經歷中度到重度的疼痛，而手術後的疼痛會延遲病人的復健與出院時間。對於肩關節鏡而言，臂神經叢阻斷術可以提供最有效的手術後止痛，而不同的局部麻醉藥物與濃度用於臂神經阻斷術會有不同的影響。Bupivacaine 是常見的局部麻醉藥，但是不同濃度對於手術後止痛、運動功能影響、術後止痛藥的給予及術後住院天數的影響尚未探討。

**研究方法：**在雙盲試驗的架構下，42 位病患隨機分配為兩組分別給予不同濃度的 Bupivacaine 各 30 ml。在手術之前先進行臂神經叢阻斷術。臂神經叢阻斷術的操作均配合使用超音波導引及神經刺激器以幫助神經定位。手術後的疼痛指數、肌力指數、自覺疼痛的時間、嗎啡類止痛藥的用量、相關副作用及住院天數均有記錄。

**研究結果：**所有病患均沒有神經學方面的併發症。而在手術後 16 小時內記錄的疼痛指數與肌力指數兩組之間並無明顯差異。自覺疼痛的時間(0.25%: 1033 min ± 487 vs. 0.5%: 833 min ± 543, P = 0.256)、嗎啡類止痛藥的用量(0.25%: 95 mg ± 86 vs. 0.5%: 67 mg ± 109, P = 0.357)及手術後住院天數(0.25%: 4.8 day ± 2.6 vs. 0.5%: 5.6 day ± 3.4, P = 0.411)在兩組之間也無明顯差異。

**研究結論：**超音波導引之上臂神經叢阻斷術可提供肩關節鏡手術後安全、良好的止痛效果。0.25%與 0.5%之 Bupivacaine 對於手術後的止痛效果、運動功能的影響、嗎啡類止痛藥需求與副作用、住院天數並沒有顯著的差異。但是使用較低劑量的藥物可以降低藥物中毒的風險與提昇病人照護的安全性。

**關鍵字詞：超音波導引、臂神經叢阻斷術、疼痛、肩關節鏡**

# A Study of Pain Relief and Hospital Stay Provided by Ultrasound-guided Interscalene Nerve Block with 0.25% or 0.5% Bupivacaine After Shoulder Arthroscopic Surgery

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## ABSTRACT

**Background and Objectives:** Shoulder arthroscopy is a common orthopedic surgery, and most patients report moderate to severe postoperative pain, which can delay rehabilitation and discharge. Interscalene nerve block (ISB) is considered the most efficient analgesic technique after shoulder arthroscopy. Several local anesthetics with different concentration can be applied in ISB, but the analgesic effect and the influence of hospital stay of 0.25% and 0.5% bupivacaine are unknown.

**Methods:** in this double-blind study, 42 patients scheduled to undergo shoulder arthroscopy were randomly assigned to receive 30 ml of 0.25% or 0.5% bupivacaine before surgery. ISB was performed under the ultrasound guidance and nerve stimulator for nerve localization. Postoperative pain and muscle power scores, duration of painless period, narcotics consumption, side effects and hospital stay were recorded.

**Results:** No neurological complication reported in this study. Postoperative pain scores and muscle power scores between each group within first 16 hours were showed no significant different. Painless duration (0.25%: 1033 min ± 487 vs. 0.5%: 833 min ± 543, P = 0.256), opioid consumption (0.25%: 95 mg ± 86 vs. 0.5%: 67 mg ± 109, P = 0.357) and postoperative hospital stay (0.25%: 4.8 day ± 2.6 vs. 0.5%: 5.6 day ± 3.4, P = 0.411) were showed no significant different.

**Conclusion:** Ultrasound guidance ISB can provide safe and excellent postoperative pain relief after shoulder arthroscopy. We found no significant difference between 0.25% bupivacaine versus 0.5% bupivacaine with regard to postoperative analgesia, motor function influence, opioid consumptions and related side effects, and hospitalization. However, less dosage means less risk of toxicity and provides safer healthcare quality.

**Keywords: Ultrasound guidance, Interscalene nerve block, Pain, Shoulder Arthroscopy**